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BELÜGYI SZEMLE

PROFESSIONAL AND SCIENTIFIC PERIODICAL OF THE MINISTRY OF INTERIOR

ANDREA TÜNDE BARABÁS – JUDIT SZABÓ: Theoretical analyses of criminal cases initiated due to offences of illegal use of human body

GERGELY GÁRDONYI: Still Image Face Recognition in Hungary

ÉVA KOVÁCS-SZÉLES, ISTVÁN ALMÁSI, ÁKOS BALASKÓ, CSABA BÍRÓ, KÁROLY BODOR, CSILLA CSÖME, IZABELLA KAKUJA, ZSUZSANNA KREITZ, KORNÉL PAPP, CSABA TÓBI, JÓZSEF VOLARICS: How to respond a crime scene contaminated with radioactive material?

BENCE LAKATOS – GYULA VASS – LÁSZLÓ TEKNŐS: Official Analysis of the Great Debrecen Fires of 1802 and 1811

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PREFACE

Now we have come to the third special issue of Belügyi Szemle in English. Fortunately, the repository of high-standard scientific publications in English is practically inexhaustible. Numerous phantastic experts, researchers, doctorands honoured us by enrichment our present publication with their papers. When editing the articles, we did everything again, similar to our previous publications, to publish once more totally interesting and multilayer assembly of papers for our readers. It is infinite pleasure for us to present for the international public these papers submersing results of excellent domestic experts and researchers. We hope that similar to positive feedbacks we have received until now we can present a good basis for appreciating remarks and feedbacks this time, too. With our online special issues, we have reached another milestone in the life of Belügyi Szemle, and from here we intend to go on, under consideration of both professional and scientific aspects. Thank you to keep up with us and wish you pleasant pastime at reading.

the editorship

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Andrea Tünde Barabás – Judit Szabó

Theoretical analyses of criminal cases initiated due to offences of illegal use of human body

Abstract

Although occasionally there are talks and rumours about disappearances or kidnappings in Hungary for the purpose of organ and tissue trading or trafficking, there have not yet been confirmed cases from authentic sources of such offences in respect of the country. Every so often we hear of the ever-increasing international organ trading or trafficking. The National Institute of Criminology conducted a research project in 2017-2018 with the title Theoretical analyses of criminal matters initiated due to offences of illegal use of human body. The purpose of the research was to explore and analyse the characteristic features of criminal proceedings initiated in cases of illegal use of human body, and of the underlying offences. In addition, we also aimed at identifying potential enforcement difficulties of the factual situations, as well as mapping other anomalies, and assessing the domestic status of the issue. Accordingly, the subject of our research project focused on the legislative framework of the offence of illegal use of human body, its major domestic and international aspects, the characteristics of the criminal proceedings initiated due to such offences, and the experiences of enforcement. According to the findings of our research, it is only unambiguous, consistent and seamless professional legislation together with leveraging appropriate professional knowledge that can grant real protection in the field of the procedures and interventions affected by the offence of the illegal use of human body. Even though the situation in Hungary does not seem to be worrying, some anomalies of the legislative framework are obvious in light of our findings. The below paper concludes and sums up the most important findings of the research project.

Keywords: illegal use of human body, organ trading and trafficking, organ donation, investigation, frame-disposition

The starting point and the methodology of the research

According to the EU report of 2015 on organ trading and trafficking (URL1) '*the term 'trafficking in organs' groups together a whole range of illegal activities that aim to commercialise human organs and tissues for the purpose of transplantation*' and include '*the trafficking of persons with the intent to remove their organs, transplant tourism*' as well as '*trafficking in organs, tissues and cells*.' Organ trading and trafficking that had traditionally affected Southeast Asia and the Indian subcontinent also emerged in other parts of the world, such as China, South America, the Philippines, and Southern Europe, but since the turn of the millennium, there have been talks of cases in reference to Eastern Europe too (URL2). It is assumed that globalisation and the intensification of migration are deemed to have a significant impact on the patterns of illegal trade of human organs and tissues, therefore it seems reasonable to analyse criminal matters concerning the illegal use of human body in the light of international developments. The criminal offence of the illegal use of human body was first incorporated into the national substantive criminal law in 1998, however there has been little information on the number of criminal proceedings initiated in such cases since its introduction; we also have little information on the nature of those cases and how they were closed, respectively. Neither can we read much in the available literature on how excessive burden these cases constitute as regards the experts working in the field of criminal justice, and how they can cope with the likely procedural difficulties due to the specific nature of the offence. In accordance with the objectives of the research, we primarily relied on methods of data collection. Our examination of case files was aimed at analysing – on the basis of predefined criteria – any and all criminal cases initiated between 1998 and 2016 due to the illegal use of human body. However, the Unified Statistical System of Investigations and Prosecutions (ENyÜBS) which we relied on, contained only four such criminal cases. Since the conclusion of our research, only one additional case was recorded in ENYÜBS for the period between 2017 and 2019, thus our findings can be considered still relevant today. This very low number of cases together with the need for an authentic and thorough investigation of the research subject, and its strong interdisciplinary nature, necessitated the supplement of our research methodology. In order to clarify the research questions, we conducted group interviews with the participation of criminal justice experts – law enforcement personnel, public prosecutors – with prior experience in such criminal matters, as well as with medical profession experts, physicians/lawyers, transplant physicians and the representative of the Organ Coordination Office, a department of the Hungarian Nation-

al Blood Transfusion Service. During these interviews, we intended to obtain information going beyond the data that can be obtained from the criminal case files. By doing so, we could examine whether the number of procedures initiated due to such cases were so low indeed, and if they were not, what played a role in the resulting small number of cases. Finally, we were also interested in how the representatives of the various fields could see and assess the domestic situation regarding the offence of the illegal use of human body, especially related to organ and tissue trading or trafficking. Interviews were audio recorded, transcribed, and subjected to thematic analyses.

Domestic and international legislative framework

Paragraph (3) of Article III of the Fundamental Law of Hungary states that the use of human body or its parts for financial gain is prohibited. Organ and tissue trading or trafficking is a gross violation of individual rights and human dignity, criminal law protection is therefore necessary (Vaskuti, 2013, 217.). The international legislative background of the regulation is contained in Articles 21 and 22 of the Oviedo Convention promulgated in Act VI of 2002, pursuant to which human bodies and their parts as such cannot give rise to any financial gain, additionally if '*any part of a human body is removed, it may be stored and used for a purpose other than that for which it was removed, only if this is done in conformity with appropriate information and consent procedures*.' Another relevant international legal instrument is the so-called Declaration of Istanbul (URL3), which was adopted to discourage the adverse effects of the worldwide shortage of organs. The significance of the declaration lies not only in its awareness-raising nature, it is also an important move forward as it contains the definitions of organ trading or trafficking and transplant tourism. Another significant international instrument is the Council of Europe Convention against Trafficking in Human Organs, published and open for signature since March 25, 2015 (URL4), which has not yet been ratified by Hungary. The offence of the illegal use of human body was introduced into Act IV of 1978 as Crimes against medical intervention, order of medical research, and medical autonomy in 1998.[1] Its immediate precedent was the establishment of Act CLIV of 1997 on Health (hereinafter referred to as: Eütv.), which regulates in detail the types of researches that can be conducted on humans, the special procedures aimed at human reproduction, as well as organ and tissue transplantations.

1 Act XXII of 1998 on the Amendment of Criminal Law.

The Act prescribes and requires strict conditionality as regards the pursuit of such activities. Since the techniques and application of the rapidly developing medical procedures and research methods are subject to a number of risks, alongside their undoubtedly great benefits, the legislative authority found it necessary to deploy their legislative instruments under criminal law when the provisions of the above Eütv. (Act) are contravened or infringed. The offences in this category are now detailed in a separate chapter of the Criminal Code in force, Act C of 2012 (hereinafter referred to as: Btk.).[2] The criminal offences regulated in Chapter XVI of Btk. (Act) are frame-dispositions that are given substance to by the provisions of Eütv. (Act) (Tóth & Nagy, 2014, 104.). The offence '*illegal use of human body'* regulated in Article 175 of Btk. (Act)can be interpreted as a means of pursuing criminal action against organ and tissue trading or trafficking that cause growing concerns worldwide. Transplanting and implanting human organs, genes, cells, tissues, etc., or their use in other ways, raises a great many bioethical and legal dilemmas in themselves (See Sándor, 2006, 32–45.), obtaining and using them illegally will pose even more serious challenges to legislative authorities and enforcement authorities. This area requires complex regulations based on the cooperation between the health care system and civil and criminal law, which regulations comply with the defining ethical norms and standards. The offence currently in force was taken over from the previous Criminal Code and incorporated into the new version (Btk.) without any change in substance and with only minor clarifications, i.e. extending protection of criminal law to dead foetuses. The aggravating circumstances referred to in Paragraph (3) were expanded to include offences committed against persons under the age of 18, and the legislative authority decided to raise the minimum threshold for offences. Additionally, an explanatory note in accordance with Paragraph (5) was inserted into the normative text (Vaskuti, 2013, 217. see also below). The objects of offence are the human genes, human cells, human gametes, human embryos, human organs, human tissues, cadavers or part(s) of such or deceased foetuses. Section 3/A of Eütv. (Act) contains the definitions of the concepts of cells, tissues, organs, and embryos. Paragraph (5) Section 175 of Btk. (Act) defines the concept of human embryos more broadly than the clause referred to in Eütv. (Act), as it includes embryos removed from the mothers' uteruses, as well as those produced in special procedures for the purpose of human reproduction, which are not placed into the uteruses. The passive subjects of the covered offence are the natural persons from whose bodies any of the above objects of offence are removed.

2 Chapter XVI: Medical Procedures and Criminal Offenses Against the Order of Research.

The criminal conduct concerning the illegal use of human body includes unlawful obtainment, placement on the market and trafficking for financial gain. The offence can only be committed intentionally, according to Ervin Belovics's view (2016, 143.) with exclusive direct intent. The statutory statement of the offence does not contain results, therefore the act is of intangible nature. All preparatory acts of the offence are also punishable (Belovics, 2016, 143.). In domestic legal literature, many authors have criticised the criminal offence provision of the illegal use of human body. For enforcement authorities, the detectable inaccuracies that can be established as regards the enumeration of the objects of offence may create a problem (Karsai, 2013, 348.). For instance, Gábor Kovács and his co-authors (Kovács et. al. 2007, 19-20.) raise their objections regarding the use of the concept of genes in the statement of the facts. The authors have their additional concerns pertaining to the rapid progress and development in biotechnology that may allow the use of human DNA in certain procedures, e.g. producing human insulin, particularly for generating financial gain, which in this way will satisfy the criteria of the offence in question. The authors also mention in their criticism that certain non-cellular components of blood are missing or excluded from the seemingly complete enumeration of the possible objects of the offence, thus they are not protected against unlawful obtainment, trading, and trafficking. Krisztina Karsai considers the amendment of the list of objects of offence with the deceased foetuses unjustified for several reasons (Karsai, 2013, 348-349.).The legal application of the offence of the illegal use of human body poses a significant professional challenge not only due to the dogmatic problems referred to in connection with the protected legal interest and the object of the offence, but also due to its frame-disposition nature and to the complexity of the stipulations of the Eütv. (Act) (Tóth & Nagy, 2014, 104.). The number and nature of related legislation show us the specificity and the complexity of the area protected by criminal law, which we will not include due to the obvious lack of space.

The characteristic features of the criminal cases initiated due to the illegal use of human body

In the beginning of the research, we set out our objective to review all case files of criminal proceedings initiated upon offences of illegal use of human body. Unfortunately, the number of cases in the ENYÜBS database accessible to us was no more than four. Below please find the brief summaries of the most important aspects of these four criminal cases.

Case 1[3]

The criminal case initiated in 2005 due to the offence of preparation for the illegal use of human body attracted increased interest by the public and a great deal of media attention. The action was brought by the head of the Medical and Health Center of the University of Debrecen with reference to a hidden camera footage made by the Norwegian television channel TV2. The footage showed alleged autopsies carried out at night at the Department of Anatomy, Histology and Embryology, as well as it showed those human organs and body parts medical students had allegedly dissected in their dormitory rooms. The footage was broadcasted by the Hungarian television channel TV2 on April 25, 2005. An investigation was ordered in the spring of 2005upon suspicion of a preparatory act for the offence of the illegal use of human body. During the investigation it emerged that one of the personnel of the institute, the suspect in the case, had provided assistance to the unlawful obtainment and trafficking of human organs and body parts. Since, on the basis of the available data, it could not be established whether or not the suspect had committed the offence, the investigation against that person was abandoned and the case was dropped in the autumn 2006.

Case 2[4]

The National Bureau of Investigation at the Rapid Response and Special Police Service opened an investigation due to the offence of preparation for the illegal use of human body. The action was brought in 2013 upon the report of the director of the Organ Coordination Office (Hungarian National Blood Transfusion Service), who forwarded a message received by the director of Eurotransplant that raised concerns. The perpetrator from a newly created e-mail address had sent several messages to various domestic and foreign medical institutions and organisations for organ transplantation and offered one kidney for transplantation in return for payment of one hundred thousand Euros. Additionally, the perpetrator also had used classified ads on an advertising space. The identity of the perpetrator was revealed during the investigation. The accused was a college graduate educator with no previous criminal background; he admitted the perpetration of the act and fully cooperated with the authorities during the investigation. As the reasons for committing the offence, he mentioned his family's

3 Chief Prosecution Office of Hajdú-Bihar County, B.1632/2005.
4 Chief Prosecution Office of Békés County, 2249/2013. (Chief Prosecution Office of the Capital, Nf.17930/2013.)

hopeless financial situation and his inability to keep up with the repayments of his mortgage. Since the perpetrator's act was considered such a slight danger to society that even imposing the lightest penalty applicable by law or taking any other measures proved unnecessary, the investigation was abandoned, the case was dropped, and the perpetrator was reprimanded.

Case 3[5]

The criminal proceedings were initiated in 2010 by the report of the director of the Organ Coordination Office (Hungarian National Blood Transfusion Service) against unknown persons, who had offered their organs for transplantation in return of financial support on a newly set up website. By this act the accused had committed the offence of preparation for the illegal use of human body. The identity of the perpetrator was revealed during the investigation; the perpetrator admitted the perpetration of the act, in his defence he argued that he had requested the financial support to alleviate his difficult financial situation and not in return for his organ. The perpetrator was fully cooperative, terminated the website together with the ad found on the website. The prosecution against the accused was postponed in 2011 for a year, with maintaining the application of probation supervision, and the person concerned later lodged a complaint against that decision. The complaint was upheld, and the authority finally abandoned the investigation and the perpetrator was reprimanded.

Case4[6]

In this case the investigation was ordered against persons unknown due to the offence of the illegal use of human body and of the violation of the rules of experimental research on humans. Based on the available data it could be presumed that for research purposes ovarian tissue samples were intended to be secured during the patient's ovariectomy carried out due to her tumorous disease; the ovarian tissue samples were stored in a stem cell bank even on the day when the police report was filed. According to the accuser, the surgical procedure had once even been postponed on grounds that no personnel from that institute could be present at the hospital on that day. According to the expert opinion, although there was no medical reason for the postponement of the surgery, the provision, transfer, and acquisition of the ovarian tissue samples could not be established,

5 Chief Prosecution Office of Bács-Kiskun County, B.6202/2010.
6 Chief Prosecution Office of the Capital, NF.8616/2014.

nor could they be ruled out. Either the physician carrying out the surgery or the employee of the institute could carry out the unlawful obtainment of the human tissue, however, the act had become time-barred. Due to the act being time-barred, the National Bureau of Investigation then abandoned the investigation conducted against persons unknown on the grounds of the offence of the illegal use of human body; additionally the National Bureau of Investigation also abandoned the investigation conducted against persons unknown on the grounds of violation of the rules of experimental research on humans. Since upon the findings of the investigation, committing the offence could not be established, nor could they expect any result from conducting the procedure in its entirety. It is apparent that the cases initiated domestically are not the ones considered classic in international literature; they are typically minor cases representing low danger to society and mainly acts of preparatory nature from which little information can be revealed as regards the procedures initiated due to the illegal use of human body and the offences that serve as their bases. The bulk of the data gathered in reference to the offences under consideration, their background and in respect of enforcement were extracted and derived from group interviews conducted with prosecutors, law enforcement personnel (police at the National Bureau of Investigation) and experts in the field. Below discussed are the most important findings of the interviews.

Theoretical and practical aspects of the criminal offence of 'illegal use of human body': The findings of the group interviews

Several major topics unfolded from the interviews: 1) Observations, remarks, information, and viewpoints concerning the ENYÜBS case numbers and regarding direct concern about our country's involvement in organ trading or trafficking; 2) observations, remarks and criticism by enforcement authorities as regards the facts; 3) issues concerning the regulations and practice of health interventions and researches. Below we will discuss the major findings of the interviews accordingly. From the interviews conducted with the enforcement authorities it was revealed that despite the low number of criminal proceedings initiated with regard to the illegal use of human body, the data in ENYÜBS do not fully reflect reality. The reasons for discrepancy can be varied, for instance many acts are later reclassified during the procedures, or they do not get to the stages of accusation or prosecution. Additionally, among notification obligatorily received by the National Bureau of Investigation it can very soon be found

that the factual elements necessary to initiate the criminal proceedings in the cases are missing. According to the experience of the prosecution, classic organ trading or trafficking as well as criminal proceedings in their respect rarely occur; different types of acts do occur, although in small numbers, which are assessed and investigated under these statements of the facts. According to our interviewees' concordant opinions, it is not latency that is behind the remarkably low number of cases.[7] Although considering the international trends and the current mass migration, it has now become justified and timely to start investigating and analysing the domestic situation regarding organ trading or trafficking, the abovementioned have not yet had adverse effects in Hungary. Our country is still not a target country regarding illegal organ transplantations. The representatives of the medical field highlighted that providing the special surgical conditions required for organ transplantations, including the specially trained medical personnel – both surgeons and nurses – as well as after-care, etc. and the extremely high costs of the surgical interventions and their after-care together with the lack of demand with the ability to pay for the services all do not make it worth running such a network. According to a representative of the investigative authority, in Hungary there had been no indication whatsoever that the persons missing had become victims of organ trading or trafficking; mostly there had been fatal offences in the background. As regards the potential effects of migration, Hungary is primarily a transit country, it is highly unlikely, mainly for the reasons mentioned above such as the nature of intervention and the assumable reservations of the potential recipients that unlawful removal of organs would happen here. The low case numbers may be explained by the EU directives issued in the early 2000s, which among others regulate the quality and safety issues of organ transplantations. In Hungary, all hospitals and health care facilities must be inspected in accordance with the European Union regulations, which regulations constitute a significant safeguard against certain offences concerning the offence of the illegal use of human body. The interviewed expert of the Organ Coordination Office highlighted that Hungary's joining the organisation Eurotransplant in 2011 opened up the possibilities to monitor the entire process of organ-exporting and importing for the purpose of organ transplantation. Hungary will not have to worry about illegal organ trading or trafficking, since organ transplantation processes are very well regulated here and, apart from some minor organisational or scheduling shortcomings,

7 According to experts, in the process of the removal, storage and transplantation of tissues, as well as in relation to the genetic data carriers under the act on human genetics, there may be cases that remain hidden for good.

they function properly, therefore they are not adversely affected by international processes. There are, however, some acts occurring in the system, which meet the provisions of the offence discussed, but pose only a slight danger to society. This finding was supported by the reviewed criminal cases; it turned out that the application of the provisions of the examined offence resulted in quite heterogeneous, and typically less serious, acts not slipping through the cracks. Therefore, it is not that surprising that the surveyed enforcement authorities all reported interpretation and application difficulties in relation to the facts, which difficulties seem to correlate closely with the status of non-criminal law regulations relevant to the frame disposition of the illegal use of human body. The application of the disposition requires and necessitates the intense and effective cooperation between various special fields, thus making it indispensable that interdisciplinary approaches be encouraged. It is not only the interdisciplinary nature and the complexity of the criminal proceedings initiated in relation to the offence studied that present difficulties for the enforcement authorities in relation to their application, it is also due to the issue of legal dogmatics identified and described in relation to the legislative text and the protected legal interest. During the interviews there were opinions expressed that it is not only the investigated criminal facts that constitute problems, it is rather the incoherent nature of the legal background and its casuistic characteristics that do so. If the latter issue could be solved, and a final and definitive agreement on the protected legal interest could be reached, the criminal offence of the illegal use of human body would be functional, because it can then be clearly decided whether or not the circumstances of the facts are satisfied. In this way only those cases could be prosecuted in the criminal proceedings whose risks posed to society would justify the strictness of the enforcement authorities. During the interviews there were several suggestions made not only about the appropriate and necessary modifications of the legal background in general – e.g. Eütv. (Act) –, but also about settlements of specific practical legal problems through appropriate legal means, including the creation of a national register verifying eligibility, and the creation of a mandatory and comprehensive control system, respectively. Ensuring the priorities in quality assurance and professional traceability could be done by implementing a transplantation traceability register, which is now technically available, it is only legal regulations that are awaiting adoption. Further issues to be examined, including the traceability register of living donations, can be found in a 2010 report on transplantations (URL5) made by the State Audit Office. Our experts also suggested the need for subsequent amendments of legislation aimed at detecting and eliminating any potential abuses of living donations for transplantation, which amendments

would enable and facilitate the information exchange between ethics committees at universities. They also emphasised that Hungary is lacking a powerful health authority that could and would ensure prevention and early intervention by continuously monitoring health service providers and researchers. Screening procedures would be necessary to ensure intervention during the time of irregularities, prior to those irregularities becoming committed offences, so that these activities could be corrected and forced back to legality. A novelty of the research is the finding that the process of removal, storage and transplantation of tissues is unregulated in Hungary, which may give rise to abuses indeed. According to the estimates by our interviewed experts, the number of cases not yet identified and disclosed can indeed be significant, so latency is high. Thus, the elimination of such cases can be carried out partly by legal regulations, and partly by creating and operating the proper register. According to their proposal, it should be made mandatory that the service providers' teams – both the team of donations and processing – document into a register set up for this purpose, so the entire process can become traceable. Additionally, the experts highlighted the importance of coordinating Eütv. (Act) and Act XXI of 20008 on human genetics[8], the timeliness of which is also reflected in the remarks made by the enforcement authorities, namely that cases in relation to human reproduction procedures have presently begun to appear in the current legal proceedings initiated upon the illegal use of human body.

Conclusions

Our research conducted on the subject of the illegal use of human body was justified by the increasing global issue of illegal organ trading or trafficking. According to the findings and considering the official statistical data as well as the information shared by the enforcement authorities and the experts, the domestic situation does not seem worrying. Greater and lesser anomalies of the legislative framework, however, did surface during the research, among which were the issues of legal dogmatics in relation to the investigated criminal offence. As regards international experience and our research, it can be established that inadequate legal regulations serve as the breeding ground for illegal deals, therefore the appropriate legislative framework may serve as a powerful weapon against tissue trading or trafficking. Criminal law, however, can only mean

8 Act XXI of 2008 on the Protection of Data on Human Genetics, on the Rules of Research and Examinations of Human Genetics, and of the Functioning of Bio-Banks.

a fraction of this legislative framework, and on the basis of the principle of ultima ratio it can only be applied when the infringements have already occurred anyway. Another important aspect in the application of the studied criminal offence is its specificity, meaning that trivial cases that only pose a low degree of danger to society should not unnecessarily occupy time, and tie up capacities of the criminal justice system and, at the same time, major offences should be sanctioned. The applicability of the frame-disposition is closely linked to the qualities of legislation. According to the findings of our research, it is only unambiguous, consistent and seamless professional legislation together with leveraging appropriate professional knowledge that can grant real protection in the field of the procedures and interventions affected by the offence of the illegal use of human body. New advances and improvements in science, however, will result in new issues time and time again in relation to acts of the illegal use of human body. Legislation, namely Eütv. (Act) did not follow these changes, therefore its regulations became obsolete from a number of aspects. Regarding our interviewees, a major objective was formulated in relation to updating and standardizing the legislative framework in reference to medical interventions in line with the developments in science.

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Gergely Gárdonyi

Still Image Face Recognition in Hungary

Abstract
The Still Image Facial Recognition System has been in operation for four years in Hungary. The present study details the experiences gained to date, as well as the possibilities, results and plans related to the subject. It briefly presents the history of still image face recognition, provides international outlook, describes the legal framework and the operation of the system, and finally outlines future development opportunities.

Keywords: face recognition, analysis, facial recognition system, biometric identification, expert

Introduction

No significant study has been released on the Still Image Facial Recognition System (hereinafter: SIFRS) so far, even though the field itself is developing rapidly, achieving more and more objectively measurable success; the demand for the service, which plays more significant role in investigations each year, is increasing, and the subject nowadays attracts considerable attention also in scientific research. In Hungary, identification based on facial image has long been of concern to criminalists. As early as in 1887, only a few years after the criminal record system had been established, it was ordered that the records should be supplemented with photographs, and a photography studio was established in 1903 (Szigetvári, 2018, 169-180.). Meanwhile, for crime prevention, a separate manual record of traveling pickpockets was set and copied in 2000 counterparts during the preparation for the 1896 World Expo. The record, which included photographs of 685 persons, was sent to all police departments in Budapest and many police departments and gendarmerie stations in other towns of the country (Anti, 2017). After years of preparatory work, the National Criminal Records Office was established on 1 January 1909 (URL1). In

1958, a study was prepared on the means of identifying a person based on two photographs, i.e. on the factors that affect the quality of the images made for such purpose, the way the comparative analysis should be carried out, and the means to evaluate its results (Illár, 1958). Only a few years later, it was urged that a criminal record system based on facial images and facial features should be created, allowing for image prioritization (retrieving images from the database). A study notes that while approximately 1000 criteria can be determined and assembled precisely in individual facial recognition, approximately 40-70 of those criteria can be applied to achieve the identification of a high-quality facial image (Detrői & Déri, 1967). The National Police Headquarters made attempts to prepare an automated system already in the noughties (URL2), yet the first significant step in such regard was only taken in 2013 when the facial image profile record was established as a result of a decision rendered by the government in the same year. This was preceded by substantial examinations with regard to data protection, testing, and a procurement procedure, as well as the adoption and taking effect of Act CLXXXVIII of 2015 on facial image analysis database and facial recognition analysis system. The operation of the still image facial recognition system commenced on 15 March 2016, initially as the task of the then Central Office for Administrative and Electronic Public Services. Soon thereafter, on 1 January 2017, it was included among the functions of the Hungarian Institute for Forensic Sciences (hereinafter: HIFS) and has remained so to date.[1]

Classification of facial recognition systems

Facial recognition systems have undergone significant development in recent years due to artificial intelligence and deep learning algorithms. Nowadays facial recognition systems are used in social media (e.g. the recognition of appearance on a photo), telecommunication, related to certain safety features (e.g. user identification for mobile phones), the private security sector (e.g. event security services), and public administration. Generally, two methods are applied in face recognition: the sample-based (or photometric) method on the one hand, in which the global features of the face or parts of the face (e.g. eyes, mouth) are compared with the stored samples, and the geometric-based method on the other hand, where certain details on a face (eyes, nose, chin, etc.) are analysed based on their position and dimensions in relation to each other (Németh & Tóth,

1 Section 9 of Government Decree 350/2016 (XI. 18.).

2019, 129.). Facial image analyses may be carried out when one photograph is to be compared with another; in that case, the task is to determine whether a match between the persons on the photos can be confirmed or excluded (or to what extent can the match be supported). This is called 1:1 authentication (verification) in the literature. A different task is when one image is to be compared with a large number of photographs in the database, seeking to find out whether the person on the concerned photo is identical to any person appearing on the photos retrieved from the record. This is the so-called 1:N identification, which is essentially the activity carried out in the HIFS at the moment. The former method can be applied to identify a certain individual – who has already come to the attention of the authorities – while the latter can be used to identify, for example, an unidentified person who committed a robbery that was recorded by surveillance cameras, but may also be suitable in other cases, e.g. for the detection of forgery (whether any ID cards were issued previously, under a different name, for the person indicated on a given document). However, no publicly accessible facial image database exists so far that includes both images suitable for identification (e.g. ID photos) and images retrieved from real life (e.g. footage of surveillance cameras) (Dogshun et. al., 2019.). Facial recognition systems can be divided into two groups: image-based and video-based face recognition. Both types exist in Hungary, under the name standing image and video-based facial recognition, respectively. The latter operates within the framework of the Special Service for National Security and is not discussed in the present paper. The operation of the SIFRS is included among the tasks of the Ministry of Interior, and the facial recognition analysis belongs to the HIFS.

International outlook

Facial recognition systems are considered highly controversial all over the world, primarily due to data protection concerns. Various examples can be seen, from full ban to a wide range of surveillance. In Europe, there is no uniform regulation (URL3), even though it is known that the extension of the Prüm legal framework is under development. The new regulation would allow for mutual retrieval from facial image databases (URL4). In the United States of America, state and local systems operate without federal regulation. According to a survey conducted in 2016, there are 18 states where databases including millions of driving licences are in operation (e.g. Utah, North Dakota), and 4 states where, beyond the aforesaid, records that include mug shots may also be used by the police (e.g. New Mexico). There are some states where the database is

not available on a state level, yet few cities use it nonetheless (e.g. California – San Diego, Los Angeles) (URL5). In the United States, the application of Chinese and Russian facial recognition systems in the critical infrastructural systems and national security has been banned by law since 2019 (URL6). As regards the facial recognition systems of the American government, it can be seen that many cities seek to gain time and have prescribed a moratorium of a few years during which those systems cannot be set up in public spaces or applied by the government in the concerned cities (URL7). In India, the Aadhaar Program, i.e. the world's largest national identification system with the capacity to handle one million registrations per day, was launched by the government and has been fulfilled with data by identifying over 1.3 billion individuals. In the program, where each person receives a 12-digit unique identification number (Aadhaar), particular attention is paid to preventing any misuse (primarily seeking to prevent a registration under another person's name). That goal is sought to be achieved by applying fingerprint, face, and iris recognition technology (URL8). Japan uses one of the world's most renowned facial recognition systems (developed by NEC), nowadays used frequently also at several events. Its accuracy was proved to be over 99% on the ceremony that marked the 30th anniversary of Emperor Akihito's accession to the throne, and where the system was used to accelerate and support entries. As widely known, the same system will be used at the Olympics hosted by Japan (URL9). However, it should be noted that the said accuracy was achieved after pre-entering and recording the data of approximately 1000 persons who entered the event and whose identification was backed by several metadata. The facial recognition systems used in China became infamous rapidly as a tool of a repressing state. Indeed, China seeks to include every single citizen in the source record of the system. Moreover, it attempts to sell its software to as many countries as possible, with less success in the USA and in Europe, and with more in the developing world. According to an article published in the Financial Times in December 2019, there were 67 countries (primarily in Asia, Australia, and South America) at the time whose facial recognition system serving surveillance purposes was related to China – not including airports and border crossing points (URL10). All in all, as regards world tendencies, it can be said that facial recognition systems – with different tools, methods, and to various extents – have been or are planned to be introduced and applied extensively everywhere. Developed countries seek to find the line between the inviolability of privacy and the application of facial recognition systems supporting criminal and national security investigations. The most problematic legal issues primarily arise from the use of public space surveillance (CCTV). It appears that a solution that would be satisfactory for

all social strata and political forces has not yet been found at any place of the globe (URL11).

Legal framework

Act CLXXXVIII of 2015 on facial image analysis database and facial recognition analysis system (hereinafter: Facial Image Database and Facial Recognition Analysis System Act) appeared as a new element both in the Hungarian legal system and in public thinking in 2015. Even though some human rights defenders spoke out against the adopted law (URL12), the database was established and the activity related to it, commenced in the spring of 2016. The reasoning of the act points out that it has been a strategic objective since 2013 to include all Hungarian citizens into the Personal Data and Address Record, regardless of whether living in Hungary or abroad (URL13). The aims of the facial image profile database[2] include apprehending perpetrators of criminal offences; identifying persons convicted, or detained on the basis of other legal titles upon their acceptance to the prison service facility; tracing persons missing or wanted for any other reason; identifying the applicants in procedures seeking the issuance of identity cards or other documents suitable for identification; providing support for national security services, as well as for bodies entitled to carry out covert information gathering and apply undercover means, as regards such activities; providing support to the national security services at national security controls, as well as at their tasks prescribed by law related to investigation, national security defence and counterintelligence, intelligence, and control carried out in relation to national security, industry security, interior security and crime prevention, and at the operational protection of facilities; carrying out personal protection tasks prescribed by law; carrying out tasks prescribed by law in relation to the protection of priority bodies (institutions) and facilities; providing support to authorities abroad, for the purpose of crime prevention, criminal investigation and the conduct of criminal procedure, at identifying persons against whom such procedure is conducted; providing support in case of extraordinary death and in relation to body identification if the deceased is unknown; carrying certain tasks for the Witness Protection Service; identifying persons who intend to cross the state border; identifying persons who qualify as third-country citizens in the framework of alien policing procedures; identifying persons covered by the act on asylum and identifying the ap-

2 Section 5 of the Facial Image Database and Facial Analysis System Act.

plicants in the procedures for acquiring Hungarian citizenship. As of 1 May 2020, further aims of the database are to identify individuals affected by police measures or to verify their identity, and to provide support, in the framework of customer identification, for verifying the identity of applicants at electronic administration, including applicants seeking for the issuance of identity cards or other documents suitable for identification. These tasks aim, on the one hand, at decreasing the number of cases when an individual is to be taken to the police department, since they allow for means of identification on-site, and, on the other hand, at providing more flexible solutions to people by broadening the scope of electronic administration. These activities are not covered by the present paper; the system serving such activities is currently under development and is not related to the facial recognition analysis carried out by the HIFS. The law provides an exhaustive list of the bodies entitled to request facial recognition analysis and the purposes for which it can be requested.[3] That list includes the bodies carrying out classic policing activities (i.e. the Police in the classic sense), the National Protective Service, the Special Service for National Security, the Counter Terrorism Centre, the Constitution Protection Office, the Information Office, the Military National Security Service, the Hungarian Prison Service Headquarters, the National Directorate-General for Aliens Policing, the National Tax and Customs Administration, the Parliamentary Guard, the Counter Terrorism Information and Criminal Analysis Center, as well as the prosecution service and the courts. Each time, the search in the image profile database is carried out only in relation to the given case and the body requesting the service must designate the purpose of the search accurately.[4] These data are not provided to the body who carries out the facial recognition analysis, i.e. the analyst is not aware of whose image he or she is analysing and for what purpose. Thus, the analyst's activity is confined to comparing identifying features and drawing conclusions as regards the degree of identity. The body who carries out the facial recognition analysis neither keeps any records of nor processes any personal data. The given photograph is erased by the system automatically, each time after the analysis is finished.[5] In the framework of data provision, the body entitled to data request only receives the connection code attached to the relevant facial image profile. That body can gain access to the personal data belonging to the connection code in a separate procedure initiated by it. Thus, the analyst is not aware of whose image he or she analyses and for what pur-

3 Paragraph (3) of section 3 in the Facial Image Database and Facial Analysis System Act.
4 Paragraph (1) of section 13 in the Facial Image Database and Facial Analysis System Act.
5 Paragraph (10) in section 11 in the Facial Image Database and Facial Analysis System Act.

pose. The data of the person(s) sent as a match is received only by a member of the body who requested the analysis. Certain provisions of the Facial Image Database and Facial Recognition Analysis System Act are elaborated by Decree 78/2015. (XII.23.) BM of the Minister of Interior on the rules of operating the facial recognition analysis system. This Decree also regulates the conditions of requesting the service. In accordance with the said Decree, a cooperation agreement is to be concluded between the HIFS and the body entitled to requisition.[6] (The HIFS has already concluded the required agreement with each concerned body.) Provided such agreement exists, different entitlements can be requested at the Ministry of Interior to the co-workers of the bodies entitled to requisition. With the entitlement, they can turn directly to the body who carries out the facial recognition analysis, they can lodge images and accept responses (depending on the type of entitlement). The Facial Image Database and Facial Recognition Analysis System Act prescribes that the analysis shall be carried out within 8 working days,[7] and the said Decree obliges the HIFS to carry out the analysis within 24 hours[8] or even outside office hours within a 3-hour time limit if certain requirements are met.[9] The Decree also prescribes the necessary safety measures,[10] inter alia that the facial recognition analysis system is to be operated separately from all other systems, the premises and the facility (building) of the body who carries out the analysis shall be protected by electronic access control. The Decree also includes several other provisions ensuring impartial and secure analysis. Due to the hierarchy of legal norms, the general police authority (the National Police Headquarters) put a separate instruction into effect covering its own personnel, which prescribes their tasks in facial recognition analysis.[11] The instruction includes the procedure of requesting the analysis, the rules on photographing unidentified bodies, and the quality requirements of input images. The latter two sets of rules can be considered as obsolete, since the software used by experts evolved highly, thus, we made a proposal for the amendment thereof. The basis of the quality of images is provided by

6 Paragraph (1) of section 8 in Decree 78/2015. (XII. 23.) of the Minister of Interior.
7 Paragraph (6) in section 11 in the Facial Image Database and Facial Analysis System Act.
8 Paragraph (1) of section 5 in Decree 78/2015. (XII. 23.) of the Minister of Interior *'[…] if risk is posed to a minor, a situation imminently and severely threatening public or national security occurs, or there is a priority law enforcement interest in the procedure serving as grounds for the application of facial recognition analysis'.*
9 Paragraph (5) of section 5 in Decree 78/2015. (XII. 23.) of the Minister of Interior *'[…] if the facial recognition analysis is applied in order to carry out its tasks related to measures to be taken in special legal order or to the handling of a crisis due to massive immigration'.*
10 Section 11 in Decree 78/2015. (XII. 23.) of the Minister of Interior.
11 Instruction 11/2016 (IV. 29.) of the National Police Headquarters on the tasks related to the application of facial recognition analysis database and facial recognition analysis system.

input requirements of the manufacturer of the earlier software,[12] but practice shows that both the software and the analyst can handle images of much poorer quality as well. As a point of reference, we usually advise the following: '*If you recognised the person on the photo had you known him or her, the photo can be lodged*.' However, surprises also occur every now and then: sometimes an image appears to be completely unsuitable for analysis, but the software is nonetheless able to recognise a face and generate a relevant candidate list. Although it is a bit unusual that the amendment of a norm adopted by the National Police Headquarters is preceded by a series of empiric experiments, we considered it necessary in order to make a professionally well-founded proposal as regards photographing unidentified bodies. In the course of those experiments, my colleagues uploaded photos taken of 56 bodies to the system. In the case of 41 persons, there was at least one photo (with a certain setting), with which we were able to find a match in the candidate list. Furthermore, there were four parameters evaluated in the experiment (eyes, light, image plane, viewing angle); as for the position of the eyes, the main conclusion was that the best result can be achieved if the eyes remain untouched during the shoot (i.e. closed eyes are not opened). Manual opening of the eyes – that is, if one follows the procedure set out in the Instruction of the National Police Headquarters – proved to be counter-productive in the light of research results, due to the development of technology. Thus, we proposed the amendment of the procedural protocol and the National Police Headquarters Instruction. All in all, as regards Hungarian legal regulation, it can be ascertained that the SIFRS serves the investigations

12 *'The image lodged for identification should, if possible, meet the following requirements:*
a) each image lodged for identification should only display one person or, if the former is not possible, the facial image to be identified must be unambiguously designated in the brief description field connected to the photograph;
b) the person on the image to be identified must be in a front-view position, as follows:
ba) lateral rotation of the head shall not exceed 30°,
bb) vertical pitch of the head shall not exceed 10°;
c) the face shall be well-lit, with diffused light;
d) the face on the image should not be lit from the side, since the shadow cast by the nose may significantly deteriorate the success of identification;
e) on the image lodged for identification, the person to be identified:
ea) may not wear any hat, hood or other piece of clothing that covers his face,
eb) may not wear sunglasses,
ec) his eyes must be opened;
f) the image lodged for identification must be of good quality and as high-definition as possible, pursuant to the following data:
fa) acceptable format of the image lodged for identification is with 'jpg.' extension,
fb) the pupillary distance between the eyes of the person to be identified on the image lodged for identification shall not exceed 50 pixels,
fc) definition of the facial image shall not be less than 0,3 megapixels, where the mass of the person's face is two thirds of the image.' (point 18 of Instruction 11/2016 (IV. 29.) of the National Police Headquarters)

carried out both by domestic law enforcement and national security agencies well, with proper safeguards, a database background of considerable size even on a European level, and a wide scope of users. Thanks to the still image recognition analysis activity, the number of requests increases steeply each year (URL14), and the success of the activity confirmed by the requesting bodies is increasing even more.

Facial recognition analysis

The process of the still image face recognition commences with the lodging of the image (e.g. a still frame of a camera footage recorded of the suspect) by the body entitled to requisition via a closed system,[13] the file number of which includes no identifier that would reveal the lodging body or the case.[14] Thereafter, the task is assigned to two analysts, who work separately in the facial recognition analysis center, and who upload the image to the software. In case of an image suitable for analysis, the software generates a candidate list of the most similar images. The analysts, who work in different premises, not being aware of each other's activity, then choose the persons who, based on professional aspects, can be indicated as matches in the response given to the requesting body.[15] Before sending the response, the analysts develop a consensual, professionally well-grounded joint opinion. To improve the quality of the image, the analysts may edit any poor-quality images before uploading them to the software. Independence is ensured primarily by the organisational independence of the HIFS and the fact that the origin of the images, as well as the legal ground of the request is unknown by the analysts,[16] the analysis is carried out by two analysts (working separately in different premises)[17] who are obliged to promptly report any suspicious event that might hinder the uninfluenced nature of their activity or the security of data.[18]

As of 1 July 2020, the quality assurance of the still image recognition analysis is ensured in accordance with ISO 9001:2015 standard, thus, the aforesaid rules are guaranteed by an external certification body (URL15). The quality of the facial recognition analysis in Hungary is illustrated by the fact that the domestic

13 Point 10 of Instruction 11/2016 (IV. 29.) of the National Police Headquarters.
14 Point 12 of Instruction 11/2016 (IV. 29.) of the National Police Headquarters.
15 Paragraph (7) of section 11 in Decree 78/2015. (XII. 23.) of the Minister of Interior.
16 Point 12 of the Instruction 11/2016 (IV. 29.) of the National Police Headquarters.
17 Paragraph (6a) of section 11 in the Facial Image Database and Facial Analysis System Act and paragraph (7) of section 11 in Decree 78/2015. (XII. 23.) of the Minister of Interior.
18 Paragraph (5) of section 11 in Decree 78/2015. (XII. 23.) of the Minister of Interior.

facial recognition analyst service participated at the experiment carried out by ENFSI[19] in 2019 involving 27 countries, and achieved second-best result.

Future tasks of the still image facial recognition

Continuous development is carried out in the facial recognition analysis system, from two directions: on the one hand, the manufacturer of the software carries out development and, on the other hand, the HIFS makes development proposals to the competent department of the Ministry of Interior, also supporting the operation of the system with helpful suggestions. The two organizations develop the IT system operating the SIFRS in close cooperation and propose the amendment of law if necessary. There is a serious potential in extending the source record by the front-view images of the criminal record of perpetrators,[20] as well as in allowing for international data exchange or in small amendments of the database structure to create scene-to-scene connections, similarly to that of dactyloscopy traces and DNA profiles. Further extension of preliminary image processing procedures, which are so far in a pilot phase, also pose good opportunities. Experts are working on the development of several other methods serving the facilitation and efficiency of analysis. Furthermore, the attempts as regards the quality assurance of the field should be extended, and accreditation would also be reasonable. The transfer of continuously innovated technologies and methods is essentially important to the members of bodies entitled to requisition. Equally important is the training of facial image analysts and the conduct of empirical research. In such regard, beyond the hard work of the co-workers, extensive international contacts in the working groups of Interpol and ENFSI can also be rather beneficial.

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19 European Network of Forensic Sciences.
20 Point 6 of annex 1 in Decree 12/2016. (V. 4.) of the Minister of Interior.

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How to respond a crime scene contaminated with radioactive material?[1]

Abstract

Radioactive materials have become an explicit target for criminal and terrorist organizations in recent years, as they can be effective tools for panic and serious economic damage generation when used in a variety of weapons (e.g. explosive devices capable of dispersing radioactive material). In addition, radioactive material has been used in several cases to commit crimes such as poisoning or radiation exposure to potential target persons. The most famous is the so-called 'Litvinenko case', in which a Russian intelligence officer was poisoned with polonium in 2006. In addition to the international cases, however, radioactive material is also found in Hungary time-to-time during home searches. Even the detection of these materials can be challenging in the absence of appropriate detection equipment. Their exact identification, collection and specific examination requires specialized expertise. If the crime scene personnel does not detect the presence of radioactivity at the scene in a timely manner (e.g, because it cannot be detected without measuring equipment), the persons working there may subsequently suffer serious damage to health, as well as large areas and objects can be contaminated by dispersed radioactive material. It can also cause serious economic damage. This article describes an operating procedure for the professional respond of crime scenes contaminated with radioactive material, developed by experts of the Hungarian National Police, National Bureau of Investigation, Criminal Forensics Department and radiologists at the Centre for Energy Research in the frame of a project supported by the Home Affairs Security Fund.

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Keywords: radioactive, radiological crime scene, radiation hazard, radiological evidence, radiologically contaminated traditional evidence

Introduction

Radioactive materials have become an explicit target for criminal and terrorist organizations in recent years, as they can be used in various type of weapons (such as radiological dispersal devices) resulting effective panic and serious economic damage. In addition, they can be also used in other criminal cases, such as poisoning and radiation exposure of potential target persons or groups. One of the most famous criminal events is the so-called 'Litvinenko case' (Owen, 2016, 1-328.), in which a Russian intelligence officer was poisoned with polonium in 2006. Illicit trafficking and smuggling of nuclear and other radioactive materials is a real existing problem worldwide. The International Atomic Energy Agency (IAEA) collects in a database (Incident and Trafficking Database, ITDB) unusual events and incidents related to radiological materials (such as theft, loss, misuse of radioactive material, etc.) from around the world (URL1). Nearly 3.600 cases have occurred in the last 30 years following ITDB data only from officially reported events (Fig. 1.).

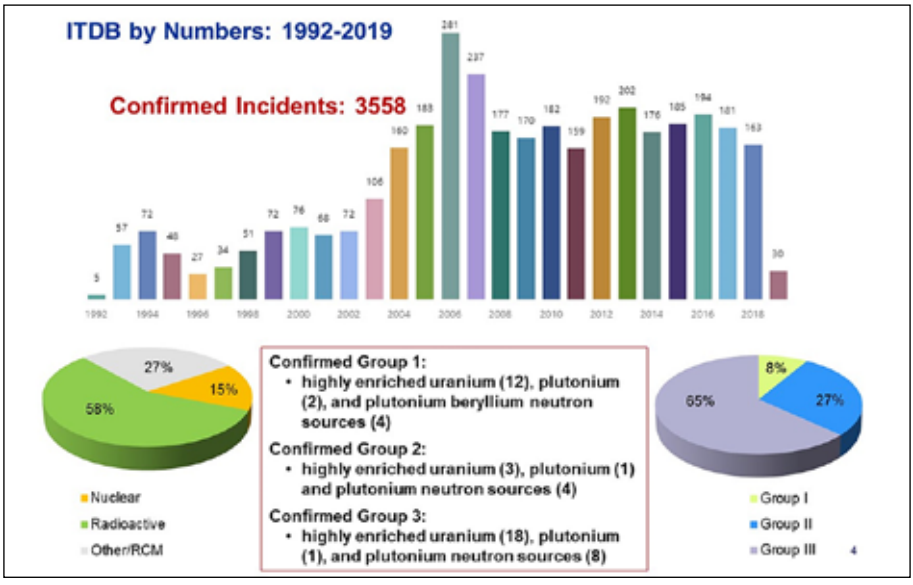

Fig. 1: Incident number connected to radioactive materials at the ITDB database of the IAEA (URL1)

The severity of the problem is also shown by the fact that major international organizations such as the IAEA, the Nuclear Forensics International Technical Working Group (ITWG) or the Global Initiative to Combat Nuclear Terrorism (GICNT) place great emphasis on this area in major international forums such as Nuclear Security Summits (URL2). They seek to raise awareness of the threat and consequences of nuclear terrorism because increasing terrorism results in growing chance to have different nuclear security events like a radiological terror attack or other possibilities for different type of radiological crime scenes. Discovery of these materials at a scene can be challenging. Radioactivity is hardly detectable in the absence of appropriate measuring instruments. Although certain signs may indicate the presence of radioactive material, such as radiation symbol (i.e. trefoil), lead containers, manipulators, radiation measuring equipment, dosimeters, glove bags, etc. if they can be found. Besides, the precise identification, collection, professional transport, handling and examination of these materials, especially nuclear materials, requires special expertise and procedures. Particular attention needs to be paid to the fact, that radioactive material may not be presented at a scene in a well-separated, closed or packaged form, like in a plastic bag or container, but may also be as a contamination on various surfaces such as floor, tables or clothing. It also means that the radioactive material can contaminate the crime scene personnel and the conventional evidence like fingerprints, DNA or material residues. Therefore, investigation of such a crime scene requires very special preparedness, rules, and procedures. An important issue is the personal safety (radiation protection) of crime scene personnel and the special security and safety rules for collection, transport and subsequent investigation of radiological materials and radioactively contaminated conventional forensic evidences. In most countries, two methods are generally used to process radiological crime scenes (i.e. Radiological Crime Scene Management, RCSM). More common is that the localization and collection of radioactive materials are carried out by police officers (crime scene investigators), because a civilian - even a radiation expert – must not enter the scene. The onsite work is assisted by a radiation protection expert, but he/she can give advice to the team only from outside of the hazard control area. The currently available general guideline written together by the IAEA and Interpol (IAEA, 2014, 1-93.) is also based on this approach and proposes appropriate action accordingly. The other possibility is that the radioactive material is considered to be merely a potential source of hazard, therefore a radiation expert or team of experts will first remove it from the scene and then begins to investigate the crime scene traditionally. The first case is questionable, because crime scene personnel is not always trained to measure and collect

radioactive materials properly. They often have no experience and practice in doing it. Besides, in some cases the situation can be so complicated that only an experienced scientific expert can evaluate the information correctly onsite. Lack of expertise can become a source of danger and failures.

The second case is absolutely justified from the safety and health point of view but can cause problems in the prosecution process. Following this second method, the scene is basically changed before it is recorded, and the radiation expert can erase evidences that could otherwise have been preserved. Furthermore, radioactive materials can also be evidences or potentially even the main evidence in a criminal case, therefore it is necessary to ensure chain-of-custody and handling them as evidence for forensics examination. Possibilities depend on the type of situation. In some cases, if e.g. the level of radiation significantly exceeds the background level, then the primary aim is the protection of human life. However, if the situation allows and does not pose an increased health risk, the protection of the crime scene personnel and the professional collection of radioactive materials can be carried out simultaneously. Nowadays, nuclear and other radioactive materials are being detected at more and more places in Hungary during home searches and in other different criminal cases. Therefore, Hungary has placed more emphasis on developing procedures for radiological crime scene management. In the last 2 years, in a project supported by the Home Affairs Security Fund conventional and nuclear forensic experts have developed a procedure to handle a crime scene which contains or is contaminated with nuclear or other radioactive material. The main goal was to develop a harmonized procedure with the cooperation of crime scene investigators of the Hungarian Police and radiation experts of the Centre for Energy Research. The work was focusing on some key points like how to work together at a radiological crime scene, how to establish the safety of the crime scene personnel and in between how to preserve the scene and the evidence during collecting radiological materials and ensure nuclear forensics (IAEA, 2015, 1-62.) already at the scene. The aim of the project was to develop a procedure where each actor performs his or her own task in which he or she has practice and experience, in such a way that serves best the purposes of safety and the criminal investigation. The procedure based on the fact that the Hungarian laws allow special experts to be involved in onsite work if necessary. In addition, our activity is based on Government Decree 490/2015 (XII.30.) On '*notifications and measures related to lost, found and seized nuclear and other radioactive materials, as well as measures following other notifications related to nuclear and other radioactive materials*', which also requires an on-site inspection with the participation of the Centre for Energy Research for found and seized nuclear material (URL3).

The integration of the procedure developed into the national strategy will be due in connection with the forthcoming National Nuclear Security Response Plan when it enters into force. The Response Plan is under construction by leading of the Hungarian Atomic Energy Authority in cooperation with all the relevant stakeholders connected to response nuclear security events in Hungary. Until the final version of the Response Plan, the procedure is based on the regulation allowing the involvement of experts in special cases during crime scene investigation (100/2018. (VI. 8.) Government Decree, URL4).

Special characteristics of radiological crime scenes

The presence of radioactivity at a crime scene changes completely most conventional crime scene investigation procedures, because it justifies/requires the introduction of special rules (e.g. use of special personal protective equipment (PPE) and the involvement of a radiological assessor or radiation protection expert. This can basically affect commonly used crime scene investigation procedures. Three basic parameters need to be considered, which are related to radiation protection rules and clearly change the course of the site: '*time, distance and shielding*' (IAEA, 2014, 1-93.). It means, crime scene personnel should minimize the time spent onsite and near to radioactive objects. During the investigation, the crime scene personnel should stay away from contaminated objects as far as possible. These actions may require the use of tools, like manipulators, spacers, or even robots. At higher radiation levels, onsite workers must protect themselves from radiation using so-called shielding, like lead vest or lead walls. Furthermore, there are more differences at a radiological scene:

- Any work in radiation field and contaminated areas needs the use of special personal protective equipment (PPE) like chemical resistant, closed coverall, double or triple layer of gloves, respirator, electronic personal dosimeter, etc. Moving and manipulating in PPE is uncomfortable, making movement, vision, hearing, and communication very difficult.
- Hazard control area should be established and marked out considering doses and weather conditions, like wind direction (IAEA, 2014, 1-93.).
- Scene control should follow even stricter rules, like log the personal doses absorbed by crime scene personnel during the onsite work.

In general, during the initial site survey radiological hotspots should be identified and marked. Removing the radioactive objects from the site has absolute

priority in order to reduce the risk (IAEA, 2014, 1-93.). Removing hotspots changes the original scene, therefore, the importance of pre-recording of the scene (photographing, filming) is even more emphasized. In addition, the radiation level measured onsite determines the time crime scene personnel can spend inside and can modify the structured search strategies. It is important to be aware that radioactive material may be present at any scene, e.g. in an old device, removed from a disassembled improperly destroyed device. As already mentioned, radioactive radiation cannot be detected by normal sensory organs, only by using special devices, radiation detectors. Therefore, it is important to know what kind of signs can be expected at a radiological scene that can reveal the presence of radiation if a measuring device is not available. Really dangerous radiation sources with high radioactivity are in most cases of very small size (1-2 cm), but the protection built around them (radiation shielding) is mostly extensive. This is why radiation shielding devices (enclosures, special protection) are easier to detect. These are mostly special containers made of very heavy metals (e.g. lead). Discovery of such objects at a scene warns of the presence of possible radioactivity.

Some possible signs can show the presence of radiation at a crime scene (Fig. 2):

- radiation symbol (trefoil)
- manipulators, spacers, tweezers
- many rubber gloves, glove bags, coveralls, lab coats, masks
- scattered white crystalline material, including chemical devices, metal cans, rubber gloves
- presence of radiation measuring devices
- typical instruments and equipment containing radioactive materials: e.g. irradiation equipment, smoke detectors, containers
- typical documents: quality certificates, delivery note, official certificate, codes describing nuclear material, transport document, markings on the packaging of the boxes
- Unexplained, spotted burns to persons, animals connected to the scene.

Fig. 2: Some objects at a crime scene which can indicate the presence of radioactivity (1. glove box; 2. tweezers; 3. gloves, masks; 4. radiation detectors; 5. manipulators; 6. radiation symbol and special shipping containers)

Method developed

The Hungarian RCSM procedure is based mainly on the international guideline (IAEA, 2014, 1-93.) but it differs slightly due to adapting it to national specialities. There are some unique characteristics in the Hungarian procedure which are based on what the Hungarian legal system allows. In our procedure, in a unique way, police officers and radiation experts work together at the crime scene. Helping each other, all actors can perform his or her own tasks in which he or she has practice and experience. For this purpose, crime scene investigator team members are in our case:

Onsite team (inside the hazard control area, Fig. 3.):

- Searcher (primary evidence collector): a person who detects radiation, localizes and collects radioactive materials (radiation expert, i.e. an expert who is able to recognize, detect and professionally handle radiological materials)

- Documenter (assistant evidence collector): a person responsible for onsite documentation and assisting in the collection of materials and packaging (police officer)
- Photographer (police officer)
- Onsite team leader: a scientific expert (radiation expert) whose primary task is to coordinate the onsite work of the team from the point of view of radiation (warns of emergencies, monitors instrumental detection and collection, warns of places that have not been inspected, maintains continuous communication with radiation protection experts and crime scene manager, helps to determine the order of collection of material and preserve evidence)

Offsite team (in the secured area):

- Scene entry person (radiation protection expert): a person in a 'clean station' at the entrance of the hazard control area, assists the team's work by providing clean equipment, changing gloves, measuring the contamination on the PPE of personnel leaving the area, receiving the collected evidence, continuously communicating with the evidence custodians and decontamination unit
- Evidence Custodians: take evidences, place them into official evidence collection bag with labelling, measure and record doses, ensure chain-of-custody (police officer), as well as perform gamma spectrometric analysis to categorize the material onsite for nuclear forensics purposes (gamma spectrometry expert)
- Crime Scene Manager: continuously communicates on-line (through head cameras and radio communication) with the onsite crime scene team.
- Backup team: to change crime scene personnel after working time have elapsed, calculated by the radiation protection expert.

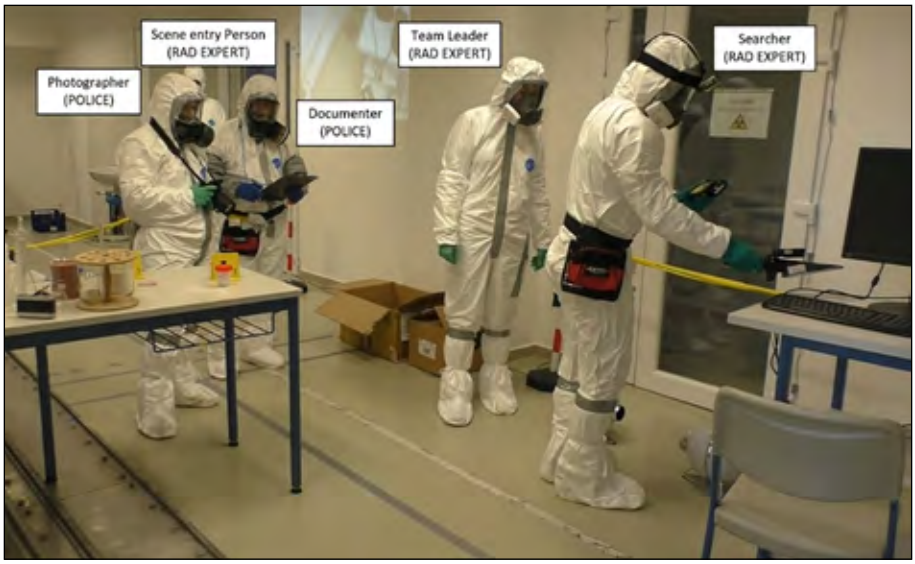

Fig. 3: Onsite team at the crime scene (hazard control area)

Elements of the radiological crime scene management can be seen in Fig. 4.

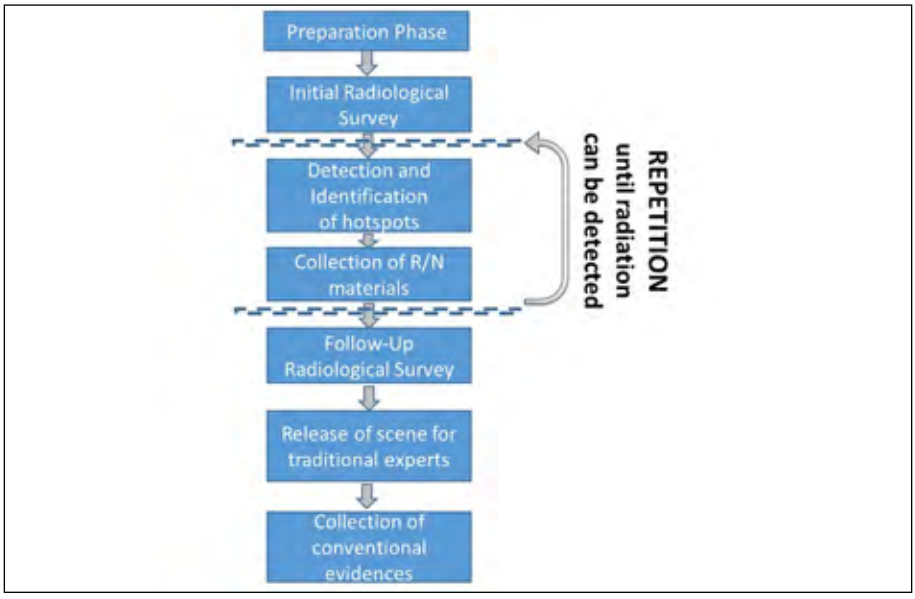

Fig. 4: Elements of the Radiological Crime Scene Management

Preparation phase includes the establishment of perimeters, first radiation survey, instrument calibration and determination of background radiation level. Besides, the establishment of clean areas, exit and entry corridors, covering corridors with plastic foil (outside the crime scene area) to avoid possible contamination of equipment and personnel by radionuclides after leaving the scene. Determination of level of hazard, type of PPE and time which can be spent at the scene inside. Besides, establishment of decontamination and evidence custodian station. A very important part is the zone control: dose logging absorbed by the personnel working inside the hazard control area. Further key elements are the briefing and detailed planning. All team members need to be aware of their own tasks very clearly. Without detailed planning and knowing clear tasks unexpected situations can cause failures and accidents during the radiological crime scene investigation. During the initial radiation survey, level of radiation is measured at the scene using telescopic dose meter (remote measurement). In addition, a camera can be attached to the telescopic system to pre-map/record the scene for detailed planning of the procedure. After evaluating the situation, determination of PPE and worktime and detailed planning of investigation the next step is the first entry to the scene. The radiation expert (searcher) enters first and checks surface contamination and possible hazards. Searcher is closely followed by a police officer who is responsible for recording the scene as first essential step. It can be carried out by taking photos and video recording, as well as using 3D laser imaging system. In the latter case, a special attention must be paid to possible contamination of the instrument. Use of drones is generally not recommended because the airflow can disperse radioactive contamination at the scene causing air contamination.

Highly suggested to follow a track in one direction by the team on a contamination-free area if possible. In the case of large-scale surface contamination use of anti-contamination stepping plates can be required at the scene (Fig. 5).

During the detection of hotspots (radiation search), radioactive materials are localized and identified by special instruments. Radioactive materials as evidences should be indicated by special evidence marking plates (with radiation symbol, see in Fig. 6). Material should be handled like conventional evidences (taking photos with marking plate and number, metric scale, instrument screen with dose and identified isotope, etc.).

Next step is the collection of radiological materials. The location of all radioactive material found, their dose and the identified isotope should be marked on the sketch of scene map. The team leader (radiation expert) in continuous

Fig. 5: Pathway during surface contamination mapping and dose measurement

Fig. 6: Detection and marking of radioactive material

communication with the crime scene manager will decide on the order of collection, taking into account the situation (level of measured doses, location of materials, contamination and prevention of conventional evidences). Materials are collected with the assistance of two people: the primary evidence collector and the assistant evidence collector. Using long tweezers or manipulators, the material is placed by the radiation expert in a bag with a pre-opened and unwrapped mouth, which is kept by the assistant evidence collector (Fig. 7). Thereafter, the assistant person seals the bag, being careful not to touch its inner surface. Then he/she places the bag in a second, clean plastic bag together with the filled evidence label which contains information on dose, isotope, location of material and the trefoil symbol. Second bag is also sealed and handed out to the scene entry person who checks the surface contamination on the bag using swipe material analysing it by surface contamination monitoring device. If the bag is clean, it will be placed in the official evidence collection bag sealed, labelled to ensure chain-of-custody (Fig. 8) and transferred to dose measurements, as well as gamma-spectrometric analysis. Finally, it will be located in the interim secured storage container. If the bag surface is contaminated with radionuclides, it should be placed in a third, clean bag, seal, and check surface contamination again. Contamination on the second bag surface should be indicated in the label.

It is very important to change the top layer of gloves between collection of each radioactive material to avoid radionuclide cross-contamination of samples collected (contamination means here: '*radionuclides on surfaces or within solids, liquids or gases (including the human body), where their presence is unintended or undesirable*' (IAEA, 2014, 1-93.).

It is also necessary to take a sample of the surface contamination at the scene as evidence for further examination. It can be done by swiping, swabbing, or using a spatula or pipettes depending on the form and phase of the material. In the case of solid samples, it is highly suggested to use wet swab instead of dry wipe material to avoid contamination of crime scene personnel and air contamination. During collection of contaminating material from surfaces, conventional evidences (like fingerprints) must be taken into account due to the fact that they can be easily destroyed during this operation. Before swiping for sampling or decontamination of contaminated surfaces, it can be suggested to use forensics lights to check the surface for latent prints or DNA. Collection and in-field or laboratory-based examination of these radiologically contaminated evidences in simpler cases can be carried out i.e. they can be preserved and used for the investigation. Contaminated surfaces at the scene should be marked as they

Fig. 7: Packaging of radiological evidence

Fig. 8: Ensuring chain-of-custody (right)

Fig. 9: Special procedures for undressing of PPE (1. radionuclide contamination control on the surface, 2. opening of the safety coverall, 3. removing of the coverall by another person who touches only the inner surface of it, 4. careful removing of gloves, 5. step out to the clean area, 6. careful removing of the respirator using plastic bag)

could be a potential source of hazard. Following the collection and elimination of all radioactive material, crime scene manager will decide whether these surfaces can be decontaminated or treated another way during the conventional crime scene investigation (e.g. taping with plastic foil and covering with lead plates). Another special rule is that any closed boxes, containers, or packages with radiation symbol or just showing radiation found at the scene must not be opened there. They should be transported to the nuclear forensics laboratory and opened there under safe conditions for further examination. Preliminary X-Ray analysis is also often required before opening. The final step is the follow-up radiation survey, leaving and release the scene for conventional crime scene investigation. After collection of all radioactive hotspots, radiation expert should check the scene once again for any presence of radiation. All locations of hotspots should be checked again with the isotope identifier and surface contamination monitor. If only background radiation level can be measured and no contaminated area available, the scene can be released for conventional crime scene investigation. Since radioactive materials are also handled as evidence, the numbering of conventional evidences is continuous.

During leaving the scene, crime scene personnel, PPE and all equipment used inside should be checked for any surface contamination. Removing of PPE should follow special rules to avoid any contamination of crime scene personnel causing any radiation hazard, like incorporation (Fig. 9).

The final important point that should be mentioned is the nuclear forensics which always starts at the scene with the first in-field identification and categorization of radioactive materials. It is a key activity of further operations like safe interim storage at the scene and special transport of radioactive materials, as well as informing the nuclear forensic laboratory. To know the type and amount of radioactive material is essential for the laboratory for proper preparation of receiving and examination of radiological evidences. It can have essential importance in such urgent cases like a dirty bomb explosion or prevention of a second event.

Conclusions

In this article, the Hungarian operating procedure for radiological crime scene management was presented which is based on international trends, guidelines (IAEA, 2014, 1-93.) and adapted to the Hungarian legal system and experiences. The procedure has been developed in collaboration with the staff of the Criminal Forensics Department of the Hungarian Police and the Nuclear Forensics Laboratory of the Centre for Energy Research in Hungary. The main goal was to establish a harmonized common procedure in which each actor (conventional and nuclear forensic experts) performs his or her own task in which he or she has practice and experience, all in such a way that best serves safety and the purposes of the criminal investigation. There are some unique characteristics in the Hungarian RCSM procedure like in our case police officers and radiation/nuclear forensic experts work together at the crime scene. Besides, our onsite team leader is a scientist, a radiation expert who helps the teamwork personally inside according to the radiological aspects in continuous communication with the crime scene manager. We put great emphasis on detailed contamination control (surfaces, PPE, personnel, evidences, etc.) and therefore, e.g. on special rules for packaging and undressing procedure because we find radioactive contamination as the highest source of hazard. Even only some radioactive particles can cause problem if they can get into the human body. By our experiences, to avoid particle contamination needs to follow very special and accurate contamination control. For this reason, we decided that the clean area for preliminary storing of collected evidences and clean tools should be estab-

Fig. 10: Presentation of the Hungarian Radiological Crime Scene Management Procedure in Vienna, at the headquarters of the International Atomic Energy Agency (ICONS, February 2020)

lished outside the border of the hazard control area and never inside (except the scene is very large). In our procedure a radiation protection expert helps the teamwork from the clean area by giving in/taking out devices and assisting in glove changing, as well as contamination control. The operating procedure was tested and practiced during field exercises of different type of scenarios. The aim was to establish a harmonized and practiced procedure that can be used successfully and safely in a variety of complex real-life situations. The procedure was presented in February 2020 at the request of the International Atomic Energy Agency, at its headquarters in Vienna, as a side event in the frame of the International Conference on Nuclear Security (ICONS, 2020), see in Fig. 10. Further developments on this procedure involving international observers and more partner authorities in Hungary is in progress. In addition, implementation of various research programs, e.g. in-field and laboratory-based analysis of radioactively contaminated conventional forensic evidences (such as fingerprints, DNA and material residues) has been started in cooperation with the Hungarian Police and the Centre for Energy Research.

Acknowledgement

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Online links in this article

URL1: *International Atomic Energy Agency*. https://www.iaea.org/resources/databases/itdb

URL2: *Nuclear Security Summit*. http://www.nss2016.org/2016-joint-statements

URL3: *Government Decree 490/2015 (XII.30.) On 'notifications and measures related to lost, found and seized nuclear and other radioactive materials, as well as measures following other notifications related to nuclear and other radioactive materials*', 4.§ (3); 6§ (3); 9.§ (1) and (3). https://net.jogtar.hu/jogszabaly?docid=a1500490.kor

URL4: *Government Decree 100/2018. (VI. 8.) On 'on the detailed rules for the investigation and the preparatory procedure'.* 63.§ (2). https://net.jogtar.hu/jogszabaly?docid=A1800100.KOR

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Bence Lakatos – Gyula Vass – László Teknős

Official Analysis of the Great Debrecen Fires of 1802 and 1811

Abstract
Today's appearance of the city of Debrecen was greatly influenced by the fires of its history. Of these, the two most devastating should be highlighted, the fires of 1802 and of 1811. In connection with fire we intend to summarize the amount of damage by processing contemporary sources. After the fires more serious regulations on fire prevention began to emerge These disasters made people aware of the importance of fire protection. In connection with the 18th century town, we try to compare the fire protection regulations of the 18th century with the present one, and to make a comparison with the possibility of today's fire formation by examining the cause of the fires.

Keywords: fire, fire policing disaster, disaster management authority, fire protection, prevention

Introduction

The name of the city *'Debreczen'* is of Slavic origin, according to the historians of the city, the ancestors of this area were the Getaes and the *'lizard-eyed'* Sarmatians long before the arrival of the Hungarians. Debrecen has played an outstanding role in all ages due to its geographical location, as it has been a hub for trade routes from the North, East and South. There is no other city in Hungary like Debrecen in the history which has been destroyed by so many catastrophes caused by fire. The written record of the oldest fire in the city dates back to 1245, in which the complete destruction of the Great Church happened, too.
'*From our cities, Debrecen and Gyöngyös were so often destroyed by the 'red rooster' that they still stick in the memory of today's people as the most typical examples of cities that have been burnt down. In the coat of arms of Debrecen, the phoenix symbolizes that the city was always rebuilt from its ashes […].'*

(Arany, Krisó & Rácz-Székely, 1985, 8.) In the course of our research, we examined the causes of the fires of 1802 and 1811, as well as on the parallels with today's fire prevention authority regulations. Our research methods are a collection and analysis of library and archival materials, with a particular focus on contemporary materials, as well as the city council documents. Unfortunately, the longer a damage occurred, the less likely it is that written memories that can be used and authentically present the event have survived. While processing the topic, I came to the conclusion that places that preserving written memories, such as libraries, schools, and city buildings, have in many cases been prey to fires.

The Fire of 1802 and 1811 as A Disaster

In addition to the fires of 1802 and 1811, there were also significant devastating fires in Debrecen in 1561, 1565, 1568, 1580, 1623, 1639, 1640, 1656, 1669, 1681, 1688, 1693, 1699, 1701, 1704, 1705, 1711, 1714, 1719, 1791 and in 1797. Several of these fires reached the current definition of disaster risk, and beyond that the disaster itself happened, as these events became identifiable with the factual elements of the concept, as, among other things, people's lives, health, material values, basic care of the population. They endangered the environment and the organizations of the time were no longer able to take on the effective fight against these devastating effects in a coordinated manner. The causes of fires can be found in, among other things, contemporary construction habits, the lack of central regulation of prevention, and human negligence and intentionality Andreas Pinxner, a German traveller, also remembered the contemporary conditions following his stay in Debrecen in 1693, recording his experiences he wrote *'He states…, the houses are usually low, built of loam, thatched, and the street in front of them is such as he good God created it: no sign of paving. It is horrible to think that if a fire broke out in a city like this during a windstorm, what a desperate devastation could befall the city.'* (Trócsányi, 1937, 138.) The lack of building habits and proper official control was also compounded by the fact that there were not using in those times matches or other devices suitable to produce a safe and controlled fire, so the fire was produced only with great effort with a so-called steel dowel. To eliminate the difficulty of this process, the fires were kept under constant surveillance in the fireplaces. It was a common practice to *'borrow'* fires from each other, which was transferred from one place to another with a shovel, in which case there was also a high chance that a spark would cause an uncontrolled fire. The most endangered place was the eaves of thatched houses, as if the roof caught on fire, the whole rows of houses, streets

and parts of the city burned down in a short time. *'The fire was so common – as we can see from the reports of newspapers published at the beginning of the last century, that perhaps it happened every day.'* (Trócsányi, 1937, 139.) Continuous learning from the fires led to a series of regulations on, among other things, smoking, the use of candles, the storage of cob stacks, and certain rules for the pursuit in crafts. Unfortunately, the arsonists were sentenced to death in vain, the dangers were brought to the attention of the population, and fines and other punitive sentences were envisaged (Zoltai, 1903, 83.). Due to the geographical conditions, in the Great Plain there were often significant windstorms, as were several times dry, droughty days, all of which made it difficult to protect against fires. In today's sense, fire-fighting technical devices, equipment and personal protective equipment can also be considered rudimentary and it was difficult to intervene effectively with them during a damage event. In addition to the environmental impact and the negative impact of technical devices and equipment, the construction habits typical for these ages, as well as the lack of safe building regulations against fire, mostly contributed the most to the occurrence of such fires/disasters. The contemporary cityscape shows that the number of brick houses was very little, but their roof structure was usually covered with wooden shingles. On the other hand, most of the houses had *'patics'* walls (mud-framed wooden frame structure) and hut-like, thatched roofs. The size of the parcels was characterized by their narrow and elongated design. These were usually built together and crowded with residential houses and other backyard buildings. In most cases, the fences were made out of wood and twig, so they could not form an obstacle to the wind (Zoltán, 1937, 296.). The architectural customs of the city did not change significantly over the centuries until the fires of the early 19th century. An arson took place in Debrecen on the 11th of June in 1802, which caused the biggest fire in the history of the city, in which '*one thousand five hundred houses, fifteen mills and the tower building of the ancient dormitory also burned down.'* (Arany, Krisó & Rácz-Székely, 1985, 8.) The fire also touched György Bessenyei, a contemporary poet who wrote his poem Debretzennek siralma poémában, in which he remembered of the fire that struck the city of Debrecen. He wrote about the wind, that caught up the fire and the chaotic conditions being present on the streets, as well as the despair of the people who had to experience the fire itself in person. The spread of the fire was also facilitated by the combined effect of environmental phenomena, which means that it was a dry and windy summer day, so on that very day at quarter to one at Kis-Csapó Street, around Morgó Street a fire broke out at the pigsty of a palinka-selling old widow (Kabai, 1821, 20.). The surviving written memoirs are contradictory to the identity of the owner, according to some sources the own-

er was a widow Mihályné, but according to others, it was István Dinnyés. The end of the pigsty led to a narrow ditch, which according to contemporary writings is considered to be the starting place of the fire. Learning from previous fires all the time, they were confident by the appropriate regulations and tools to put out the firefighting through continuous regulations, more or less. Unfortunately, based on the negative coexistence of circumstances and the principle of domino effect, the occurrence of disaster has become inevitable. The perfect presence of all the conditions necessary for burning was given in the high wing, thus spreading from houses next to Csapó and Péterfia Street, destroying Darabos Street, then through Kis-Hatvan Street the most of Miklós Street, as well as the area between Tizenháromváros Street, Piac Street and both Great- and Small Churches along with the wooden bridge and café, taps and the external tents in the fairgrounds on Német Street. As a result of the fire, the church also suffered significant damage, as it was destroyed from the Great Church tower, and the adjacent tower, the Red Tower, was also destroyed. Nothing shows the destructive heat effect of the fire better than the bell donated from György Rákóczi I. in the tower, which melted and fell in the fire.

Figure 1: The devastation of the fire of 1802
(map drawings of the fire commander Jenő Roncsik / 1922–1945 /)

The devastation of the fire left poverty and famine, misery, scanty houses and hundreds of homeless people. The supply of the population also became insecure, many people were left with no usable objects, the fire destroyed everything.

'*Not only nearby towns, but even the most remote cities, such as Bratislava, sent alms to help those affected by the fire. Donations were also collected quite a bit, but the reconstruction was difficult […]'* (Trócsányi, 1937, 144.)

The city's fire record includes:

Streets:	Properties:	Damages in Forint:	Dam. in korona:
Hatvan	262	188,594	27
Péterfia	147	143,665	30
Csapó	31	25,814	51
Piacz	303	176,907	54
Damage of the Reformed Church	-	150,000	-
Damage of the Collegium	-	26,412	35
Total:	**713**	**711,395 Forints**	**17 Korona**

Table 1: Damage caused by the fire of 1802 (created by Bence R. Lakatos)

But in addition to the above damages, the amount of each loss in *'goods'* can be estimated at nearly 1.500.000 Forints. All the buildings of the church were destroyed or significantly damaged by the fire. In addition to the damage to the buildings, there was a significant intellectual loss to posterity, as a significant portion of the library and the books there were destroyed. In the fire, the wheat stored in the granary also became a prey to the fire. The consequence of food shortages was famine, for which they also had to find a solution (Gulyás, 1935, 18.). The disaster caused significant material damage to the city, but claimed only one human casualty based on the surviving materials. Unfortunately, the cause of the arson did not fall into the hands of the authorities. Residents of the city, re-learning from the fire, began to rebuild the city. After the catastrophe, the city was again threatened by fire in 1811, according to some sources in a small inn on the 12th of April at noon, while according to most, a fire broke out in the pigsty next to the street of the belt-making master Mihály Vári living at the Czegléd Street gate. It was not established in this case whether the fire was caused by human negligence or wilful arson. As a result of the fire, a significant part of Czegléd Street and Piac Street, the whole of Varga Street was destroyed, several inns, the Roman Catholic Church, the theatre, the Franciscan monastery, Miklós Street and 25 other mills were burnt down. The intensity and strength of the fire

is shown by the fact that in a '*total'* of 4 hours it managed to destroy a significant part of the city. Compared to the fire of 1802, this was an event with significantly more casualties, 21 people (old, young, children), most of the casualties were in houses close to the source of the fire. As a result of the intense wind, people in the houses no longer had the opportunity to escape, or during the escape themselves they suffered such severe burns or inhalation heat damage that it was no longer possible to help them, so they lost their lives. In addition to the considerable fatalities, the number of those who suffered some degree of burns as a result of the fire, or according to the writings, was greatly reduced by the effects of heat, and many became blind. Following the fire, an assessment of the damage and the care of the homeless began, i.e. the provision of the necessary conditions for the survival of the population, when a fire broke out again at the end of the street in Hatvan Street on the 8th of April at 1 p.m., which spread rapidly and on Hatvan, Mester and Darabos Streets, among others, and in addition to Péterfia Street, another 25 mills were destroyed again (Zsoldos, 1917, 296.). The problem was also caused by the fact that in a very short time – 11 years – a considerable part of the city was destroyed three times by fire, which caused more and more significant damage to the people living there and to the city management. Following the events, a smaller fire broke out on the 15th of April, where *'only'* 3 houses burned down. In 1811, as a result of fires over the course of two weeks, residents who lost their houses and property were forced to sleep in the open air, had nowhere to go. After assessing the damage of these two weeks *'1497 residential houses, 540 chambers, 1224 barns and stables, 493 scenes and 50 dry mills, so more than half of the city. The total damage was 4,472,406 Forints, the fire was much larger than in 1802.'*(Roncsik, 1925, 20.)

The Contemporary Fire Protection Regulation of the City

The first fire preventive fire intervention measure of the city of Debrecen was taken in 1556, according to which a person who went to the barn with a candle without a lantern or fired i.e. used a rifle on an open street was punished. Preventive fire protection underwent continuous development. The association of firefighting students, which was one of the oldest organizations in the city, played a significant role in the performance of the city's fire protection and firefighting tasks, as they have been providing fire protection for our city for more than two hundred years. In addition to and in front of the students, there was a significant task for the guilds operating in our city. The life and activities of the student firefighters in Debrecen were regulated by the individual dormito-

ry laws; accordingly, since 1664, it has been prescribed that they take an active part in the early detection of fires in the city and in their subsequent extinguishing of fires (Roncsik, 1934, 18.). The city leadership has determined to *'get 50 leather buckets and multiply the number of water rifles per hundred at the expense of the city first'*. (Tarján, 1964, 17.) Following the constantly evolving rules and regulations, the regulations for machinists such as water syringe operators and those assigned to the machineries and early detection of fire were most precisely issued in the protocol containing the detailed regulations of the *'Acta Curatoratus et Professoratus'* on 25 November 1798. When it was created, the teaching staff asked for a preliminary opinion from the students, and then this set of rules was created taking these into account (Nagy, 1957, 33.).

Figure 2: The devastation of the fire of 1811
(map drawings of the fire commander Jenő Roncsik /1922–1945/)

The organization of the Student Fire Brigade had a complex system of subordination and division of tasks compared to the expectations of the age. The enthusiasm, courage and professionalism of the students is also shown by the fact that during its existence it was able to curb many fires and prevent them from escalating into catastrophes caused by fire. Unfortunately, it was the student body that was one of the weak points of this fire brigade organization, as the students spent their time in the school system in connection with their firefighting duties and, with few exceptions, barely stayed in the dormitory building, so they could not

protect the city. Unfortunately, the fire on the 11th of July in 1802, also fell into the Whitsun period, when students were not in the dormitory building, so the Great Church, along with the Dorm and its associated machineries as a fire station, were able to burn down a significant part of the city. In the aftermath of constant fires, a series of provisions were made to try to prevent these incidents, such as the rule in 1556 that at least one bowl of water should be stored in front of each house, or, for example, that night baking was prohibited from 1629, along with cooking, washing and also firing in smaller shops. City leaders soon realized the activities of guilds pursuing open-flame crafts as a source of danger. According to the remaining written records, the fire policing regulations of Debrecen in the 17th and 18th centuries were characterized by empirical regulation and the subsequent nature of fire policing regulations, so the regulations were always preceded by some major fire. In the 18th century, as a result of many fires, the development of regulations based not only on customary law but also on written legal norms became topical, thus ensuring the development of an adequate level of fire protection. By the end of the century, the fire protection patron issued by King Joseph II of Hungary in 1788 was the first to summarize the fire protection tasks at the legal level. This patent was the first to include provisions for three areas of fire protection in the modern sense, fire prevention, firefighting, and fire inspection. Among the royal commissioner's documents of the Hajdú-Bihar County Archives are the provisions of the Free and Royal City of Debreczen on Fire Orders established by the Governing Council in 1799. Among its most important provisions are the reduction of wooden structures and wooden chimneys in addition to the construction of brick-built houses, but unfortunately the construction of bricks was not suggested in a coercive way, but with the words *'whose talent allows'*. There are also regulations for cleaning contemporary stoves, chimneys, and for handling and using fuels and equipment. The *'naked'* transportation of burning candles also entailed severe punishment in the age. Smoking, where and in what form it can be used safely, has also been regulated. Provisions referring to industrial safety include, for example, laying down requirements for dealers and producers of gunpowder, but its most interesting provision with regard to fire protection is *'also urge your maid to be diligent: cover the fire well in the kitchen so that the cat cannot take it in its fur'.* In addition to fire prevention rules, it also contains the most important requirements for firefighting tactics, such as ensuring the supply of extinguishing water, preventing fires by demolishing tiles, i.e. removing combustible material from the fire path. It also includes the responsibilities of those involved in firefighting. Although the provisions were forward-looking, the problem was that some provisions were not binding or, due to pre-existing architectural features and human habits, could not provide adequate

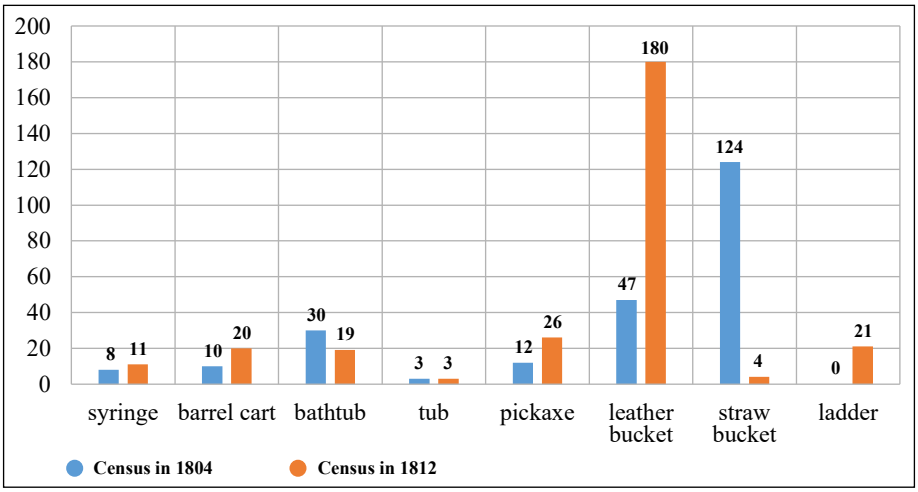
protection against them in the event of a disaster becoming catastrophic. There was no organization at the appropriate level assigned to the rules, which could check the continuous observance of the described rules with sufficient thoroughness and professional knowledge as its main task. From 1799 onwards, the descriptions of the fires and the descriptions of the measures taken were treated separately from the other provisions in the so-called Incendiarium Protocollum. Also in terms of the city's structure and architectural methods, in order to prevent fires, it would have been essential for the houses to be covered with brick or stone instead of wood, and for the roof structure to be covered with tiles instead of reeds or shingles. Unfortunately, this would have made construction much more expensive, as due to the geographical location of the city, the soil conditions in the city were not suitable for making good quality bricks, and in the absence of mountains, there was little stone and transportation would have meant significant increase of costs. Another reason that city dwellers have historically *'become accustomed to'* a lot of people turning up as commercial hubs and many times malicious arsonists have appeared in the city is why they did not want to embark on construction with higher safety but higher costs. Thus, the construction habits did not really change, which was accompanied by the holidays of the student firefighters and the negative impact of the natural elements, so that the devastation caused by the great fire of 1802 easily occurred on the basis of these. Following the damage described above, the city council considered it even more important to change construction habits, prioritizing the use of bricks and tiles. To make this happen, Mihály Péchy took land samples from different parts of the city in order to find out which part of the city would be more suitable for making bricks. The expert opinion arrived in 1803 and designated the brick-laying sites in the brick garden, from which point the *'rebuilding'* of houses and buildings in the city using bricks and tiles began. The Town Archives contain the provisions of Royal Commission No. 47 of 1804, which, when examined, show that they were determined by learning from the circumstances of the origin and spread of the fire, in which several forward-looking provisions are included, still applied today. The city council's protocol of 1808 regulated the basic rules for firewall construction, the rules for room connections, and also gave priority to the fire distances to be maintained between adjacent properties and buildings on one's own property (Szűcs, 1872, 32-37.). The council also regulated that the gates of the properties should be kept dry, free of gas and vegetation. Also in the case of various crafts, such as the construction of a blacksmith's, locksmith's or other workshop with fire, attention had to be paid to the appropriate fire distance, and the workshop must be built of non-combustible materials. By creating these rules, the cityscape of Debrecen was changing. The fires of 1811 also contributed to the development and enforcement of

safer building and fire prevention rules. In a letter to the city council dated 15 December, the city's royal commissioner, Farkas Ibrányi, stated the following: *'the main mistakes due to the fire are the non-execution of good orders, which the council has repeatedly urged but failed to enforce there is not a sufficient number of water rifles, although the council has already instructed the governor to procure them in 1799, the building code decree has not been implemented, everyone is building the way they want, covering the house with reeds and straw despite the ban, the dangerous weed buildings are still in the former state, the decrees are only on paper, so the council has not fulfilled its duty to the safety of the city residents and integrity.'* (Síró, 2007, 59-60.) Learning from the fires, the city management realized that the width of the streets also played a key role, as most of the streets in the city were very narrow during this period. After the constant fire, there was always an attempt to make the streets wider and to cover them with only minimal ground (Sápi, 1957, 90-94.). Smoking has also emerged as a typical problem of the age, the habit of which has become more and more widespread and has affected almost all ages of the population. In order to prevent fires, smoking was also banned and punished in some places, including shops and barber shops, as well as for certain individuals, such as soldiers.

Another problem was the lack of water, to which the city management also had to find a solution to, as the captain water prescribed for the houses meant nothing in a major fire, the city was often hit by drought and wind due to its location, so there was no water in the wells in summer, and unfortunately the city does not have a river either (Roncsik, 1926). The problem of adequate extinguishing water could not be appropriately remedied or some time, so it was necessary to provide adequate extinguishing technology, for this purpose in 1804 and 1812 a census was made of the public and private equipment of the city, which established that:

	Name of assets:	Census in 1804:	Census in 1812:
1.	syringe	8	11
2.	barrel cart	10	20
3.	bathtub	30	19
4.	tub	3	3
5.	pickaxe	12	26
6.	leather bucket	47	180
7.	straw bucket	124	4
8.	ladder	0	21

Table 2: Technical fire-fighting equipment available in 1804 and 1812, respectively (created by Bence R. Lakatos)



Graph 1: Private and public firefighting equipment (created by Bence R. Lakatos)

Following the two fires examined, more and more emphasis was placed on fire protection and the organizational regulation of the Fire Brigade by the city management. Thanks to continuous improvements, major catastrophic fires could no longer occur in the life of the city, as increasing safety has become a primary consideration for both the city administration and the population. The graph also shows that the applied firefighting technical equipment was continuously modernized, as the less efficient equipment was withdrawn, while the more efficient equipment was regularized and increased in number.

Fire Protection Authority Analysis of the Two Disasters

In this chapter, we are drawing a parallel with the reasoning between the regulation that developed after 1802 and the fire protection provisions in force today. Based on our research, it can be seen that experiential prevention is the forerunner of central fire protection, which began in the 19th century in the life of the city. The fires that have developed in the country, as many of them with the characteristics of today's catastrophe, have led to the emergence of more and more provisions not only in the city, but also on a national level, and the country's leaders needed to realize that the issue of fire protection needs to be regulated. The basic principles of fire protection have not changed in the past two hundred years, only the formulations have become more accurate and precise, as a result of which the full range of protection and safety has significantly

improved, thus, we are examining the relationship between the contemporary Royal Commission Decree No. 47 of 1804 and the Decree 54/2014 (XII. 5.) of the National Fire Protection Regulations, as amended on 22 January 2020, and other legal provisions related to fire protection, by way of the example below.

Comparison of Royal Commission Decree No. 47 of 1804 and current legislation:	
Royal Commission Decree No. 47 of 1804	**Decree 54/2014 (XII 5) of the Ministry of the Interior on the National Fire Protection Regulations** (hereinafter: NFPR.) (URL1)
'1. A deputation has been appointed to draw up fire and building regulations.	The enactment of the decree was also adopted and promulgated with the appropriate level of professional training and living conditions included in Law XXX of 2010 on Legislation.
2. Construction plans must be presented in advance.	Section 1 (1) (a) of the NFPR stipulates that fire protection requirements must be observed, inter alia, during the design and construction of the facility, structure or part of a building. In addition, provision must be made for the plans to be submitted to the building authority and, where appropriate, to the competent authority.
3. Only brick and tile-covered buildings should be constructed near larger and public buildings.	The regulations in force specify, inter alia, the requirements for the fire protection class and fire resistance performance of building structures, depending on the purpose.
4. Buildings from a neighbour should always be equipped with a brick firewall.	The NFPR defines the concept of basic fire protection structures, which can be a firewall, a fire barrier and a fire slab. Protection against the spread of fire can be provided according to law, for example by setting up a firewall. For the material of the firewall are the expected fire resistance performance and fire protection classes specified.
5. The master mason is responsible for making the firewalls for 5 years.	Section 40 (1) (a) - (c) of Law LXXVIII of 1997 on the Shaping and Protection of the Built Environment defines the responsibility of the contractor for the lawful commencement and continuation of the construction activity, the existence of the contractor's right, […] as a result of the work performed for the intended and safe use of the established structures, equipment, structures, parts of structures (URL2).
6. Stables, pig sheds cannot be built in a narrow yard.	Pursuant to the provisions of Government Decree 253/1997 (XII. 20.) on national settlement planning and construction requirements, the conditions for the placement of livestock structures - taking into account public health and animal health, as well as environmental protection requirements - may be established by the local building regulations. The nearly 200-year-old provision was intended to prevent build-in causing easier spread of fire (URL3).
7. Stables and pigsties must not be built against the wall of the neighbour.	The NFPR defines the concept of fire distance, so it means the minimum permitted horizontally measured distance between adjacent structures belonging to a separate fire section, adjacent outdoor storage units, an adjacent structure, and an outdoor storage unit. After all, Section 17 (1) a) -d) of the NFPR stipulates that the spread of fire must be prevented.
Provisions 8 and 9	It has no fire protection aspect.
10. The garden at the back of the property should not be installed.	In the current regulations of the NFPR, I would draw a parallel with the provision that in order to ensure the effectiveness of the fire brigade's intervention, unobstructed access to the structure by a firefighting vehicle must be ensured. Due to the tools and circumstances used in contemporary regulation, it was necessary to determine such installations in this way. The current rules for installation requirements should be in accordance with local building codes.

11. Hay and straw should only be stored in the attic of the barn, not in the attic of a residential building.	Section 191 of the NFPR stipulates that material belonging to a highly flammable or explosive class may not be stored in the attic. Other solids may only be placed in such a way and in such a quantity that they do not obstruct access to the roof structure and the chimney, can be removed from combustible elements of the roof structure if necessary and be at least 1 m away from the chimney. Furthermore, the building, part of the building, the open space may only be used in accordance with the fire protection requirements for its intended use.
12. Firewood should not be kept in the yard to a large extent.	No storage is allowed within the fire distance, unless the quantity, quality and location of the stored material do not increase the risk of fire spreading. This area should be kept free of debris and dry undergrowth. In addition, the building, part of the building, the open space may only be used in accordance with the fire protection requirements for its intended use. The legislation also sets out requirements for outdoor storage areas.
13. Fences or faces are not allowed to be made out of reed or picket.	The regulation was created for the purpose of protection against the spread of today's fire, which is: a set of solutions, the continuous application of which can prevent the spread of fire to the protected structure, part of the structure, outdoor storage unit; methods: fire distance, fire protection structure, built-in fire protection equipment, other design providing fire propagation limit or fire resistance performance. According to the contemporary perception, the goal was to be able to reduce significantly the use of these combustible materials.
14. The building must not be covered with straw or weed.	The purpose of the contemporary provision was also to prevent the spread of fire, the current NFPR on roofing stipulates that § 31 (1) - (2) stipulates that for roofing […] material of fire protection class E, or F may be used as a roof covering if the structure has no more than one floor level and it has been approved by the fire protection authority for the given structure […].
15. In tight spaces, reed gutters should not be built on the street.	The NFPR defines the concept of a barrier against the spread of fire, such as a barrier that prevents the spread of fire between the building levels, fire sections, roof fields, and adjacent buildings. The design and geometry of the barriers against the spread of fire must ensure the limitation of the spread of fire.
16. Narrow street houses with a full wall of 8 feet are permitted.	In addition to ensuring the fire distance, the NFPR can protect against the spread of fire with, among other things, a firewall design. In terms of focal length, a kind of contemporary vertical focal length was defined.
17. On a narrow street, the building opposite can lay at least 6 fathoms away.	The protection against the spread of fire shall be determined in accordance with Tables 1 to 3 of Annex 3 of the NFPR, in the case of a special structure, in accordance with Chapter XII or by calculation to ensure the fire distance.
18. The neighbour is obliged to report the ones who do not obey the rules.	Pursuant to Section 5 (1) of Law XXXI of 1996 on Fire Protection, Technical Rescue and Fire, whoever detects a fire or an imminent danger thereof, must immediately report it to the call centre, the operational management department of the disaster management directorate or the fire brigade, or if this is not possible, to the police or the ambulance service or the mayor's office of the municipality (URL4).
19. If a person's house is demolished in order to prevent the spread of fire, the council shall reimburse it.'	Section 8 (1) of Section 5 (1) of Law XXXI of 1996 on Fire Protection, Technical Rescue and Fire provides that, as regards compensation, the maintainer of the fire brigade is obliged by the fire brigade is liable damage caused by non-contractual liability. The maintainer must pay a compensation for non-recoverable damage to third parties caused by fire intervention technical rescue or fire intervention or technical rescue practices in connection with firefighting, technical rescue or technical rescue, with the exception of lost property benefits (URL4).

Table 3: Comparison of Royal Decree No. 47 of 1804 and current legislation (created by Bence R. Lakatos)

Based on the above provisions, we can see that our current rules can be paralleled with the legal provisions of the times presented but based on the research it can be clearly stated that due to social conditions and technical development, more precise, precise and complex legal regulations are always needed. In addition to the legal provisions, there was a need for an organization with an appropriate system of official tasks, tools, and measures to ensure effective and preventive central fire prevention. It was characteristic of the contemporary regulation of the city of Debrecen and the country that it did not yet have such an organization. For the contemporary duties, one person usually had several specializations and generally performed law enforcement duties in the course of their own work. At the time of the fires of 1802 and 1811, and in the case of the disasters that preceded them, there was no proper organization, no important licensing processes during construction, then no feedback during the use, no methods of inspections, no continuous monitoring, and not a control system with a frequency appropriate to their level of danger. Although the city administration of those time created certain sanctions and measures to comply with the fire protection rules of the time, back these were not accompanied by sufficient deterrent power in several cases. After that, the various regulatory areas, such as fire protection, also underwent continuous specialization. In the case of contemporary fires, I should also mention the significant role that the existence of today's field of civil protection would have played with the associated human and material resources, as we could see that in both cases people who lost their homes had nowhere to go and their food supply and the health care of the injured were also hampered. In today's system, this would not be possible, as we can also see from the legal definition of civil protection that it is their task to provide the conditions and take the necessary action, so it would be the task of today's professional disaster management organization. With today's rules on eviction, evacuation and reception, and the existence of the necessary action plans at the time, would have been possible to secure people in designated reception areas according to the protocols, to take care of their food and health care, among other things.

Summary

The person of Jenő Vitéz Roncsik, who can be certainly called on of the polymaths of fire protection in Hungary, and later on he became the first chief firefighter of the city of Debrecen, played a key role in the establishment and regulation of the Hungarian fire protection including prevention and fire intervention.

He also owed his knowledge to his extensive qualifications and experience, as well as his faith in the work. He believed in the importance of fire protection and the triple division of tasks. In the research of authors, according to the documents revealed, it can be stated that we could have prevented the destruction of the two fires by observing today's rules and by the central authorities of prevention, which play an important role in enforcement, and by our sophisticated sanction system, and thanks to our sophisticated sanction system, we could have prevented and, in the event of an incident, the damage could have been minimized by using effective firefighting tactics and the deployment of trained and appropriate personnel with effective technical equipment. January 1, 2012 brought significant changes in the field of fire protection, at which time the disaster management bodies were reorganized, thus a professional disaster management organization based on sub-superiority and operating under unified management could be established. Prior to the entry into force of the legislation, even independent professional municipal fire brigades were integrated, so that professional fire brigades were established as a local body of the professional disaster management organization in connection with the branch offices. Local, regional, and national government departments have emerged that play an essential role in performing complex and effective fire prevention tasks. Their task is to minimize the chances of a fire and to protect the lives and property of both the interveners and the public in the event of a possible damage event.

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Ferenc Molnár

Security of Energy Supply with Knowledge of Expected Production and Consumption Trends

Abstract

The history of mankind is accompanied by the presence of energy, its ever-expanding uses and forms, and the ever-increasing need for energy. For the man of the present-day energy is present in so many forms of appearance and use that it could not be listed without being exhaustive. The use of energy is decisive in every segment of modern human life. Without exaggeration, it can be stated that the conditions of the urbanized man living today would basically change without energy. Without electricity, nothing would work, such as control systems implemented by computing devices as well as the main and auxiliary equipment of basic power systems. It is easy to see that the absence of electricity water and gas supply would be a cut off. Ventilation systems would not work. Traffic would stop and it would be total dark at night. There would be no heating and cooling systems for the apartments. Industrial and agricultural production would stop. There would be no drinking water or food. Communication and security systems would not work. National law enforcement would not be able to fulfil its function. Lack of energy would lead to economic and social disaster. Today's global population of nearly 8 billion people is depleting the Earth's energy supply and destroying its natural environment at the cost of ruthless energy use. If the current energy use trend of civilization will not be moderated and modified, the conditions of humanity as a whole will be jeopardized, in the immediate future. In this case, we will eliminate the living conditions of future generations. It is a popular saying that the Earth is not ours, we have just borrowed it from our grandchildren. It is our responsibility to pass on a liveable world to posterity.

Keywords: energy, sustainable development, energy supply, emission, electricity

Global trends

Of the world's population the EU27 and the United Kingdom have more than 512 million inhabitants. As the population grows, the use of primary energy also increases, but energy consumption will increase at a much greater rate. In retrospect, according to a survey in 2000, 16% of the population was already using 80% of the total amount of energy consumed. According to a research of the University of California, the largest emitters of carbon dioxide are transport, with 49% and the energy sector with 30%. (Hejazi, 2017). According to the International Energy Agency, the world's population consumed nearly 7,300 million tonnes of oil equivalent (Mtoe) in 1980. This value increased by more than two-thirds in 2008 to 12300 Mtoe. (WEO 2010) Yet between 1980 and 2008, there was a strong upward trend in primary energy consumption.

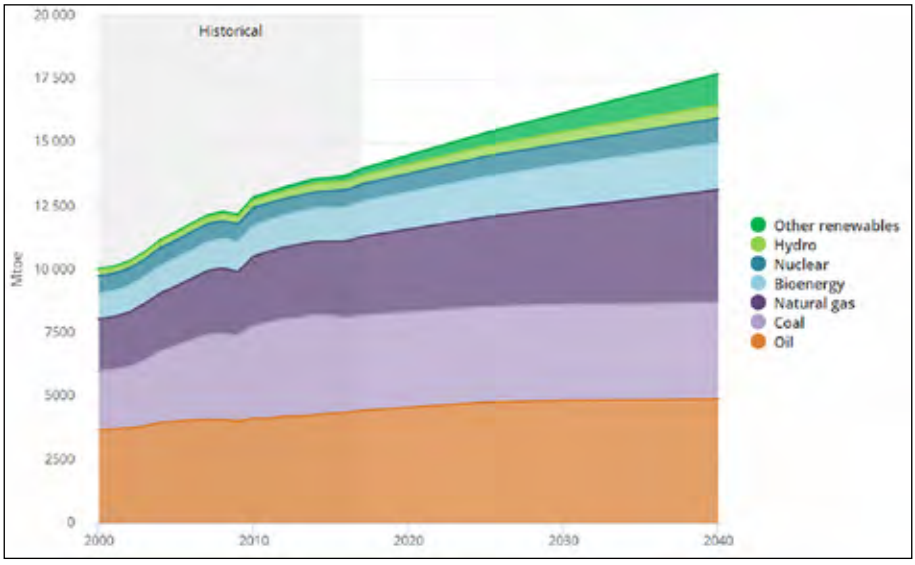

Figure 1: The increase in world primary energy demand by energy carriers (WEO, 2018).

From these quantities it can be deduced that the Earth's energy reserves are being exploited at a disastrous rate. More than 70% of the energy consumed comes from fossil fuels. The ratio between nuclear and renewable production is minimized by fossil-based applications (Figure 1). The European Union expects that by 2050 the economies of all member states will achieve economic growth with zero emissions. According to the calculations of the Hungarian policy, the

implementation of this would cost Hungary HUF 50,000 billion. Hungary's goal is that 90% of the electricity will be generated from carbon-free sources by 2030. By 2040, the energy demand of the Earth's inhabitants will increase by 25% of the value of 2017. Without energy efficiency measures this would double the amount of energy consumed in 2017. India's energy consumption could grow nearly double, while China's consumption could increase by nearly one-fifth over the same period.

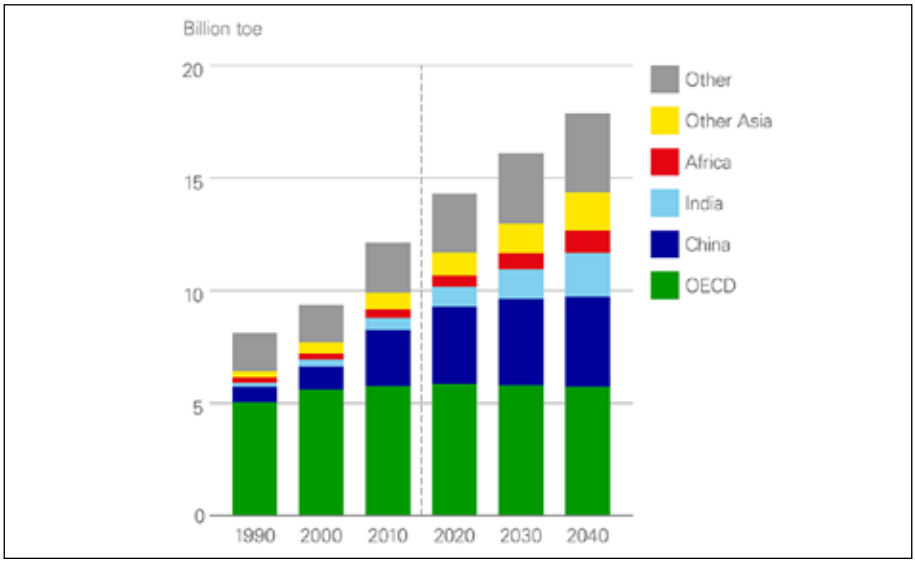

Figure 2: World energy consumption by region (URL1).

The current and expected trend in energy consumption in the developing world shows a steady and strong increase in energy demand, while in OECD countries there will be a slight decline after stagnation. Beside India and China, also other countries in Asia are increasing their energy markets in proportion to the rise in their standard of living. Increasing well-being also leads to an increase in energy consumption per capita. Within ten years India will see the largest increase in energy demand. Slowing China's energy demand growth rate is an indicator of sustainable economic development. However, by 2040 China's energy demand will still double India's energy demand (Figure 2). Africa may come as a surprise, as the continent which is expected to account for 25% of the world's population by 2040, will account for only 6% of global energy consumption (URL1). In the context of sustainable development, the increasing share of electricity in final energy use will play an enhancing important role in

automating, maintaining air purity, reducing pollution, and improving climate parameters. Electricity consumption is projected to reach 45% of total energy demand by 2040, nearly 40.000 TWh per year.

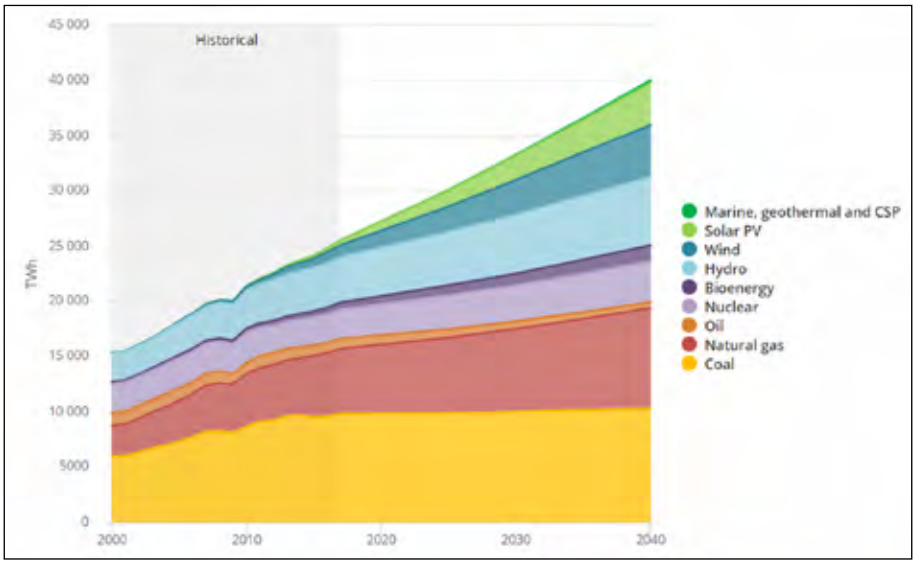

Figure 3: Global demand for electricity by technology breakdown (WEO, 2018)

Global electricity generation is expected to grow by almost two-thirds between 2017 and 2040. Fossil-based technologies will continue to provide a significant share of electricity generation, despite the fact that by 2040 their current share of almost 70% will be below 50%. The dominance of coal use will be replaced by renewable-based generation in the power generation structure. The 20% share of natural gas consumption is not expected to change. Hydropower will remain the largest carbon-free source by 2040, with a 15% share of the electricity mix. More than 70% of the increase in electricity production will come from renewable energies. Solar and wind energy will bring the biggest increase in production. The share of nuclear power is expected to be stabilized at 10% (Figure 3). Two-thirds (220GW) of the currently operating nuclear power plants are over 30 years old. China will be the world's largest nuclear energy producing region.

Within the growth trend of final primary energy consumption, industrial consumption accounts for almost half of total consumption. Residential and commercial buildings account for 29% of total consumption. The 21% share of transport is also significant (Figure 4).

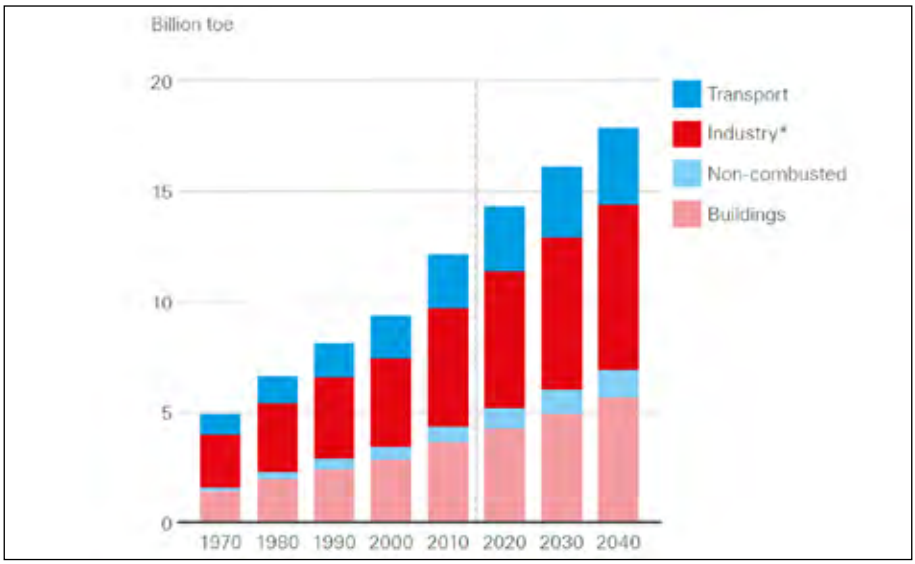

Figure 4: End use of primary energy by sector (URL1).

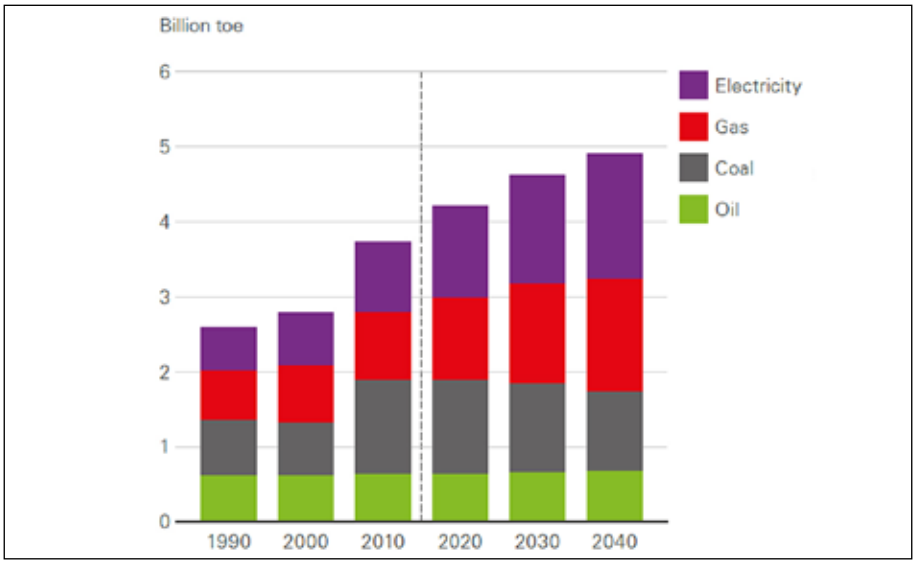

Figure 5: Use of industrial sector energy by type of energy (URL1).

Industrial consumers can easily see the increase in electricity demand due to automation and the rise of digital technologies (Figure5). In the next chapter, I would like to briefly introduce electricity technologies.

The Hungarian electricity strategy

In December 2018, the Government adopted the concept of a new energy strategy integrating the National Energy and Climate Plan (NECT, 2018), which is coherent with the adopted Paris Agreement. As we see internationally, the domestic energy sector is undergoing a rapid and vigorous change. In this transition process, the ministry intends to build a climate-friendly energy sector in Hungary, with consumer considerations in mind. Energy use is responsible for more than 70% of greenhouse gas emissions, both internationally and domestically. One way to reduce the need for oil and gas imports is to use nuclear and renewable energies along with energy saving measures. The government has envisaged the 3D principle for the development of the electricity sector. The components of 3D are decarbonization, decentralization, and digitization. In addition, they mean decarbonising the electricity sector, expanding domestic and industrial renewable production, and spreading digital technologies.

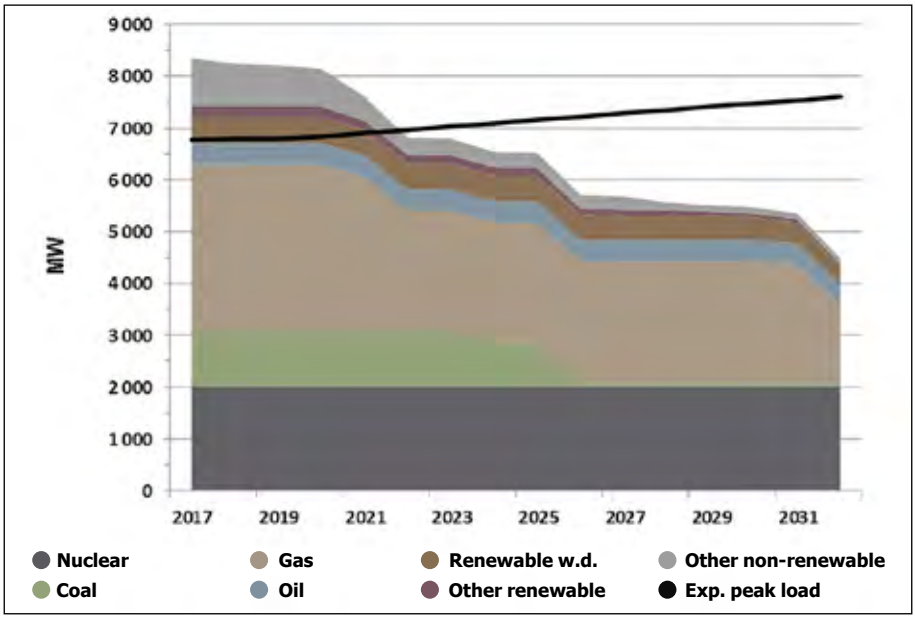

Figure 6: Domestic electricity production and consumption demand by 2031 (URL2).

The above figure illustrates the need to build a significant new power plant portfolio to replace aging power plants and to ensure ever-increasing electricity demand and reduce import dependency (Figure 6). The production of two units

of the Paks2 power plant serving the maintenance of the domestic nuclear capacity in Hungary can be supplemented by the production of renewable-based electricity without carbon emissions. In 2018, more than 50% of domestic electricity production came from nuclear sources (Figure 7).

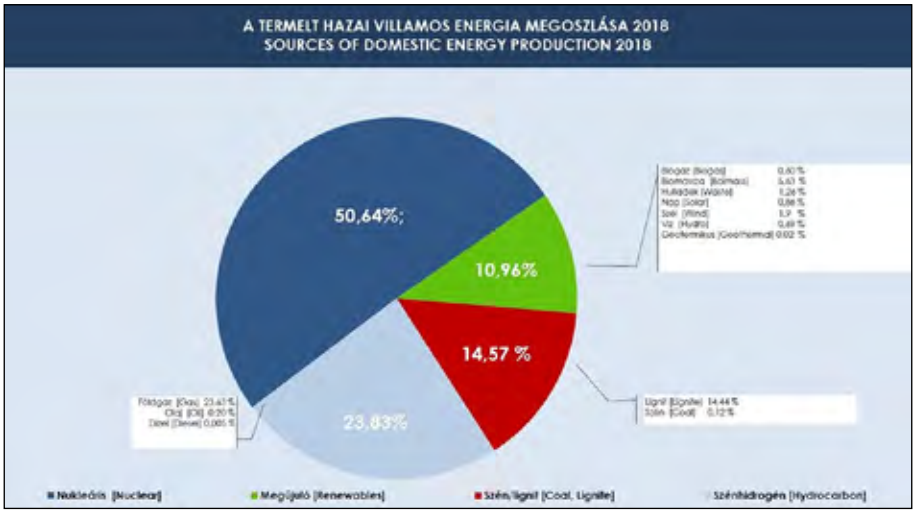

Figure 7: Distribution of Electricity Generated in 2018 (URL3).

The targets set by the European Union's Technical Committees determine an EU-wide target of 40% emission reduction by 2030 and 80% by 2050 compared to 1990 emissions. The Second National Climate Change Strategy, born in 2018, will include domestic reductions of at least 52% and at most 85% by 2030 compared to 1990 emissions. A 40% reduction in EU requirements means that Hungary will emit up to 56.28 million tonnes of carbon dioxide per year in 2030. Domestic emissions in 2017 were 64.44 million tonnes of carbon dioxide (NECT, 2018).

Decarbonisation also involves the exploitation of renewable energy sources. Hungary has committed to a 20% utilization rate by 2030. In the field of electricity generation, 2018 will see 700MW of solar generation capacity expand to around 6000MW of installed solar power capacity by 2030. The share of residential production may increase from the current almost 400MW to over 1500MW (Figure 8).

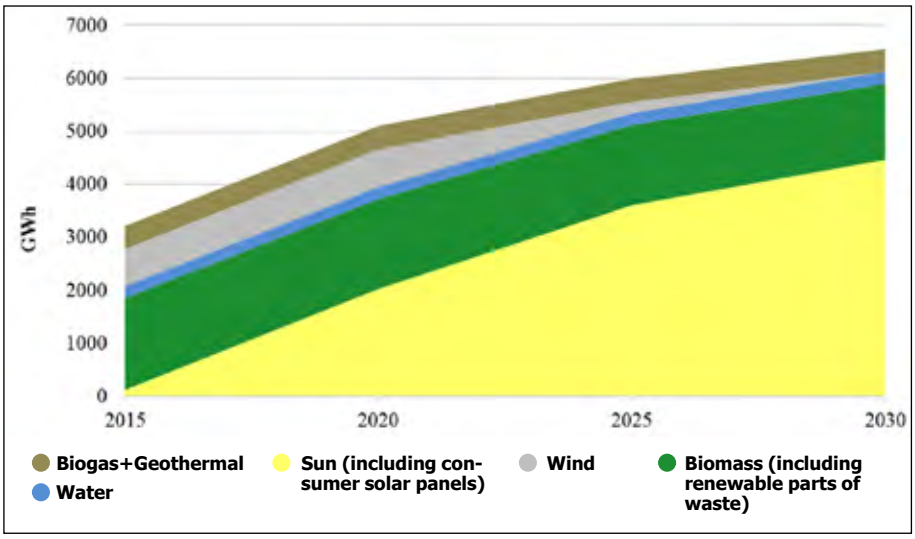

Figure 8: Prediction of renewable electricity generation considering the impact of existing policy measures (NECT, 2018).

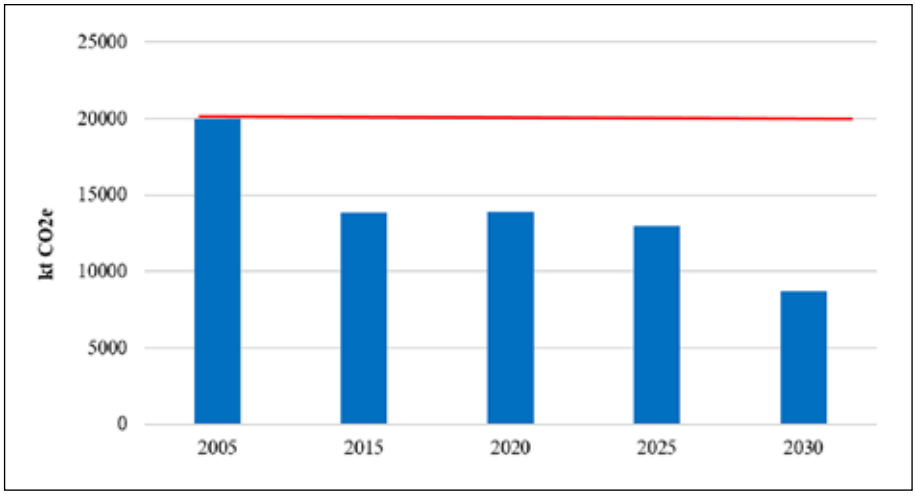

Figure 9: Predicting GHG emissions from the Energy industry considering the impact of existing policy measures (NECT, 2018).

The main goal of the policy is to reduce carbon emissions in energy generation (Figure 9). The ministry intends to involve consumers in carbon-free production from renewable sources, encouraging them to produce their own consumption

needs, preferably with their own storage capacity and smart devices, thus contributing to system security. The merger of 'producer' and 'consumer' activities will thus lead to a new entrant beside prosumer: the active user.

The main elements of the new energy strategy concept are as follows:

- Placing the consumer in the centre of the energy strategy
- Sustainability of overhead reductions
- Strengthening the security of supply and the use of domestic resources
- A need for the climate friendly transformation of the energy sector
- Stimulating energy innovation for carbon neutrality with smart technologies, energy storage, etc.
- The Government will give priority to domestic solar energy utilization. It supports the supply of renewable energy from small-scale households, small and medium-sized enterprises, and the development of cost-effective renewable power plants on an industrial scale.

With the rise of weather-dependent renewable-based producers, system control tasks will become increasingly important. System regulation and network development are essential for integrating renewable producers into the system. Expansion of the built-in flexibility reserve capacity and new technologies are needed to carry out the regulatory activity. These tasks are becoming increasingly urgent globally and domestically as a result of the transformation of power generation technologies. The development of new technologies and the promotion of related innovations must be a priority for all governments.

Summary

Almost 50% of the world's energy is consumed by barely 7% of the population. By 2040, Earth's energy consumption will be increased by more than a quarter of its present value. With the highest consumption and emission growth, India and Asia will share, doubling current energy use by 2040. Hungary also has significant development potential in energy management. Energy consumption per capita GDP is more than twice the average for Western European countries. Following the European Union's energy and climate protection policy, Hungary is committed to implement the continent's objectives. Our country has voluntarily made stricter commitments than the tasks assigned to us by the EU. These include the rate of expansion of renewable energies and the reduction of green-

house gas emissions. The use of clean energies, extending energy efficiency and energy saving to all segments of the economy and society, and consistently adhering to them, are key to the sustainability of the Earth. Unused energy is the best way to protect our environment and our future. Sustainability means retaining the ability for future generations to provide their own living conditions.

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Online links in this article

URL1: *British Petrol Energy Outlook 2019*. https://www.bp.com/en/global/corporate/energy-economics/energy-outlook/demand-by-region.html

URL2: *Áttekintő ábra a Magyar villamosenergia-rendszer legfontosabb adatairól. [Overview diagram on the most important data of the electricitry system]* http://www.mavir.hu/web/mavir/home

URL3: *A teljes bruttó villamosenergia-felhasználás megoszlása 2018. [Componenets of the Total Gross Electricity Consumption 2018]*. https://mavir.hu/documents/10258/229275463/El%C5%91zetes+Termel%C3%A9smegoszl%C3%A1s++2018+MavirHonlapra+HU+20190131.pdf/c7c5165f-9332-ddc1-93d9-f0bef4b08a3d

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Nikolett Ágnes Tóth

Thoughts about the current issues of sports policing

Abstract
The present study investigated the causes of football hooliganism and the preliminaries, the tragic events and stadium disasters of the last few decades, which called the attention of those involved in securing these events to the fact that the existing practices had to be changed and that the creation of new legal norms was necessary. The paper showcases the significant statements in Taylor's reports, which were adapted in the practice of securing events in Hungary, too. Taylor established that there was not one method for the management of crowd behaviour that could provide complete safety and, instead of focusing on the policing issue, he moved towards an 'integrated', 'holistic' approach. He realised that it was both impractical and impossible to stop football fans solely by criminal law measures and thought that communication with the clubs and fans, as well as with the media should be developed. All his proposals have now been implemented. Those securing sports events have been trying to ensure order as a basic value of society ever since his ideas were published.

Keywords: sports policing, sports event, football hooliganism, Taylor, crowd psychology, admission

Introduction

In an earlier study I have formulated the idea that sports policing is a specific part of sports administration. It can be interpreted in narrow terms and clearly defined as a special field of policing. A range of laws provides for everything related to sports policing, supplemented by regulations issued by the specific associations, which serve as directions concerning both keeping sports policing records and securing sports events (Tóth, 2016, 292.). In the present paper I seek answers to the following questions: What are the reasons for football hooliganism?

What preliminaries, disasters in various stadiums have happened in the last few decades that focused the attention of those involved in securing events on the fact that the existing practices had to be changed and that the creation of new legal instruments was necessary? Since it is a well-known fact that order is of basic value for every society, and those involved in securing sports events need to make all the efforts in order to provide it, even though, unfortunately, perfect safety cannot be guaranteed. Safety must be given as a service, the main purpose of which is to prevent disturbances. In order to get to the roots of football hooliganism, we need to learn about the history of its development and also the analysis of crowd psychology and that of the supporters attending the stadiums is essential. Stadiums also have special acoustics, which enhance the extraordinary atmosphere of matches with the help of various technical devices (loud music and enormous projectors). When a lot of people are crammed together in a confined space, even the smallest wrongdoing may become fatal (Tóth, 2017, 13.). The individual is dissolved in the crowd and is released from social control. The fans feel that they are anonymous. Since they are driven by the same emotions, striking slogans have an intense impact on them and incite powerful emotions in them. Their individuality ceases to exist; in the crowd they become one and are overwhelmed by passion. The theory developed by Gustave Le Bon discusses the phenomenon of crowd psychology. Its main finding is that the individual loses himself in the crowd (Csepeli, 2001, 157.).

The development of football hooliganism

In the first half of the 20th century soccer was considered a gentleman's sport that had regard for fair play. Consequently, its habitual visitors were middle-class people. The roots of violence among spectators go back to folk football in Medieval England. The behaviour known as football hooliganism emerged in the UK in 1960. In other western European countries, such as Italy, Germany, the Netherlands and Belgium the phenomenon developed only 10 years later. In those times clothes search, for example, was still carried out only superficially, the police in the stadiums were understaffed, the chief of police responsible for order in the section did not ask for help in time and the fans were not segregated properly. The disturbance after the National Championship 1 (professional league, NB I) soccer match of 10 March 1990 between Váci Izzó and Ferencváros (FTC) is usually mentioned as the event during which the phenomenon of football hooliganism started in Hungary. Earlier, in the 1970s and 1980s there had already been adverse manifestations by fans, mainly at matches of the teams

FTC and Újpest. Then the Minister of Children, Youth and Sport Affairs asked a committee to evaluate the state of affairs. The investigation established that football hooliganism is a complex social issue that cannot be remedied merely by policing tools. Using the report, the contemporary government developed an action programme and on its basis the government decree 1071/2003. (VII. 18.) was accepted, which defined the specific tasks to be carried out by the various ministries, including deadlines and persons in charge. In 2006, based on the research done by the National Institute of Criminology it was clear that there was a lack of efficient sanctions; banning fans from matches was not a functioning legal institution. There were no access control systems, and the sports facilities were also in poor technical condition. It was already established at that time that football hooliganism could only be combatted with the cooperation of all the actors of Hungarian soccer and of the police, an important element of which should be a continuous dialogue and consistent compliance with the legislation (Nagy, 2006, 118-134.). In the 1990s a joint research programme was conducted together with CEPOL. In the framework of studying mass events, the lessons learnt about access control systems and forward-thinking proposals were shared among police experts, which also had a great impact on the principles of securing events. Going back to the preliminaries, we can sadly establish that since the Second World War 1500 people have been killed in more than 60 stadium disasters, which turned the stadiums into hell. The case in 1964 is recorded as one of the most devastating events, in which 318 people were killed in Lima, after a match between Peru and Argentina. The police used tear gas against the fans, who tried to escape but the exits of the stadium were locked up. Apart from the 318 fatalities more than 500 people were seriously injured. A rash police attack in Ghana in 2001 ended with the death of 127 people. The people in the panicked crowd fell over each other as they wanted to get out, but most gates were closed at this event, too. 93 people lost their lives under bizarre circumstances in Nepal in 1988, when an enormous hailstorm hit the stadium in the middle of a Nepal – Bangladesh match. The spectators tried to escape, but, for some unknown reason, the police kept and turned the crowd back and the people crushed each other to death. In 1985 a dropped cigarette-end caused a fire, which reduced one of the terraces of the stadium in Bradford, UK to ashes. The police had to drive the spectators to the field but even so, the tragedy was unavoidable, resulting in 56 fatalities. An interesting fact is connected to the above, namely that in the Staff Regulations issued for the Police by the Hungarian Ministry of Interior, it was pointed out already in 1948: *'Smoking is prohibited on the wooden grandstands (terraces) of sports and race grounds. The audience's attention must be drawn to this ban with the help of signs posted in*

prominent places.' In Scotland there were two disasters. In one of them, due to heavy rains, the newly constructed wooden grandstand drenched through and collapsed during a match. Several hundreds of fans fell down and 25 did not survive. The decree adopted after this case stipulated that stadiums in the territory of the UK must be built from reinforced concrete. The worst sports disaster in Russia took place in Moscow in 1982. The leadership of the Lenin Stadium decided to open only the western and eastern terraces, these being the only clean ones after a heavy snowfall a few days before. Some people fell over the barriers, taking several others with them. This domino effect caused the death of 66 spectators (Kocsis, 1986, 21-22.).

A few more data on panic resulting in disasters:

25 people were killed and 517 injured in Glasgow, in 1902, where in 1971 there were 66 fatalities and more than 100 injuries. We know about 120 injured during the Firenze – Juventus match in Turin in 1957. Ten people died and more than 100 were injured in Kirikhala, Turkey in 1906. A match in Buenos Aires in 1968 led to 80 fatalities. 33 casualties and 400 injured were reported in Bolton in 1946. October 1956, Naples: 65 people injured. December 1964, Istanbul, Turkey – Bulgaria match: 84 seriously injured, due to panic. 1964, Turkey: 27 fatalities and 600 injured after a clash with the police. 1968, Buenos Aires: 80 dead and 150 people injured at a River Plate – Boca Juniors match. Congo, 1969: 27 dead and 52 injured, due to panic within the audience. April 1977, Hamburg: 1 dead, 25 injured at the Hamburger SV – Bayern München match. June 1977: only three months after the previous case, 70 injured again at the Hamburger SV – Bayern München match. At the Zamalek– Dukla Praha match in 1974 several hundred people were injured and 48 were killed. 1981, Piraeus: 21 dead and 54 injured at the Olympiacos Piraeus – AEK Athens championship game. November 1982, Cali: 24 fatalities and 50 injured at the America – Deportivo championship game. November 1982, Algiers: 8 people died and 600 were injured when a terrace collapsed during the championship match of the local team. May 1985, Beijing: vandalism and clash between the police forces and the fans, several dozens of injured and arrested people after the 2:1 defeat by Hong Kong (Kocsis, 1986, 22.). Wednesday 29 May 1985, Brussels, Heysel Stadium, European Cup Final between Juventus and Liverpool: The two teams were accompanied by several tens of thousands of home supporters, who had arrived in the capital of Belgium by air, ship, train and car, more than 30 of them never to return to their homes, due to a group of drunken and careless British supporters, who attacked the Italians. Escaping from the raving Britons, the panicked crowd was pushed back against a brick wall, which collapsed. Many of the people fell down, after which the remaining part of the wall collapsed onto them. Incidentally, at

that time sports events in Brussels were secured by experienced, practised organisers. The Belgian minister of the interior had alerted the gendarmerie, the police, the fire brigade and the ambulance before this match. More than 3.000 police officers were securing the stadium and the whole law enforcement machinery of the city was on standby. There were 7 ambulances and a medical liaison car on the premises, as well as 200 English police officers to help their Belgian colleagues. The entrances of the stadium were opened at 5 p.m., three hours before the match, which was planned to begin at 8.15 p.m. The clothes of the spectators were searched in only a superficial way, as the fans were eager to get in fast. The Heysel tragedy was clearly caused by football hooliganism, resulting in the death of 39, mainly Italian supporters. Many people think soccer died that day. That is what The Times also declared the following day, taking a very strong stance against football hooligans. I believe that, after this incident, due to the significant changes, the whole industry of soccer was reborn from its own ashes, to become one of the most profitable businesses in a short period of time. Beginning from the mid-1960s, the majority of the spectators at football matches was gradually made up of those living on casual work and social benefits. The latest research, however, shows that the ratio of those who never go to such matches is the highest among those who completed only 8 years of primary education or even less. My findings have confirmed the same. In the first half of the 1990s in Hungary it was only the police that took an active role in managing this negative phenomenon in sport. A standing committee was set up to review the infrastructural requirements and to update the security plans of the contemporary People's Stadium. It must be highlighted that the Crowd Management Division of the National Police Headquarters has been running a National Football Information Point to manage intelligence related to threats to security since 2003. Going back in the Hungarian history of football atrocities, we should mention events like the one in 1921 at an MTK – Kispest match at the stadium in Üllői road, Budapest, when a referee was beaten with a knuckle duster until he passed out or the match in 1922, which the chief commissioner of the national police ordered to be held with the public excluded. In 1937 at a FTC – Debrecen match 2000 fans were stopped by 14 equestrian and 10 pedestrian police patrol officers. In 1947 a match between the Hungarian and the Austrian elected teams almost ended in a disaster. The fans were celebrating the 50th anniversary of Hungarian football at the sports ground of the FTC in Üllői road. More than 40 thousand people were crammed on the wooden terraces designed for fewer people, whose 8-metre section collapsed, resulting in about 200 fans falling down. At the beginning of the 2000s, acts qualifying as football hooliganism or vandalism and brawls between fans already occurred

in higher numbers. By that time, it had become quite clear that securing public order was necessary not only on the terraces but also before, and, more importantly, after the matches (Kolláth, 2003, 40.). On 30th May 2003, after the match at the stadium of the FTC in Üllői road, Budapest, a riot broke out among the spectators. It is almost unbelievable but there were no fatalities this time, either. The most seriously injured person, a young man suffered vertebral and cranial fractures. (He became disabled for all his life and later was employed by FTC. He was a cashier for 25 years and was even given accommodation in the Club's headquarters in Üllői road.) On the same day there were atrocities in Siófok between the fans of the teams of two towns.

The Taylor Report

Lord Justice Peter Taylor worked together with a committee and carried out a detailed analysis of the Hillsborough disaster in 1989. His recommendations, for example the establishment of all-seating stadiums without perimeters, radically changed the image of modern British (and later European) soccer. In his Report, Taylor examines not only stadiums but also the facilities of many other sports. However, he clearly establishes that the most important task is to ensure the safety of football stadiums, on the one hand because football can be considered the sport of the nation and, on the other hand, because it moves the largest crowds. He considers overcrowding the greatest threat and his investigations showed that disasters also resulted from outdated stadiums, poor facilities, hooliganism, excessive drinking and poor management. In the present paper I wish to present the practical elements of the Taylor Report and its influence on the securing of sports events, taking into consideration the Hungarian practice and comparing the underlying principles. In Hungary there have been no fatalities related to sports events. Before the change of the political system, in a society under strict control, disorderly acts rarely occurred on the terraces and around the sports fields. Even the chants were more mannerly. Since the change in the political system, violent acts among the audience at sports fields have become more frequent. Today the mass media do not keep silent about such events, either, although their reports are often about scoop hunting and written in tabloid style. Unfortunately, violence has become a form of spending one's spare time. A professional committee led by MP Zoltán Páva studied the experience and lessons gained from the already mentioned, 2003 riots in Üllői road. Their findings, often referred to as the Hungarian Taylor Report were issued on 12th July 2003. The committee established that football hooliganism had been han-

dled almost exclusively as a policing problem. The Report wanted to find the most important lessons and similarities that could be found with the Taylor Report and to reveal the new, modern security philosophy and the important legal measures needed. It also sought answers to questions such as: What results can be expected from the application of technological solutions? To what extent are the problems football-specific? (Kolláth, 2003, 41.)

Based on the study report on the events related to the demonstrations, street riots and public order measures in Budapest in September-October 2006, we can state that in the mid-2000s soccer matches were frequented by fewer and fewer real fans and consequently the terraces were less occupied by football hooligans, too. Between 2003 and 2006 there were 23 cases when the riot police had to intervene in stadiums. The aforementioned professional committee was already set up in 2003 to investigate football hooliganism. It established that the state of sports security was not satisfactory and that after a scandal the responsible persons or organisations had only been found in exceptional cases. Between 1992 and 2002, vandalism led to riots in 46 cases, resulting in serious damage at the matches or in the surrounding areas, including wrecking the means of transport and shops on the hooligans' way or harassing and hurting passers-by. Of course, at that time large-scale violence and supporting football teams were not necessarily related. The member states of the Council of Europe agreed on the European Convention on Spectator Violence and Misbehaviour at Sports Events and in particular at Football Matches on 19 August 1985. The basic principles of this Convention were also incorporated in the Hungarian Act on Sport (2004). That was why the committee proposed that the limits of liability of the organisers of sports events should be clearly defined. It was necessary to make it clear that the police should only take part in securing sports events and in restoring public order for the purpose of performing a public task. It was decided that the police should appoint one or more officers, called constables responsible for order to assist the organisers of high-risk sports events. These officers should supervise on the scene how the event is organised and conducted, whether the security regulations are observed and may initiate, if necessary, the intervention of the police forces. They thought the police had to be authorised by law to declare an event finished, take out and remove ringleaders, or if this is not feasible, to dissolve the crowd, provided that the behaviour of those present endangers the safety of the event and order cannot be restored in any other way. His research led József Végh to the conclusion in 2001 that it was very important that plain-clothes police officers should join fans' groups. He wrote that each officer should meet the same group of fans, since personal acquaintance and relationship, through which the fans will definitely consider

the officers their partners, is more efficient than any squad operation for crowd management. With the help of this constant relationship between a well-prepared police officer with good communication skills and a group of fans, the police command can be informed about the planned events. In Germany, too, it helped a lot with managing football hooliganism that this kind of work became the main sphere of activities of some experts (Végh, 2001, 47.). Today plain-clothes police officers wearing Partner Group waistcoats play an active role in securing sports events in Hungary. At sports activities posing a security risk they also apply dialogue-based crowd management, laying great emphasis on communication and defusing volatile situations. The members of the Partner Group are clearly distinguishable from high-profile police. (The Group had their debut at the Romania – Hungary soccer match, actually posing the greatest challenge to the police.) They work among the fans, wearing plain clothes, without having weapons or coercive equipment. Their task is to mitigate tension, recognise crisis situations and manage them by verbal means. They do everything in order to have a peaceful solution by getting into and keeping in touch with fan clubs. The members of the Partner Group do not take measures. While working, they constantly maintain contact with the chiefs of the operation units. They actively monitor the spectators, notify their colleagues, who are deployed to provide security, about more significant disorders and provide information for the fans about escape routes and the order of transportation. They aim is establishing a situation that requires the smallest amount of active police intervention. They place emphasis on the prevention rather than the solution of problems and try to keep up the dialogue with the fans. Order No. 8/2010. (OT 5.) of the National Police Headquarters on the qualification and policing of sports events names the earlier mentioned, appointed police officers as spotters within the organisational structure of the Hungarian Police Force. According to this order, spotters, i.e. officers appointed to liaise with sports organisations and to carry out and coordinate security-related policing tasks must be involved in the preparations and execution of securing the safety of sports events. Spotters are professional members of the police staff, deployed at the various sports teams and organisations. They are selected from their own staff by the head of the territorially competent police headquarters. The key selection criteria are situational awareness, good communication skills and love for the given sport. A spotter must know everything about the team. He must know its members the fan groups and it may also be important to have or to establish a relationship of trust with them (Keller, 2016, 16.).

In his Report, mentioned earlier, Taylor also defines the role and line of responsibility of the police and of the organisers, including the bearing of the

costs. Firstly, he discusses whether the terraces should be monitored by the police or the club via its stewards. He refers to the Green Guide (issued in 1986), according to which it is basically the responsibility of the home club, i.e. the one that invites the audience to its premises to secure safety at the event. More exactly, both in normal and in emergency situations, safety of the public inside the ground is the responsibility of its management. He lists the five basic duties of the stewards, such as:

- controlling or directing the spectators when entering or leaving the stadium to make sure that there is an even flow of people and that they are safely dispersed on the terraces;
- patrolling the premises and managing emergencies (e.g. fires) that occur;
- supervising important points such as entrances and especially exits and gates that are open during the event;
- helping the police staff with crowd management when needed;
- carrying out specific duties in cases of emergency.

Taylor refers to the public inquiry made by Justice Popplewell in 1985 and the interim report based on it and another report produced for the Minister of Housing and Local Government in 1969, according to which crowd control responsibilities should be split between the police and the club operating the ground. However, it says that the police should be responsible for the movement of spectators through the entrances and from the entrances into the ground, and the club is responsible for the control of spectators inside the club's premises. Justice Popplewell says that in practice the physical safety of the premises is the responsibility of the club, whereas the police usually take care of managing the crowd during the game. For example, if the ground has to be evacuated, the police should organise and supervise the procedure. In his Final Report, Popplewell explains that this practice has developed as the police officers have regularly attended football grounds in large numbers and thus the clubs have assumed that the control of what happens inside the ground has passed to the police from them. He, however, emphasizes that it is mainly the responsibility and duty of the club or of the occupier of the ground as the organiser of a private event to ensure reasonable safety for those who are invited and the task of the police is merely to assist in the enforcement of law and order. Yet, the club may need to *'employ the police to act as their agents in certain circumstances*' and may actually be authorised to do so, which involves paying them to attend and prevent the sections from overcrowding. At the same time Popplewell acknowledges that this is a grey area of responsibility, which needs to be reviewed.

Taylor goes on to define several elements within the monitoring of the terraces, such as the phase when the spectators enter, when they are placed, when they move within the ground and when they leave it, i.e. exit from it. He also confirms that the club has the legal duty to take reasonable care for the safety of those invited to the ground but specifies two practical reasons why the clubs are tempted to make the police be in charge (Final Report, 1990, 35.). One is that the clubs carry out their duties through stewards, who are often supporters themselves, often inexperienced and physically not fit enough to deal with unruly customers, are underpaid and not always committed to the task. The police, however (and this is the second reason), have the duty to maintain law and order in public areas outside the stadium. They are trained and, thanks to their uniform, have the respect of the majority of spectators, who fear the law, thus they have far more authority than the stewards do. Therefore, and also because they have the control room, the CCTV, a communications system to co-ordinate deployed officers around the ground and reserves at their disposal, whenever there is misbehaviour or disorder, the police will inevitably be called to take control. Taylor quotes a submission from the Association of Chief Police Officers of England, Wales and Northern Ireland (ACPO), which says that '*dual responsibility for safety is a recipe for confusion*'. Since the police will always seize the initiative in a crisis, will never accept direction from stewards and stewarding will never be able to cope without some law enforcement backup, the police should have prime responsibility for controlling the crowd. Taylor also notes that clubs are tempted to leave it all to the police if they are not required to make realistic payment for police services. He describes the contemporary practice, according to which recovering costs of policing inside the grounds varied greatly from place to place. It either involved the actual cost of the officers attending the stadium or depended on the risk category or the size of the crowd involved, or, in certain cases was entirely arbitrary. Taylor suggests that it would be more economical to recruit fully trained (with the help of the police), efficient, fit and active stewards or hire security firms to man gates, direct spectators to the correct areas and to their seats, keep gangways clear, monitor the density of packing in pens or enclosures. This way they could reduce the number of police deployed, whose authority would mainly be needed at high-risk matches. He also proposes that the clubs and the local police force should have a written statement of intent, setting out their respective functions for crowd control (Final Report, 1990, 37.). Taylor thinks that the definition of the tasks of police commanders is also of major importance, since the ultimate control of any match lies with them. They must decide on the number and positions of the officers deployed, whether or not to postpone kick-off, stop the

match, evacuate the ground or any area of it. Whereas experienced commanders have the necessary skills and special knowledge of the problems at their particular ground, new commanders must be trained for such functions at specific courses where they could also pool experience and find solutions to common problems (Final Report, 1990, 38.). Going back to Hungary, it is an interesting fact that according to the 1948 regulation issued by the Ministry of Interior nobody was allowed to be in the field during the game, apart from the 22 players, the referee and the linesmen. Only the representatives of the football associations, one doctor, one trainer per team and the reserves (at international matches) were allowed to sit on the inner side of the barrier that separated the field from the spectators. It was the duty of the referee to punish the breach of discipline and to remove unruly players from the field. The referee was obliged to carry out all the orders of the police officer-on-duty appointed to the match concerning the maintenance of order, precisely, without any comments, otherwise the officer-on-duty was authorised to stop the match immediately. Taylor, too, thought that policing activities should be carried out in a reliable way, based on collected intelligence and appropriate risk analysis, applying the most optimal number of staff. He suggested that the police and the clubs should split the costs of securing safety. Higher levels of order meant saving significant sums of money in terms of the number of police staff. While in the mid-1980s there were 74 supporters per one police officer, from 2003 the ratio was halved with 161 supporters per one police officer. According to Hungarian police statistics, today at a high-risk soccer match with 5.000 spectators there are usually 171 police officers and a 100-strong private security team. Taylor viewed securing safety as a complex system with prevention being primary. He reviewed the whole philosophy of security from selling tickets to the visiting team returning home. His report established that the police had prime responsibility for the Hillsborough tragedy. In accordance with Taylor's suggestions and the regulations defined by the Council of Europe, UEFA supported the transformation of stadiums into all-seated grounds for its system of competitions.

This was one of the 76 recommendations Taylor formulated for the sake of more secure sports events. The most important ones of these concerned the following:

Advisory Design Council
National Inspectorate and Review Body
Maximum Capacities for Terraces
Filling and Monitoring Terraces
Gangways
Fences and Gates

Crush Barriers
Duties of Each Football Club
Police Planning
Communications
Offences and Penalties
Green Guide (Ibid. Final Report, 1990, 76-82).

In his Report, Taylor devotes a separate chapter to police planning and control and the provision of an appropriate and efficient police control room. While he acknowledges the activities of the police in maintaining order at sports events and especially in and outside football stadiums and praises the police staff for their invaluable work, being subjected to abuse and having no thanks for the service they provide every week, he underlines the responsibility of some senior officers in what happened at Hillsborough. He admits that it is human fact for the officers to react to the stress and provocation they have to endure and that in the confusion of a crowded scene requiring firm police action it is difficult to select the innocents and free them from the measures taken. Therefore, it is very important to have high-standard police discipline and self-control and friendly relations with supporters. Also, firm control should be balanced with good humour and patience. The police officers should be trained to recognise crowd density and signs of distress and should take immediate measures if necessary. A chief officer from each police force should be nominated to liaise with the management of each football club concerned. Planning should involve providing sufficient reserves to enable rapid deployment of officers to be made at any point inside or outside the ground. Arrest procedures should be optimised so that an arresting officer will not be away from his post for long. The option to postpone kick-off should be in the discretion of the officer in command at the ground. In the Police Control Room, which should be inside the ground, the results of all closed circuit television monitoring outside and inside the ground and the record of numbers admitted to any area of the ground should be available and the officers in the control room should interpret these data. These rooms should be well placed, with a good view of the whole pitch and the spectator areas, of sufficient size and well equipped with radios, telephones, and CCTV screens. There should be room for the Commander, his deputy and enough officers to operate the equipment, as well as others who may need to visit the room from time to time (other senior officers, club management or a member of the emergency services) (Final Report, 1990, 42.). Command points also help police work significantly in Hungary today. Several stadiums have modern command points, the one in Groupama Arena being the most up-to-date,

equipped with 200 high-definition cameras and 3 mobile cameras to assist the police. We should also mention the development of the new Puskás Ferenc Stadium under construction, where the designs for the security system were made following the German pattern. In this facility, too, there will be an independent command point with a detention room and interview rooms. In fact, there will be a miniature police station having the latest technological equipment (Tóth, 2018, 632.). Taylor also thought it was important to enumerate the measures to be taken in order to avoid congestion and panic. In his Report, he calls the attention to the risk of congestion outside turnstiles and consequent injuries or disorder, especially if there is only a limited number of turnstiles and because a large proportion of the crowd usually arrives late, during the last 20 minutes before kick-off. This leads to the building up of queues, followed by anxiety among those waiting, who fear they will not get in for the kick-off. Crowd noise from the ground, when the teams are out, increases impatience. There is also a real danger of pressure towards the turnstiles causing injuries and panic resulting in disorder. Taylor points out that since the national membership scheme has been introduced, all spectators passing through the turnstiles must produce their membership cards for checking, for which some additional time should be allocated. The Statement of Requirements (SOR) for the national membership scheme also provides that the six basic checks should add no more than 1 second to each entry. Whether this can be achieved even in unfavourable conditions depends on the procedures at the turnstiles and on the technology applied.

The process at the turnstile may be delayed if, for example, the card has expired. In this case the card has to be retained and the turnstile operator is required to make out and give the holder a receipt for it (containing either the membership number or some other method to identify the retained card later) and explain the procedure for redeeming the card later.

Other cases in which the process is delayed are:

- if the turnstile alarm alerts the operator to a banned, lost or stolen card or pass-back, in which case the suspect is to be apprehended by the police;
- if there is no card or the card is presented at the wrong turnstile – in this case the spectator is turned back from the entry point.

Discussing technology, Taylor underlines that the required computerised system will be the first of its kind (let us not forget that the Report was presented in 1990). It will need to cope with the massive numbers of people, in a short period of time and in all types of weather conditions, therefore he suggests that great caution and a very extensive testing procedure should be applied. He refers to

the Football Identity Card Scheme in the Netherlands, which involved only five clubs with a bad history of hooliganism and applied only to the away matches of those clubs. The scheme failed; ticket sales were not controlled effectively, and away supporters were admitted without tickets. Also, the clubs were hostile to the scheme and those opposing the experiment joined their forces. Taylor, however, thinks that this failure should not deter those backing the implementation of a totally different scheme proposed in the 1989 Football Spectators Act. Using the lesson learnt from the Dutch example, the British scheme should be built on smart cards that can store a lot of relevant information and that show (when the holder passes it over a reader) whether the card is valid, doubtful or invalid. Taylor says he was impressed by the demonstration of the smart card but expresses his doubts whether the system is going to work with multiple turnstiles, among adverse weather conditions, with a large national referral database to be searched and with people trying to circumvent or wreck the system. He also quotes the concerns of the ACPO as regards the efficiency and reliability of the technology. The technophobia of those expressing disbelief about computer systems (*'All our experience to date has been that computer salesmen have offered much and delivered little.'*) today may even seem amusing but at the time with even thoroughly tested computers frequently going down at airports, causing delays at check-in, computer errors in banks, etc. those fears were realistic and the police were right when they felt that they had to *'be involved in the specification for any technology and would need to be satisfied that it works before support could be given to this scheme.'* They were justly afraid of the consequences of repeated failure, hostile queues and endless delays. Taylor also emphasizes that the scheme could cause very dangerous build-ups, but the solution in the London Underground, where they had to provide manned entrance channels alongside the computerised ones, would not work in football grounds, because the main point of the system is to exclude hooligans by computer checking (Final Report, 1990, 67.). By now the system of membership cards have become reality. It goes without saying that the organisers of high-risk sports events may apply an access control system when selling club cards, season passes or entrance tickets and may check the identity of the spectator against the data of this system on entry. Club cards and football cards have been introduced in Hungary, too. Club cards are linked to associations. Football cards are a special type of club cards, issued by the Hungarian Football Federation for those who are not linked to any clubs and mainly attend the matches of national teams. Taylor emphasized the importance of club or membership cards already in 1989. He states that it must have the member's photograph, name, full membership number, the expiry date, the name of the club he belongs to and the membership

number in a machine readable form to allow rapid matching of the card against the national referral file (Final Report, 1990, 63.). According to the Sport Act, in Hungary the legal basis for data processing is provided by the consent of the holder of the membership card. The processed data are the name and the place and date of birth. The management of the home address is only necessary if the spectator is refused by the organiser. The identity of the spectator can be checked before the purchase of the ticket and on entry. It is an interesting fact that the legislation does not differentiate between ordinary and VIP tickets, which may lead to a number of problems. Disorderly fans at sports events can be subject to criminal prosecution or infringement proceedings. Exclusion from the stadium because of offences related to attending sports events may be applied as a secondary or an independent measure. The spectators' visits to sports events were regulated in detail already in the ancient times. The tool of exclusion from the grounds was also applied by the Romans but the range of those concerned was defined in a broader sense than today, since people were banned from watching the games not only for law enforcement reasons but also on grounds of public morality. Today tickets must not be sold to people in the sports policing records who are therefore excluded, prohibited or banished from the events, and thus they must not be admitted to them. A club card is a certificate endorsed with a photograph, suitable for the identification of a spectator, also entitling him to benefits. Personal identities may also be checked by way of biometric means. Personal data may only be used in the case of criminal procedures or infringement proceedings initiated in relation to a sports event or in the case of an exclusion from sports events. Taylor also underlines the importance of exclusion. He states that it could be enforced by two additional measures, namely attendance centre order (the offender must attend at an appointed centre on the occasions of designated football matches) and those refusing it would be liable to further penalties, including imprisonment. The rationale behind it is that merely banning someone from the matches does not ban their presence near the ground. Taylor refers to a similar provision in Part II of the 1989 Football Spectators Act relating to foreign matches and section 17 of the Criminal Justice Act 1982, which empowers courts to make attendance centre orders for young people under 21, with a minimum length of 12 hours and a maximum of 24 and 36 hours for persons under 17 and between 17 and 20 respectively (Final Report, 1990, 55.). We can undoubtedly state that Hungary is a sporting nation. We organise a large number of national and international sports competitions. In 2017 the police were involved in securing the safety of about 1800 sports events. The organisation of conducting sports events is a very complex task, especially in the case of larger or international ones. The number of such events is growing every

year, while securing safety has become one of the most important aspects of their management. Security measures at the same time must be implemented in such a way that the public and the supporters should not be discouraged from attending these sports events, since football, for example, provides a sports experience and excitement for the supporters. Fans usually identify themselves with the positive social, sports and historical content represented by their team, which is clearly manifested in the fans' chants, too. Many supporters are given the opportunity to assume a role that they cannot typically have in everyday life. At a match a fan may become a leader; he can undergo the experience of having power and feel dominant. Many supporters view the world as a system of complex relations but during a match they can create a world reflecting more transparent relationships. Whether their team win or lose, they can easily have a sense of achievement. They often try to create chaos so that it will be followed by a kind of new order, where they can behave according to different rules (Végh, 2001, 40.). In 2011 a representative public-opinion poll was conducted in Hungary, focussing on the factors that prevent people from visiting matches. One of the most frequent answers was that people did not consider stadiums safe enough. In the questionnaire-based research I conducted in 2018 I sought answers to exactly the same questions. I presented the findings in a monograph in my publication of 2019 (Tóth, 2019, 63-67.).

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Online links in this article

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URL3: *Leomló lelátók, megvadult tömeg - Amikor a stadionok pokollá változtak [Sinking stands, crowds going berserk – When stadiums turn to hell]*.
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The Evolution and Communicational Aspects of Mediation

Abstract
Since mediation, as a form of alternative dispute resolution, has become part of the canonized legal system, it has come to life and has made its own path of development from the 1950s to the present. In this paper, the process and the stages of it are discussed from communicational point of view through the terminology of the PTC. The sections also represent the types of mediation. Relationships and interactions between the types are also the subject of this study, as well as the scopes for certain types. The participatory theory of communication (PTC) allows us to review the development of mediation in the 20th and 21st centuries, from a facilitative mediation to a transformative mediation, according to a unified, transparent framework.

Keywords: mediation, problem solving consensus building, participatory theory of communication (PTC), typology of mediation, system theory, development of mediation, transformative mediation, narrative mediation, facilitative mediation, evaluative mediation

Phases of separation from the litigation

Supported by changing legal background and several other conditions, the practice of mediation began to spread in the 50s and 60s of the 20th century. This was the period when modern mediation gained wider recognition (Taft-Hartley Act) (Millis & Clark, 1950). At the time, litigations in the United States were becoming increasingly costly and most of the population could not afford to pay such expenses. Court procedures often lasted for years, which, apart from the obvious law costs, entailed heavy losses for the parties, who had to bring their production or services to a halt for the duration of the procedure. Alternative dispute resolution, such as mediation, was not only more affordable to

the public, but it also promised to settle problematic situations in a matter of weeks. The legal system adapted to the new methods and the judges, attorneys and barristers started to refer their clients to the relevant bodies or services according to the nature of their problems. Besides court procedures, mediation, arbitration and consultation were the most frequent options suggested to those seeking legal help. Because of its distinct advantages and the wide legislative and jurisdictional support it enjoyed, mediation offered solution in an increasing number of disputes. Consequently, mediation and its toolkit are constantly changing and developing. In the past sixty years, several distinct types of the mediation procedures have evolved which can be described by exploring their different dimensions. The application of the different types depends on which promises to obtain the best results, taking into consideration the preliminary conditions and the expected goals (Zumeta, 2000).

Facilitative Mediation

The first type of mediation called facilitative or facilitated mediation was developed in the 50s and 60s of the 20th century. At the time, it was the only type of mediation taught and practiced and it had much in common with courtroom procedures. This type of mediation clearly features a continuity with law as a system of problem resolution, especially regarding its toolkit. The primary objective of the facilitative mediator is to assist the parties in reaching a mutually acceptable resolution as soon as possible. Emphasis is placed on the parties' active participation in finding a solution and keeping the costs as low as possible. Emotional issues behind the possibly arising problems were not at all addressed at the time. Therefore, only those agreements proved to be long-lasting where all the interests of the parties could be brought to surface during the mediation process and where emotional dimensions played no part in the mediation. Such may be economic, human resources and business-related cases. In the course of the facilitated procedure the mediator structures the mediation and establishes its framework. Through his or her questions, the mediator seeks to reveal the interests of the parties behind their positions and aims to assist the parties in analysing the situation and in mutually working out options to resolve their conflict. The mediator does not make decisions, neither does he or she express own opinion. His or her only objective is to enable the concerned parties to become agents in the resolution of their own conflicts and to develop their own opinions and perspectives. This way the attorneys of the parties would have less influence on the procedure and its outcome. In facilitated mediation the parties

are in the same space as the mediator, and from time to time they negotiate separately thus suspending the joint communication process with the mediator. In the beginning, facilitated mediation was the type of mediation applied in voluntary mediation centres. Voluntary mediators received no professional training, neither did have exceptional communicational skills or self-knowledge. Due to such deficiencies, this early type of mediation could not address the individual's own world in a conscious and direct way any differently than earlier court procedures. At the time, however, this was not the objective of mediation and neither did it have the toolkit necessary to that end. Nevertheless, it was obvious that this type of mediation was not capable of handling the difficulties emerging between the parties during the process, and the mediators had no tools to facilitate the representation of the agents' own worlds.

Evaluative mediation

In the evaluative mediation the mediator is usually an expert on the specific topic. The parties seek to identify different solutions that they can accept, and the mediator forecasts the court outcome of the solutions suggested by the agents. The mediator, in cooperation with the parties, comes up with solutions that are acceptable to the participants and would be accepted at the court as well. The mediator is therefore the agent who, using his or her expertise, can offer possible solutions, while the parties merely answer in the affirmative or in the negative depending on whether they can reconcile the offered solution with the concepts of their own worlds. In this type of mediation process the mediator deals with the legally enforceable rights of the parties rather than with their interests and needs. Evaluation takes place based on legal concepts and fairness. Evaluative mediators decrease the amount of time necessary for resolving the conflict by predicting the probable outcome of the parties' approaches represented by their attorneys at court. To put it differently, the parties quickly and cost-efficiently purchase a legal resolution that will certainly be accepted at court. As parties do not disclose their real needs to one another, the mediators meet the parties in separate meetings and there is no common mediation space to speak of. This practice of the mediators moving to and from between the separate rooms is called 'shuttle diplomacy'. The term was first applied to describe the negotiation technique adopted by Henry Kissinger in the 1973 Yom Kippur War, referring to the physical movement of the mediator (Kenneth, 1999). As the real needs are not addressed in this type of mediation, the parties, their attorneys and the mediator focus on finding a legally acceptable resolution. In such cases the me-

diator is usually an attorney specialised in different industries such as banking, construction, and so on.

Narrative mediation

The principles of narrative mediation were worked out in the 1980s by Australia's Michael White and New-Zealand's David Epston (Winslade, Monk & Cotter, 1998, 21-41.). Initially, it was their dedication to the ideas of social constructivism that inspired them to develop the narrative method. They sought to understand the filters of their subjects used to represent facts while narrating their subjective stories. In their narration, the agents reveal their own worlds with the emotional load they experience at that moment and they reconstruct facts as precisely as they can. The main advantage of this type of mediation is that the mediator has the agents literally tell their stories, which allows all concerned parties to see each other's whole own world rather than a fragmented one. During the narrative mediation, the participants narrate the conflict and the relating events as a story. They include all the details that they find significant and their thoughts and reflections on the events as they occur in their own worlds. On the one hand, the story is the succession of events, facts and data, and on the other hand it is the context in which the narrator places it. Individual narratives fit into or connect with greater social contexts, which, in turn also connect to context and stories shared by entire cultures. The agents interactively develop, modify, shape and mutually change each other's narratives (Cobb, 1994). Storytelling as a metaphor may be successfully utilized to normalize the atmosphere between the parties. Through this projection the heroes of the tales can clarify the cause and effect relations, the boundaries of the characters' responsibility and competence. They will gain insight into each other's perception and emotions as well as on how they perceive their projected own-world problems. The atmosphere of storytelling naturally eliminates the issue of responsibility, therefore once their own stories have been told, the participants may jointly construct a new, common story where the emphasis is not on finding who is responsible for what happened. The new story lends a new interpretation to the conflict which may result in the participants' being able to find a solution. The narrative model is based on the perspectives of the participants as determined by their social and cultural context rather than on absolute objectivity. These different perspectives, or, as followers of the narrative mediation put it, different truths, are used to confront the parties; consequently, it is demonstrated that certain truths are valid only in certain contexts. Through the storytelling,

clients apply more and more control in their narratives when they perceive the other party's own world as it takes shape in the tale, and this, in turn, will affect their decisions in real-life conflict resolution (Wylie & Pare, 2001, 153-172.). In this model, the language, in which the stories are narrated, plays a crucial role. Words not only describe events and actions, but also construct those. According to social constructionism, language is a type of social action (Winslade & Monk, 2000). Narrative mediation considers both content and process as part of the overall decision-making system and it does not try to separate them in the practice of mediation. The narrative approach places substantive issues as a secondary aim; its primary focus is to settle the relation of the conflict parties. Story-telling reveals not only the perspectives present in the stories of the other, but it also discloses in one's own story how the narrator rejects and neglects the other party and sheds light on the related emotional background. Fundamentally the narrative model is not far from the transformative mediation, as settling the relations between the conflict parties is important in both approaches. This, however, is achieved not by direct communication between the parties but through projective techniques borrowed from psychotherapies, which narrows down the possible field of application. The narrative approach can be best used in resolving conflicts arising from cultural differences which can be minority-related problems or issues centred on migration. This type of mediation can effectively address socially or culturally motivated personal dilemmas, stereotypes, prejudices, discrimination. This technique was applied when the survivors of the Holocaust and their descendants met with the descendants of Nazi war criminals and it is often used in mediations involving immigrants in Australia, New Zealand, Canada and France. While narrative therapy and family therapy quickly gained recognition, the mediation technique which operates on similar principles never became very popular in Europe.

Transformative mediation, or mediation meets PTC

In the transformative type of mediation, the parties themselves define the goals they wish to attain during the process and the task of the mediator is to support the parties in their doing so. The basic principle of the transformative model is that by strengthening their self-confidence. The authors of Transformative mediation call this process *'empowerment'* (Baruch, Busc & Folger, 2005). Conflict parties will have the capacity to recognize their own and the other party's real needs, interests, perspectives and values. Bush and Folger call this process *'recognition'*. In this type of mediation, conflict parties become agents accord-

ing to the definition of PTC. The parties will recognize and resolve the problem together, in the common mediation time and space. The goal is to transform the present condition that is not acceptable for either party in a way that would be acceptable, implementable and sustainable in the future for both parties. In the process of transformative mediation, the perspectives of the agents may change several times which allows the parties to recognize the interests and needs involved. We talk about a shift when the agents seek to understand the position of the other party, which in turn may generate a new shift in the mediation process. These shifts help the conflict parties transform and re-evaluate their own world and understand the present conditions of the problem. This transformation aims to eliminate the most possible misunderstandings, unnecessary information and intentional – not real, fake – emotions existing in between the conflict parties' own worlds. This huge amount of fake and unnecessary information often contributes to the development of the conflict and is rooted in the earlier relation of the parties. As long as the agents' own worlds are not connected at least partially, forming an intersection of the two worlds that would allow the parties to share with the least possible loss their perception, experience and beliefs of the past, or, to put it differently, the reflection of the problem in their own worlds, no relationship of trust can be forged between the parties, and thus the conflict cannot be resolved. The agent - here are treated only individuals -, as the one prepared to resolve the problem, may only become able to solve it, if the emotional relationship between the parties is restored in an optimal range (Horányi, 2007). In this range the agents reach a state of balance where their intentional perception of the other party does not trigger emergency signals in the nervous system. Consequently, they can make decisions regarding the problem in an optimal neurobiological and physical and thus, mental state. In other words, this process marks the recognition of the other party, the acceptance of or reconciliation with his or her person to a certain degree at least, compared to the pre-mediation phase. Of all the mediation types existing today, transformative mediation is the one that provides the most sophisticated protocol to facilitate this kind of communication process. The empowerment of the parties is accomplished through the amplification of their shared successes and positive experiences in the past (Cobb, 1994). Thus, parties do not acquire new skills during the mediation process; rather, mediators stimulate the ones they identify in the parties' own worlds by having the parties recall or reiterate past experiences when they successfully applied the skills they already had. The resurfacing of such positive examples reactivates the agent's capacity to perceive the problem as something that can and needs to be resolved. This process induces progressive thinking and operates as a source of self-confidence and harmony for

the agent. In this phase the problem is separated from the problem bearer. The agent will not identify the other agent with the problem any longer, but recognizes his or her interests, needs, right to exist and thus will be able to communicate with them as their equal partner in resolving their conflict. This process may appear so self-evident that the conflict parties wish to get it over with early in the mediation session claiming they are intelligent enough or pressed for time or otherwise busy and they seek to find a shortcut. However, the mediator must guide the parties through the mutual exploration of the conflict-related emotional parts of their own world. This process often brings about emotional outbursts, doubts, fears, negative thoughts, future projections denoting a deterioration of the relationship. But if this process can bridge the gap between the parties, they often abandon their positional stance and start working on a joint resolution. Practical experience shows that mediators must address the agent's relation to the problem on an emotional level first: this holds true for all types of mediation, including business or workplace mediation processes. It seems therefore that manifesting and channelling emotions that connect to past events is a precondition that enables participants to develop reasonable resolutions of the problem. By channelling means the dynamics perceivable in the process of manifestation, which leads to an emotionally balanced state.

From this aspect, transformative mediation is the latest and most developed type of mediation which integrates a new dimension that so far has never been accessible in official procedures – even though this dimension, the participants' own world, is transformed by the agents before it becomes accessible. In the next chapter I will interpret the accessibility of the agents' own world in the light of PTC and I will discuss how it can be accessed during the mediation process.

The accessibility and transformation of the agents' own world

The agents involved in the mediation protocol can partly recognize and articulate the interests and goals that belong with their own world during the process. The previously discussed mediation types (facilitative, evaluative, narrative) had no access or only partial access to the agents' own world. The facilitative and evaluative types allow a rational approach to the conflict, while in narrative mediation participants act as outside observers. Be that as it may, none of the above types allows the conscious, real-time representation or manifestation of the parties' own world. However, in transformative mediation the agents' own world can be accessed and transformed by the agents. The phenomenon

becomes clear once presented in the framework of PTC. The objective of the process is to enable the agent to access the information and/or unused capacities in his or her own world. The agent explores, reinterprets and updates the information and activates the skills and competences as relevant to the current situation. Upon entering the mediation process, the agents experience insecurity and incompetence. They are concerned that they may not be able to resolve the problem and their concerns are posited in their own world as negative entities, as personal failures or shortcomings. This process is usually reinforced by the other agent, who interprets his or her own tension over the unresolved problem as the other agent's fault and links it to the other's personality while simultaneously projecting it to himself or herself and to the other party. The cultural context we live in also verifies this process since the systems of problem resolution do not differentiate between agents and their actions. Erroneous action stigmatized the actor as a defective individual. Historically, the first reaction was the separation of such individuals, which later became the dominant method. By blaming themselves, agents also degrade their own skills that could help them recognize and resolve their problems. It does not pose a problem in the case of other problem resolution protocols, such as legal procedures. There, parties form a partial coalition with their legal representatives, therefore it is not necessary for them to descend into their own world and to explore their problem-specific real interests and needs. As the agents have no previously acquired patterns of how to access their own world, these efforts often mean that they must step out of their comfort zone and leave it far behind. There was no code that would have represented for the parties the access to the entire own world as a secure and legitimate process. By code I mean the system of behavioural codes that in our cultural context could have made the recognition of interest related to the individuals' own worlds a universally accepted system. Law never made it necessary: what lies in the intersection of law and of the interests and needs of the own world is an intention that can be described in terms of logic: to maximize the profit gained and to diminish the goods of the other party, and the execution protocol was determined by the categories of law as an institution. The intersection of the interests of the own world and of the possibilities of law as a problem-resolving system is rather small if not non-existent, because legal requirements and the needs of the own world cannot or only partly can be satisfied in the same way. The agent participates in the transformative mediation as one who recognizes and resolves the problem. The framework of the problem resolution is provided by the common own world of the agents where an indefinite number of outcomes are possible. However, as the agents have no reliable behavioural pattern to follow, their own world, in relation to the prob-

lem, often remains inaccessible. Because the agents often attribute the problem or the negative aspects of its resolution (pain, loss, sacrifice) to their erroneous or faulty behaviour. Consequently, they shift their focus from the best possible solution to their own personality, which further reduces available resources during the mediation process. Fully accessing one's own world in relation to the specific problem is of crucial importance in the mediation process. If the own world cannot be accessed, then the agent will not be able to disclose it to the other party therefore it will not be part of the constructed common own world. Consequently, even in a best-case scenario, the agreement cannot or only partly can be reached. (In most cases, these agents fail to reach a resolution, and the process comes to a halt.) For the agents to perform their problem recognizing function, they do not need to observe the rules of law or of any other external system; instead, they must have their own problem recognizing tools reactivated. This explicit process may not help develop the mediation agreement, but by granting a deeper understanding of and better access to the own worlds, it certainly helps the agents to adhere to the agreement in the long run.

Access as a participatory term is defined as follows:

'*By the perception of the agent we mean data, accessible through sensory modalities. These data form the input for the agent's interpretative activity. These are private data, which means that they obtain their meaning within the agent's own world. These sensory data are remarkably similar in the case of agents belonging in the same community, because the framework of interpretation (which means a certain type of preparedness) is identical for the agents belonging in the same community. It is this very similarity based on which we may speak about the common world of experience. This common world is not merely the sum of the agents' own worlds*' (Horányi, 2007). Only the agent can perform the integration of his or her private own world into the common world. It is crucial that the integration or transformation of the own world into the common world be performed with the least possible loss. Data and information are lost when transferred from the agents' own world into the agents' common world. During transformative mediation, the agents therefore must have enough time at their disposal and the rhythm and intensity of the process must be tailored to their needs. During the transformative process, the agent, in the physical presence of the mediator and the other party, walks his or her inner path in the realm of fears, emotions and reason. While the agent is walking this path, problem-related private feelings, emotions, beliefs, fears and thoughts will surface in the

agent's own world. Some of these, shaped by the agent's consciousness and reason, will be rationally articulated in the common world. The agent reaches a point where he or she can review their own, transformed needs related to the problem, and these needs will always be manifested differently than they were at the beginning of the mediation process; even though their argument often remains unchanged, it will be expressed in a way that is understandable or more understandable for the other agent. What explains this change is the nonverbal communication that takes place in the mediation space. Experience and observations show that if the participating agents share the same cultural background, nonverbal communication – unlike rational, verbal communication – takes place without any transformational loss. As the agents transform the problem-related part of their own worlds, they rationally or consciously formulate their meaning, but at the same time, they also communicate and exchange information via unconscious, nonverbal channels. While in verbal communication the agents exercise control over the information they let out, they cannot control nonverbal communication or only for an insignificant amount of time. Information exchange via the nonverbal channel varies in intensity in accordance with the extent to which the agents reinterpret their own worlds. The two communication channels are in correlation, they reinforce or weaken one another depending on the feedback the agent receives during the mediation process. Feedback is first provided by the mediator; he acts as a guide during the mediation and he determines the basic rules of behaviour. Therefore, the preparation of the mediation process, the creation of the physical space, the welcoming of the agents and the opening of the mediation session are all of crucial importance. The mediator finds and uses his or her own voice when opening and conducting the process, which marks a harmony between the mediator's verbal and nonverbal communication and shows that the mediator is a credible person. If the agents[2] sense both verbally and nonverbally that they can abandon the patterns of formal communication usually applied in other problem-resolving platforms and they can opt for a more colloquial way of communication, then they will follow the patterns presented by the mediator. It seems, however, that for this condition the synchronized verbal and nonverbal behaviour of the mediator is a prerequisite. The transformative process only starts if the agents sense that they can perform the task at hand with their already acquired skills, capacities, and preparedness. Early in the mediation process this is hardly the case since mediation is usually not applied in the phase of early problem detection. Mediation is often preceded by a history of unsuccessful communication and failed legal attempts at resolving the conflict. In this phase the agents experience a loss of trust both in themselves and in the other party. This sensory state of con-

sciousness can be characterized by rejection and closed communication. The first step of the mediator is to open the closed communication patterns and to provide new behavioural patterns to the agents. If it is done in a plausible way, then the participating agents will follow the mediator along the way. They will accept the framework and the protocol. During the process, the mediator indirectly helps the agents accept the other party. Disclosing their own worlds mutually affects the agents and they will increasingly accept the other party as their partner in resolving the conflict. This means that the agents will understand that their partner is not identical with the problem, he or she is not the cause or the only bearer of the problem. Thus, cooperation will be restored which, in turn, will allow the agents to start working on a joint (coalition) resolution. This process of empowerment helps and leads the agents to oversee the problem and to share this process with the other participant.

The communicational aspects of mediation

Mediation as a problem resolving protocol can be characterized by several aspects. Its communicational aspect greatly varies from type to type, but basically there are two major groups: one is the problem solving, the other is the transformative type. If one separates these two and characterizes them along the principles of PTC, it shall become clear that transformative mediation is a new, more developed form of mediation practice. In the next sections these characteristics shall be introduced.

Distinctions between the Transformative and Problem-solving types in the light of PTC

The two largest groups, the problem solving and the transformative mediation, require the most disparate logical approach from a participatory aspect. Problem solving types are the facilitative, evaluative, narrative types and any mixture of these methods. The main feature of this group is that here the goal of the mediation process is nothing but the resolution of the problem, manifested in a written agreement. To attain this goal, the participants have two or three sessions at their disposal. Therefore, the method focuses on the elimination of a problem that is clearly stated from the onset rather than by the agents themselves. These types of mediation processes concentrate on the problem that is presented in advance, in no more than a few sentences, but they do not investigate how the problem

had evolved or how it had affected certain areas of the agents' own worlds. If we define the problem as a temporary state with a definite time interval where the beginning is the problem formation and the ending is the problem resolution, then we can say that problem solving mediation types only focus on the outcome and they attempt to minimize the amount of time the participating agents have to spend in this temporary state. By doing so, these protocols implicitly reinforce the negative sensation of the transitory period in the agents. The mediator exerts his or her influence not only on the process, but also on the content thereof, emphasizing resolvable issues while paying less attention to more complex or difficult ones. In order to facilitate the agreement, the mediator consciously or unconsciously influences the parties, although it appears that the decision and the control over the process is in the agents' hands (Macary, 2008). In the transformative mediation the mediator makes good use of this transitory period (i.e. until the change takes place) when the parties feel insecure and distressed: he reaffirms the position of the parties as agents and empowers them so that they have the preparedness to recognize and resolve the problem. The mediator acts as a leader, but the control over the content of the process remains with the parties thus emphasizing their position as agents (Baruch & Folger, 2005). Transformative mediation seeks to place the agents in an emotional and mental state which allows them to resolve the current and future problems together in an open manner, taking the other's perspectives in consideration in the scene of their shared own world. The agreement is only one of the process outcomes. Transformative mediation does not view the problem as an emergency which is to be eliminated, and the sooner it is done, the better. In the process, the parties are regarded as agents while the mediator understands that they cannot always function as agents. Therefore, the mediator applies such empowering communicational tools that help the participants to function as active, competent and conscious agents.

The dynamics of mediation and how it is to be influenced

The dynamics of the mediation process can be easily interpreted and followed by an experienced mediator, since it strongly correlates with the communication between the parties and with their verbal and non-verbal reactions to content questions. Consequently, the mediator has a great deal of control over the mediation process. The questions asked, the paraphrases and summaries of the statements all create clearly defined changes in the dynamics of the mediation. These changes significantly modify the content of the verbal communication. Changes in the agents' communication can be traced back to changes in dynam-

ics first and the agents will carry over these changes into the content of the dialogue. The chronological description of the process dynamics starts with the so-called '*levelling the playing field*'. The mediator strictly controls the timeframe: both parties have the same amount of time to present their interpretation of the problem. If either party exceeds their timeframe the mediator asks them to stop. If either party finishes the presentation before their time is up, the mediator asks questions to ensure both parties can present their perspective to the full. This is a key point in mediation dynamics. If the empowerment had been successful, then the disclosing and resolution phases of the process will have balanced dynamics as a point of departure. If the playing field is not levelled and the dynamics between the parties is not compensated, then one of the parties will explicitly dominate the other, mainly in the scene of nonverbal communication. This dominance often developed between the parties years before the mediation process, either because of the problem to be mediated or due to earlier disputes. The levelling out of the dynamics between parties may take place before, after, or during the empowerment of the agents: these processes are very often mixed up in time, and the chronological order is irrelevant. The next step of the balanced (compensated) interpersonal process also reflects the agents' dynamics: while representing their own world in a self-identical manner, the agents will respond to the representation of the other participants' own worlds. This is called the discussion phase, when communicational dynamics is not expected to level off, nor should it, at this point of the mediation. On the other hand, the mediator seeks to secure the connection between the agents and their own worlds. To put it differently: the dynamized agent can compare his own world that only he or she can access with the own world of the other agent, under communicational – mainly emotional – pressure during the discussion phase of the mediation process. At this point the agents may comprehend the other parties' own worlds, yet they do not show willingness to change their own worlds in any way. The mediators encounter this phenomenon which, in terms of dynamics, seems to be a total loss of energy. It looks like the parties give up ~~on~~ the possibility of reaching an agreement, because they appear to recognize the yawning gap between their own worlds. This situation marks a turning point in the mediation process. It is often characterized by silence, stillness, rejection or even hostile non-verbal communication. But this is a time when the agents explore their own world in depth. During these long minutes of introspection and lack of verbality the own world is undergoing significant changes, as the agent is taking into consideration the other agents' representation of their own worlds. This is the point in time when mediators can rest assured: it is very likely that an agreement can be reached. Why? Simply because the agents have started to

reconsider the perspectives of their own world that hitherto seemed rock-solid and unshakeable. Lack of speech and non-verbal communication are the tell-tale signs of the internal reconsideration, of the letting go of past emotions and stances; conscious thinking starts making room for changes. By this time the parties had spent together one and a half or two hours which is enough for the agents to experience the atmosphere of security both consciously and neurobiologically.

So, dynamically speaking, this frozen state is of crucial importance where the mediator's task is not to lead but to follow the process. The agents must be kept in this phase if necessary, until the agents realize that the time has come for them to make a change in the part of their own world that is related to the problem. If any of the agents makes an offer towards that change, the others will follow suit. Dynamically the process transcends the defence of the own world and moves towards the construction of something new. Once the parties have reached this stage, they will mutually strive for an agreement. From this stage on, the parties will be dynamizing one another with their offers which is an expression of rebuilding trust. It may even happen that the mediator needs to reduce these new dynamics in order to ensure that the agents will only make reasonable offers that can be fulfilled in everyday life. The agents oftentimes recognize that what they had in common was nothing but the fear to leave their old own world: they were trapped in the past. The parties usually articulate such sentiments in the final, closing phase of the mediation.

The scope and rules of mediation

Mediation may not resolve every problem either as a problem-resolution protocol or as a communication model. Whether it is regarded as an alternative dispute resolution protocol attached to judicial mechanisms or as a communication process, its scope and rules can be clearly defined. These are the conditions necessary for the mediation to take place. Depending on the mediation type, these conditions partly vary.

The primary rule for both the mediator and the participating agents is that they must enter the mediation process willingly, on a voluntary basis. This rule comprises two parts:

1.) all participants are to enter the process voluntarily,
2.) the voluntariness of all participants must be maintained in all phases of the process.

Agents may together decide to enter mediation before contacting the mediator, or during the preparatory phase when the mediator informs one of the parties that the other has requested the mediation. In restorative cases the mediation protocol is ordered by the court, perhaps as a manifestation of tradition. This happened in the case of a con artist who pretended to be a joiner. He took the advance money from his clients in order to buy the material then simply disappeared. At the victim's request the court ordered mediation. What the court failed to see (and was not able to see) was that the perpetrator only agreed to enter the mediation process because he wanted to buy some time: once mediation has been ordered, the legal procedure is suspended for six months. In other countries mediation has become compulsory not only for criminal proceedings but for civil proceedings as well, earlier than in Hungary. Since April of 2011 in Great Britain mediation is compulsory for divorcing couples before either party files a petition for divorce. The mediator needs to assess the parties' mental condition prior to the session. Assessment can be done by the mediator who conducts the session or another mediator who performed preparatory tasks, providing he or she participates in the process. It is a prerequisite that participants may not have any dependency or addiction that can lead to bipolar disorder. This means any form of psychiatric treatment or any therapy that treats addictions. It can be drug, alcohol or gambling addiction. Such mental state potentially leads to bipolar disorder where agreements reached in one episode may be rejected in the other. Also, individuals experiencing a mental state that – albeit not requiring medical treatment – may cause for a short period of time (maximum a few weeks) extremely strong emotional, distress like bipolar or multipolar disorder are not allowed to enter mediation. Such mental state can be, for example, unprocessed grief, which radically changes how individuals perceive their environment. People often re-evaluate inheritance agreements after the grieving process. In such cases mediation can be considered only when the altered state of consciousness is over. Mediation can only be applied if all concerned parties who have influence over the future adherence to the agreement are present. If it is revealed after the mediation has started that any of the concerned parties is missing, then they must be involved in the next session, if all other parties agree. For example, the ex-wife, who must give her permission before a child can be taken abroad, or any of the parents the concerned party is dependent on, or a senior manager whose permission is needed to conclude an agreement in the mediation process. Mediation cannot be applied in cases of domestic violence or in any other case of violence, where the victim is dependent on the perpetrator during the mediation process.

Participants, either separately or together, may decide to terminate the mediation in any phase. It is important to know that this does not mean that the

mediation process itself was a failure; rather it is a sign that parties can continue negotiations without a mediator, or they understand that other needs must be satisfied before their conflict can be resolved. For example, one of the parties needs to understand more his or her own world and goes into therapy, or a couple decides to go into couples' therapy. But such needs can be identified at community level; in such cases an entire department at the workplace may decide to participate in a team-building training. These needs may be addressed by another professional. As mediation can work as a black box in case of divorces for the legal system, so can couples therapy work for mediation. It is usually the mediation process that helps parties understand that the scene of communication needs to be changed. This is true for transformative mediation only; the logical and practical protocols of other mediation types give no room for such considerations. This recognition, in many cases, facilitates the resolution of the problem, simply because dispute resolution systems (law, mediation, etc.) are not omnipotent and may not offer the best solution for all the problems articulated by the agents. This is particularly true when the problem-related parts of the agents' own worlds have been transformed into a common world: once this process is complete, the agents can shift perspectives and can identify the root cause or the best possible solution of their problem from a different angle. Mediation can offer help in such cases when communication between the parties has been blocked or has completely broken down. It is very important that mediation cannot be applied simultaneously with other protocols: for the duration of a legal procedure or therapy, mediation needs to be suspended. Simultaneously applied protocols reduce efficiency as they have different scope and objectives. An attorney who seeks to maximize profit can hardly cooperate with a mediator striving for a win-win situation, even if the win-win situation means that both parties must give up something in order to reach an agreement.

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József Pallo

The Effects of the Trianon Peace Treaty on the Development of Corrections in Hungary

Abstract
The Trianon Peace Treaty had a profound effect on the social and governmental structure of Hungary. These changes of course also influenced the field of corrections and actually altered some of its key aspects as well. The author will recall several key penological concepts and ideas from the era to provide an introduction to the philosophical foundations of the establishment of correctional legislation and the resulting substantive changes that occurred. Moreover, a detailed analysis will be provided on the system of enhanced severity workhouses, an emblematic punitive measure that addressed the unfavourable criminological tendencies of the 1920s, that emerged as consequences to the Trianon Peace Treaty. The essay will conclude with deducing the generalized historical, legal and moral lessons and conclusions pertaining to this peculiar period of Hungary.

Keywords: Hungarian corrections, penology, independent field of law, legal classification, correctional infrastructure, employment, enhanced severity workhouse

A Prelude to the Corrections in Hungary During the 'Happy Years'

Since 1880, the 30 years that marked the coming into effect of the Csemegi Code can be considered a fortunate period in the history of Hungarian corrections was helped by the joint endeavor to catch up to the developed civil societies, the economic conjuncture and the increasing amounts of correctional writings. While towards the 19th century, correctional science or penology mostly addressed topics related to the infrastructure, security, technical (all in all: '*less legal*') issues, by the end of the 20th century and as a result of the positivist school, the main goal of the deprivation of liberty has become that of personality-based prevention. Social sciences opened up to welcome the new scientific dimensions of

psychology, pedagogy, sociology or criminology. As a result of several reform directives, professional literature enjoyed increased interest, with several significant experts of the era like Jenő Balogh contributing to the susceptible reform initiatives of the correctional system (Balogh, 1910, 17.). Following the turn of the century, a large variety of important works were published, which represents the new science's expanding horizon: Károly Vajna processed the history of the tools and methods used as sanctions in Hungary (Vajna, 1906, 124.) and István Megyeri provided a detailed description on the operation of the early prison systems (Megyeri, 1905, 56.). The boom that was apparent in the field of correctional science during the beginning of the new century also outlined two different concepts related to the nature of the science itself. According to the first one, the new field was considered a social science encompassing knowledge related to various other fields such as philosophy, criminology, sociology and public administration. The other concept – through the works of Ferenc Finkey – propagated that correctional science was basically jurisprudential in nature, namely the third branch of criminal science. Following the footsteps of Freudenthal and Krohne, Finkey worked towards making others realize that inmates have a legal relationship with the state itself. He claimed that the reason for the relatively slow development apparent in the field of corrections can be attributed to the neglect its legal control had suffered before (Finkey, 1904, 32.). A widely acclaimed achievement of the Code – besides the regulation of the correctional field through ministerial decrees – was undisputedly the prison construction program, one of the most significant initiatives of the era. The condition of the framework of prisons as inherited in 1867 was incapable of realizing the sanctioning principles of civil societies, thus it came as no surprise that the realization efforts of the Csemegi Code also involved the nationwide construction of new prisons. In 1881, the Hungarian legislation decided on the establishment of the Szeged Royal Regional Prison, which was constructed between May 1883 and 1 January 1885. Act no. 20 of 1884 further decided on the construction of the Sopron Prison, which was completed by August 1886. The third modern correctional institution was the Budapest Prison, completed in October 1896. The architect of these three facilities was one of the most prolific experts in contemporary Hungary, Gyula Wagner. These three new prisons were faithful representations of the state-of-the-art prison construction concepts. Szeged and Budapest served as the premises for a groundbreaking solution of the 19th century, namely the star-shaped design, which Wagner – due to the attributes of the old sugar factory – could not follow. Nevertheless, he still made efforts to utilize the achievements of modern prison architecture here as well. Besides the nationwide constructions, the turn of the century also witnessed

the renewal efforts of the construction of the network of courthouse-adjacent detention centers. The constructions were similar in a sense since contrary to the planning of independent prisons, these detention facilities were situated in the same blocks courthouses operated in, serving as 'backstage' to the judicial bodies. The logic behind this arrangement was clear: the judge, the prosecutor, the court apparatus and the accused could gather in a simple, yet secured way, without unnecessary disruption from the public. Hanging corridors were widely used in cell buildings, which was no different from the wing of a star-shaped prison section. These facilities (originally of local jurisdiction) comprise the majority of today's prison network. The establishment of these building complexes was based on two fundamental aspects. One of these is the dynamic development of the justice system, while the other is the presence of lucrative resources allowing orders to be made. The building complexes not only became the centers of regional justice, but also served as architectural landmarks, with some of them becoming actual attractions. While – based on international experiences – penal congresses suggested a simple, goal-oriented approach to the architects; justice buildings had their fair share of monumentality, uniqueness and art. By the end of the century, 9 prisons of national jurisdiction were in operation, together with 65 detention centers adjacent to regional courts, and another 313 operating alongside district courts (Kabódi & Lőrincz-Mezey, 2005, 134.). The successful efforts of the era were not only ensured by the developing material conditions, but also by competition-limited prison labor, which by then had increased in popularity due to the economic conjuncture. By the end of the century, the great question related to the contradiction between prisoner labor and free market labor was no more. By then, it had been proven that significant competition can only arise if the state had decided to employ prisoners in several fields and to reduce the prices of the products manufactured through it. A phenomenon like this, however, did not occur. On the contrary: Hungarian penal authorities made stringent efforts to introduce a wide assortment of possible jobs within prisons to ensure that prisoners were employed based on their skill sets and qualifications, which was an important factor in lucrativity. However, competition could also be eliminated by not introducing certain products in the market and sell them to state-governed agencies (e. g. army, police) instead. One of the favorite examples of Finkey, an acclaimed penologist of the era was that of the Vác Printworks, which produced all the justice-related documents, or the fact that the uniforms and equipment of prison service personnel, soldiers and policemen were manufactured through prisoner labor. Handcrafts offered a wide array of possible job alternatives. In his book, Megyery lists 20 industrial trades (cobbler, webster, copper, tubber, lather, smith, tailor, printer,

brush maker, basket weaver, rope maker, mason, bookbinder, gardener, painter etc.) Besides this, so-called internal or domestic employment (cleaning, cooking, laundry, maintenance etc.) and external (mostly agricultural, such as grounds keeping, sewage management, road construction etc.) served to further widen the options for the prisoners. Such a wide spectrum of course also resulted in a significant profit (Megyery, 1905, 297).

The Effects of the Positivist School

States wishing to protect public order and security started turning towards a more modern penal approach that utilized the credible scientific achievements of anthropology, psychiatry and sociology. The representatives of the positivist school were the first to provide a professionally grounded and convincing knowledge related to the origins of crime and criminal behavior. The originally intended goal of sanctions, namely to restore the balance in the damaged legal equilibrium that followed offences was no longer valid, since several other aspects, such as the need for efficient prevention (the active protection of society through discovering the reasons behind crime and thus the elimination of criminal enterprise as a whole) started gaining the upper hand. This aspect paved the way for further developments, such as the one that dictates that human will as a whole be influenced by three, so-called 'spheres' (sociosphere, biosphere, psychosphere) that have a complicated, dialectic and interlinking relationship among them. This – in the field of penal science – led to the recognition that a deficient individual can be corrected through these three spheres. '*They have to be corrected and educated until the threat of them committing another offence subsides*.' (Lőrincz, 2015, 455.) The concept of changing one's character (or nature, or, as Finkey writes '*fundamental character*') was subject to heated debates, resulting in the fact that penal science finally accepted that irreparable criminals exist. While Finkey accepted this as a valid argument, he was convinced that it simply cannot be fully integrated into penal science, since it would mean that another argument stating a general truth (the need for lifelong learning and development) would contradict it. Beyond one's mental capabilities, nature can also be developed. Refusing to shape one's will, would be ethical nihilism (Finkey, 1922, 74.). In accordance with the aspect taken by Elemér Kármán, Finkey believes that education as a measure to correct an individual should find its source in the values of civil society. '*…the supreme ethical ideal is the ideal of the perfect human, who strives to understand and internalize all that is good, true and fair and who strives to satisfy a stringent moral code. Those of sane mind have the ethical obligation to strive for this perfection be-*

cause all of us are capable to do so.' (Finkey, 1922, 77.) Finkey believed that prisons have a limited capacity to address ethical deficiencies: '*True and honest repentance, the complete alteration of one's character and thus total transformation is – even in prison standards – but an ideal, which rarely comes to fruition*.' He acknowledged the fact that while education towards good is not the task of prisons, it is still possible to train one's mind and body and to facilitate the ethical development of prisoners within the walls. Complete ethical transformation is not a viable goal in this case, but inserting the term of education to the equation helps to underline the related efforts: '*in my opinion, the most idealistic goal of executing a given sanction is education itself and with the exception of death penalty, all sanctions serve as tools with which the state would like to express a certain influence partly on society as a whole, and partly on the individual*.' (Finkey, 1922, 3.) In accordance with the arguments of Kármán, Finkey designated criminal pedagogy as the scientific background behind education (Finkey, 1922, 3.). The psychiatric treatment of the mentally ill or paving the way for the specialized treatment and education of juvenile prisoners separated from adults is also the result of the reform approach to correctional science (Lőrincz, 2015, 455.).

The Correctional Consequences of the Trianon Peace Treaty

The previously set conditions within which the correctional field in Hungary had operated before was severely maimed following the Trianon Peace Treaty. It was not the lack of institutions that posed a problem, but the collapse of the light-medium-strict regime division of the institutions systematized during the turn of the century. Following the war, Hungarian corrections lost the facilities at Lipótvár, Illava and Nagyenyed (33%), and a further 42 detention centers at regional (64,4%) and 200 detention centers at district courts (63,9%). This way, out of the pre-war infrastructure, only 6 prisons, 23 regional and 113 district court detention centers remained (Mezey, 1995, 98). The post-war infrastructure consisted of judicial – regional and district – detention centers and national level prisons and workhouses. The prisons in Budapest, Vác, Sopron, Harta (Állampuszta), Márianosztra and Szeged were of national jurisdiction. As an effect of the anthropological reform initiative, the Budapest Prison also operated a laboratory dedicated to criminal anthropology to study the anthropological and psychological characteristics of delinquents. Well-equipped prison hospitals were in operation in the Vác and Budapest facilities. The National Museum of Corrections was established in 1922, with the Tauffer Library following suit in

1925, as the result of donations from the inheritors of Emil Tauffer (Szöllősy, 1935, 99.). Considering the dramatically increasing criminality during the post-war poverty and the temporary confusion within prison management, the Hungarian correctional field had to face exceptional and unique tasks. The number of arrests doubled when compared to the dismembered territory of the country, rendering the facilities overcrowded (within the new borders, more than 14.000 people were incarcerated while the pre-war amount on the same given territory was around 7.700. Conditions worsened as the result, leading to nutritional problems, the lack of clothing material, inadequate heating and the terminal fatigue of staff members. These extraordinarily harsh conditions slowly faded out from the beginning of the 1920s, due to the economic consolidation that began (Mezey, 1995, 99.). The legal environment surrounding corrections did not change significantly following the war. The government – following the ideals of continuity – did not initiate any sort of repeated regulations, but tried to adapt to the new situation in the topics of prisoner employment, the treatment of juvenile prisoners, the healthcare of convicts, the classification of prisoners, post-release care, staff selection and order and security.

The main characteristic of prisoner employment

Following World War I, was the profile change from industrial to agricultural. Agricultural enterprises enjoyed a favorable situation since Hungary, which had lost its industrial centers, slowly shifted towards being agriculture-centered. The fact that almost 40% of the prisoners were of agricultural background was also a significant contributing factor to the shift. In 1919, the justice sector restructured the Harta Exchange Prison to a national exchange institution and placed convicts capable of performing agricultural work. Since Harta only had 233 acres of government issue property, they leased the nearby Miklapuszta property with its 2.406 acres of area for the purposes of prisoner labor. (17.385/1920. sz. IM r.). By the end of 1919, a new department was established within the Ministry of Justice that – due to the severely bad fiscal situation of the state – rented 250 acres for the Balassagyarmat facility (1922), 1 034 acres for the Nyíregyháza facility (1923), 1.520 acres for the Budapest facility (1926) and 647 acres for the Besnyő and Harta institutions (1926). Following the war, the total cultivated area increased from 233 to 7.100 (Szöllősy, 1935, 52-53.). The alimentation of court detention centers was restructured upon grounds similar to the national jurisdiction penal institutions (3063/1921. sz. IM r.), with prisoner garden plots to ensure the supply of raw materials.

Regarding the corrections of juveniles

It can be said that in the 1920s, courts issued an average annual number of 600 – 700 sentences involving deprivation of liberty, with 80% of these being under a month's length. The low number of convicted juveniles was housed in three regional detention centers: Nyíregyháza served as placement location for boys sentenced to longer terms, while the so-called Pest Area and Pécs prisons housed girls and boys with less than half a year to be served. The enclosed section of the Nyíregyháza prison offered handcrafts (e.g. carpenting, tailoring, shoemaking, brushmaking) for around 40 convicts, with another 50 being employed on the fields located in the outskirts of the city. Juveniles were also provided with an opportunity to participate in formal education (Szöllősy, 1935, 143.). Early prison conditions had differentiated opportunities to address the hygiene and health of prisoners. Strict and medium regime prisoners could spend two, light regime prisoners could spend one hour open-air each day. On feast days, guards had the convicts under 30 perform several exercises. Upon admittance, the physician examined every convict in a detailed manner and recorded the results. The physician also supervised and checked all the areas of the facility: he inspected the cleanliness and ventilation of the rooms and checked the shower areas. He also examined the sick and upon necessity made arrangements for their placement in a hospital. He also had a say in the quality and quantity of food the prisoners received (Szöllősy, 1935, 173.). From the 1920s, chronically sick (particularly those suffering from a pulmonary disease), received increased attention. In 1929, the new prison hospital of national jurisdiction was completed at the Vác Strict and Regime Prison, equipped with 18 wards, 100 beds, a laboratory, a pharmacy, operating theatre and an X-ray, coupled with open wards dedicated to those with a pulmonary disease. The increasing number of inmates suffering from such a disease resulted in the establishment of a separate and dedicated department (Szöllősy, 1935, 178.). Those suspected of having a mental disease and the actual mentally ill prisoners (or those with a precondition requiring specialized treatment such as hysteria, epilepsy) were transferred to the National Forensic Mental Facility, with the permission of the Minister of Justice. If a convict placed here no longer needed continuous screening and treatment but has not yet served the imposed term, then he or she was sent back to the prison. If the sentence was served but the prisoner still showed signs of a mental disease, the police transferred him or her to the National Asylum (Pallo, 2006, 25-26.). Special rules related to the separation and placement were utilized in the case recidivists and political prisoners. Recidivists received only the two-thirds of the allocated daily meals for four weeks, while being in

solitary confinement. During this time, they were not allowed to work and were excluded from receiving rewards and buying food items for six weeks. The situation of political prisoners was less severe: they were not placed in solitary confinement, could equip their own cells with the cell doors being open during the day and they were also allowed to wear their own clothing. They could also eat freely on their own (including a daily amount of half a liter of wine or beer) and could use tobacco products. They were not obliged to work. Their mail correspondence was supervised but unlimited and they could also welcome visitors every day (Szöllősy, 1935, 18-19.). Ferenc Finkey helped pave the way for the taxonomical classification of the education of prisoners (both general and juveniles/adults). The house rules from the era contained provisions related to the ethical support to be offered to prisoners (as in religious and spiritual care) and emphasized the importance of education and the use of the libraries. All prisoners under the age of 30 were obliged to participate in education, while those over 30 could join voluntarily (or they were ordered to do so by the chief executive in a case-by-case basis). Courses were held in beginner and intermediate classes with the option to establish a third class if the need arose. First grade students familiarized themselves with reading, writing and calculus. Second grade was about the history and geography of Hungary, coupled with basic agricultural terminology, while the third grade consisted of general geography, grammar and basic legal terms. Winter classes were held for those performing agricultural work. On Sundays and feast days, the governor, the chaplain, the case manager or another person invited by the management held lectures, often paired with presentations. Chaplains held separate lectures for the religious on a weekly basis, with libraries being managed by the case officers (educators) containing scientific literature, textbooks and prayer books. The convicts also had the liberty of being able to procure other books (or subscribe to certain periodicals) which either they or their family paid for. Towards the end of 1929, a magazine called 'Fogházújság) ('*Detention Gazette*') was published with new editions every two weeks, printed by the Vác printworks (Szöllősy, 1935, 180.). The institutions upheld their order and security plus the discipline of the prisoners through the use of security measures, disciplinary punishments and rewards. In the case of a severe disciplinary offence, guards used handcuffs, straitjackets, chains and firearms. Handcuffs were only used on violent prisoners and/or on those who resisted certain measures or attempted to escape. Straitjackets and chains were used exclusively on enraged prisoners. Firearms served the purpose of self-defense and as tools to be used to prevent an escape or to terminate a mutiny. Regarding the actual disciplinary measures, the following ones were in use: reprimand, removal certain benefits (e. g. right to written cor-

respondence or to welcome visitors, reading etc.), limiting the time available for leisure activities, solitary confinement, handcuffing, fettering etc. Corporal punishment was forbidden (Balogh & Horváth, 1983, 189.). A variety of rewards were in use besides open-air labor, reading and probation (conditional release). After serving one-third of the sentence imposed, prisoners could take care of their own alimentation and could also procure 3 liters of wine on certain days (Christmas, the birthday of the head of state, etc.), plus – if their conduct was satisfying – they could spend 6 pengő a month to procure food items (Szöllősy, 1935, 17.). The post-release care of released inmates was taken care of by civil organizations and aid unions usually connected to one institution. The members of these organizations could visit convicts about to be released to become familiarized with their life and conditions and to provide help to them or their families. Before the release of a given prisoners, prisons notified these organizations that then designated probation officers to provide post-released care to the person in question. Out of the aid budget, released offenders received aid consisting of clothing, train tickets and a maximum of 50 pengős. Offenders on parole had to regularly report to the designated police authority which also monitored their conduct and lifestyle. These offenders could only change residence with the permission of the court (Balogh & Horváth, 1983, 183.). One of the most important questions of the correctional field was the selection of staff members. Based on the records from the years 1930/31, prisons had a staff consisting of career law enforcement officers, executives, secretaries, physicians, chaplains, educators, commanding officers, custodians, totaling 94, while a total of 1 460 staff members were tasked with guard duties. Only one position was present in the case of regional detention centers: that of the detention custodian or governor, who managed the detention center under the authority of the chief royal prosecutor or his deputy. The guards were directly subordinated to the governor (Szöllősy, 1935, 415.). The correctional field started to demand higher qualifications and personnel with better training and knowledge from the beginning of the 20th century, since this was the period during which the goal from '*punishment and revenge*' shifted towards '*prevention*', making the profession all the more complex and complicated. Following a variety of predecessors, the first provisions of general jurisdiction on the qualification of staff members came into effect in 1926. On top of the general ethical and legal requirements, these provisions contained school qualifications as pre-requisites for one's entry, which means that in the case of governors and draftsmen, a law degree was required, and a maturity exam was the condition for officers and senior officers. Guards had to show aptitude in weapons handling, reading, writing and calculus, while women were expected to know how

to cook and lead a household as well. Monitoring and supervision was handled by the prosecutors in charge (Szöllősy, 1935, 390-391.). Chaplains, teachers and physicians worked for a royalty. For a Roman Catholic chaplain to become employed he had to be a certified presbyter, while in the case of the Reformed and Lutheran church, separate certificates were required. Teachers had to have a certificate in education; doctors had to possess a medical degree and a forensic medical exam. The scope of activities of the chaplain and teacher was determined by the chief prosecutor, taking into account the local conditions. Besides controlling the medical affairs of the detainees and the detention center, the physicians also had to treat the guards and their family members without extra fee. Medical prescriptions were recorded in a dedicated register. The physicians' private practice was limited only as far as they could not privately support the interruption or postponement of a convict's sentence with private diagnoses through medical recommendations. Guard staff was tasked with the direct monitoring and supervision of detainees (in certain cases, prison authorities had the right to utilize the help of the army or the gendarmeries well). The members of this staff category in the case of regional detention centers were the detention sergeant, detention guards and women detention guards. Sergeants were the direct superiors of the latter two. One of these sergeants acted upon the directives of the governing officer by managing shifts, taking care of the checks performed on newly admitted prisoners, their placement and supervision. The other was responsible for the adherence to the daily schedule and the house rules, kept order and security, managed the work ledgers, and monitored the equipment and the security devices of the facility. The guards were expected always to exert due diligence and to unconditionally obey the orders of the chief executives. On top of their daily tasks associated with their regular schedule, they were expected to return to their posts in the case of a natural disaster, mutiny, fire and escape attempts. Women detention officers performed the tasks of their male counterparts but with female offenders. If the number of female inmates was low in a given detention center, then sergeants could use the help of their wives to take care of these tasks (Szöllősy, 1935, 398.). Staff members employed by the prisons received wages similar to the ones received by state employees. The Minister of Justice had the liberty of using 10% of the net prisoner wages to finance the bonuses received by staff members whose performance was exceptional. Governors, and staff and chief executives had to reside within the prisons. Living inside was not mandatory for the other staff members, but – out of necessity – they could opt to stay there (Szöllősy, 1935, 383.). With the exception of physicians and chaplains, correctional officers were expected to wear uniforms during their service which they – along with the sword – had

to procure themselves. The goal of having them wear uniforms was to '*ensure that during service the officers remain recognizable, and to increase their authority among prisoners and also to improve their personal safety through a sidearm weapon*'. (Szöllősy, 1935, 401.)

Criminal Offences and the Resulting Sanctions in the Post-Trianon Era

Following the devastation of the lost World War I and among the damaged social, legal and national structure, negative criminal phenomena and tendencies started showing up along with an increased frequency in crime. In the 1920s, there was an increasingly strong legal argument which claimed that a hardcore subgroup exists within the category of recidivists the members of which have an extremely strong incentive to perpetrate offences, resulting in a lifestyle of crime and habitual reoffending. Legal experts of the era designated this subgroup as people whose personalities include a constant tendency to become involved in a form of criminal enterprise. The official view was that this category of habitual offenders with a high threat level is the one that poses the highest danger to public security. It was also believed that deprivation of liberty as a sanction is not sufficient since their depravity is so grave that special-preventive measures are ineffective in their case. This also meant that the protection of society required a more effective measure of indeterminate nature with the goal of pacifying the subjects, as long as the threat they posed to society subsided. This goal was only reachable through legislation, resulting in Act no. X of 1928, an amendment to the Csemegi Code[1]. This legislation addressed to large areas of criminal law: on the one hand, it restructured the system of fines, and – on the other hand – it introduced a new type of measure for habitual offenders, the enhanced severity workhouse (quasi preventive arrest)[2]. The legislation targeted those recidivists who had committed crimes against life, sexual freedom or assets at least three separate times, the last two within five years within a criminal enterprise or showing signs of a constant willingness to perpetrate such offences (Mezey, 1996, 231.). Based on § 36. of the legislation,

1 The full title of the Act: Act no. X of 1928 on addressing certain questions related to criminal justice.

2 Enhanced severity workhouses were used instead of a sanction. According to the provisions of the relevant legislation, only the minimum duration was pre-determined, the maximum wasn't, which means that it lasted at least 3 years. After these 3 years had been served, the delinquents could request their release from the Minister of Justice, on which the Minister decided following hearing out the authority responsible for monitoring the workhouse. This measure, however, could last for a lifetime as well, with prisoners being accommodated among conditions resembling that of a strict regime prison.

the procedure related to habitual offenders was the following: Instead of imposing a pre-determined sentence on the subject, the court shall sentence a person to an enhanced severity workhouse stay if he or she had committed crimes against life, sexual freedom or assets at least three separate times, the last two within five years within a criminal enterprise or is showing signs of a constant willingness to perpetrate such offences and there are no grounds for imposing a death sentence. This new regulation settled a long-standing debt by realizing suggestions from 1913, creating a more complex legal environment for addressing the situation caused by offenders posing a grave threat to the public. These thoughts and the underlying philosophy was underlined by the second amendment to the Act, which used characteristic arguments when it stated that: 'our Criminal Code's four decades of existence is hopefully enough to convince unbiased viewers to find out that its provisions do not provide a satisfying way of protecting society against habitual offenders and that this deficiency cannot be corrected through law enforcement only. It is widely known that there are hundreds of people among us with countless grave offences behind them, whose lifestyle is revolving around self-sustenance through constant offending and threatening public security, law and order. Just think about the criminals among the wandering gipsy communities! These, or the looting and murdering at Dános or several other inhumane acts already caused the public to call out for viable alternative measures. Or let us just think of career thieves, robbers, pickpockets, fencers and pimps. The Hungarian Bureau of Criminal Registry has hundreds of habitual offenders in its registry who only use their liberty time between to sanctions to commit new, gratuitously severe offences. The new legislation did not cause any debate and the profession itself generally supported it. In Finkey's words: '*During the last few decades, criminal policy talks have reached a universally supported conclusion that regular prison sentences are no longer viable in the case of career (or habitual) offenders, since these people will not be corrected through these methods. Likewise, regular workhouses are incapable of inducing any positive effect in this case. These people require specialized treatment and purpose-designed facilities*.' (Finkey, 1925, 37.) The dogmatic views on the new legislation diverge into different aspects. Nándor Gévay-Wolf said that enhanced severity workhouses can be regarded as security measures imposed in place of a sanction, which nevertheless have a sanctioning nature as well: the legal consequences they bring are similar to strict regime sentences, but are indeterminate, which makes is more like a measure (Gévay-Wolff, 1931, 28.). Oszkár Szöllősy takes a simpler, but similar approach, claiming that enhanced severity workhouses are nothing more than indeterminate strict regime prison sentences (Gévay-Wolff, 1935, 22.). When we analyze the nature

of enhanced severity workhouses, it can be stated that they can be regarded as the combination of regular workhouses and strict regime prisons. They utilize the indeterminate sentence length loaned from regular workhouses and mix it with the strict discipline and obligation to work – elements taken over from strict regime prisons. It is all the most apparent when we take a look at the fact that while regular workhouses had a maximized length of stay of five years, in the case of their enhanced severity counterparts there is no upper limit, since probation can be denied. Rules of execution unique to the strict regime prisons have also been adapted, which basically renders enhanced severity workhouses as atypical examples of life sentences. Since the border between these legal devices is unclear, division between them can only be made through several lesser factors. For example, in the case of enhanced severity workhouses, tools that serve the purpose of education in a progressive prison system (e. g. solitary confinement, progressive prison careers, etc.) are non-existent. Finkey tries to protect the dogmatic fundamentals of this peculiar legal institution by claiming that '*our enhanced severity workhouses are true to their names, since the second amendment managed to elevate regular workhouses to a higher level to create an entity that combines the advantages of workhouses and strict regime prisons but ignores those elements that would be unsuitable for use in the case of these highly dangerous offenders.*' (Finkey, 1922, 13.) We cannot avoid comparing the fundamental characteristics of regular [3] and enhanced severity workhouses. There was a significant difference in the rules related to execution, since while light regime prisons were the basis for regular workhouses, while strict regime prisons filled this role in the case of enhanced severity workhouses. We also have to address the fact that these were regulated differently according to their 'source material'. Regarding the two measures' system of execution, we can certainly state that both of their philosophy is based on the daylight labor and nighttime separation of adequately classified inmates. The formal goal to be achieved was to create some sort of work-related diligence within the confines of this pseudo-progressive system. The importance of classification is underlined by the fact that multiple recidivists worked in separate work areas, where they were further differentiated based on their age, intelligence and qualifications. Those who denied work or posed a threat to their peers were also kept separated. Lengthwise, workhouse-placed inmates had to stay inside for at least a year, but the sentence could not exceed five years. The time of release was influenced by the diligence exercised during the first year of stay, allowing the people inside to have a say in their own fate. In the case of enhanced sever-

3 Regular workhouses were introduced in Act no. XXXI of 1913.

ity workhouses, the stay inside lasted a minimum of three years and no maximum limit was set. Strict obligation to work was present in the workhouses, according to the directives of the chief executive. Those inside had no liberty to choose between types of work, and exceptions could only be made based on medical or mental issues, in which cases the prisoners were transferred to a more adequate place following due procedure. Labor was a crucial question for workhouses, with heated debates forming on the role of agricultural work with the involvement of these facilities. Arguments against this type of labor were focused on the mostly urban background of the inmates inside and the possible risks of having highly dangerous offenders working in open-air facilities. Finkey had a strict opinion on this topic as well, claiming that: '*Those important theoretical principles that encourage the open-air employment and particularly agricultural work of prisoners are valid in the case of workhouses, just like they are valid in the case of convicted prisoners within correctional institutions. Humane and economic reasons alike require us to introduce open-air labor to regular and enhanced security workhouses. This, of course, should not be exclusive at all, but based on the personality of the prisoners and the conditions of the facility in question*.' (Finkey, 1922, 55.)

Enhanced severity workhouses were the sources of a multitude of programs from a dogmatic aspect as well, and several were crucial enough to worth noting. The first one was the issue of introducing a fundamental definition, the willingness (or tendency) to commit crimes. Efforts made with the intention of filling this definition with a compact and adequately abstract content proved futile, meaning that the profession itself did not possess a uniform understanding of the term itself. Since this designation had no pre-requisites, it could virtually be used for everyone. The lack of consistency (and the presence of contradictions) can be noted in the fact that this measure was a usable tool for both extremes of crime severity: petty delinquents could become its subjects just as easily as the most high-profile career criminals. White-collar criminals, however, did not belong under this category, so those convicted of crimes such as forgery, credit fraud etc. had no need to be afraid from being placed in a workhouse. Disproportionality was also present in the regulation, since the minimum time to be spent inside was at least 3 years, since if those on parole violated a behavioral rule (even if no crime had been committed), they could only be released on the same terms after 5 more years. This basically meant that from the aspect of parole, violating a behavioral rule and committing another crime absurdly fell under the same category. This, however, did not change the official interpretation as set by the justice department as follows: '*Taking into account the standpoint of the London International Correctional Congress of 1925, enhanced severity*

workhouses count as a security measure. Sanctioning habitual offenders with determinate sentences in line with the severity of the crime and personality of the perpetrator is inappropriate, thus linking it in a consistent manner to enhanced severity workhouses since according to several studies, determinate sentences simply fail to reach the intended goals in certain cases. The new suggestion utilizes indeterminate sentences for habitual offenders, emphasizing that no parole may take place until the convicts become capable of living a law-abiding life.'[4]

The theoretical foundations of the second amendment lie in perpetrator-justice aspect, and accordingly, it decreed that sanctions were not to be based on the offence itself, but instead, opens up the way towards the use of indeterminate length security measures for habitual offenders with criminal tendencies as symptoms for the threat one might pose to public security. Regarding the ultimate summary of the instrument, it is perfectly valid to state that '*Enhanced security workhouses would only have served the security of society if actual education had taken place within their walls. Without these, societies were only protected from dangerous criminals for as long as they were in custody. The indeterminate length of sentences thus in the end did not contribute to the protection of society*.' (Mezey, 1996, 304.) Taking into account all these, it is perfectly understandable that the second amendment's provisions related to the workhouses remained but a failed attempt to bring to fruition an unsuccessful legal idea that was far from reality.[5] Data from contemporary judicial practice seem to underline this, since while in 1928 the number of admissions was 74, in 1929 it was 31, in 1930 it was 143, in 1938 it was 136, increasing to 158 by 1940. If we compare this with the number of people who had been sanctioned more than three times it can be seen that in 1929 10,3%, and in 1930 9,4% of repeated offenders ended up in enhanced severity workhouses. The following years this indicator started to decline gradually, reaching 3,8% in 1937 and 3,2% in 1938 (Nagy, 1986, 128). With this legislation and the related, kind of resigned application experiences the interwar codification process came to an end. Of course, it has to be noted that the urge to introduce reforms had been present before World War I as well. In Pál Angyal's words: '*further postponement of the Criminal Code's reform equals to sacrificing Hungarian criminal justice itself*.' (Angyal, 1942, 19.) Before the last year of peace on the brink of World War II, the following sanctions involving deprivation of liberty could be utilized: high-medium-low regime prisons, state light regime correctional

4 *Magyarország igazságügye az 1927. évben [Hungarian justice system in 1927]*. Budapest, 49.

5 However, it has to be noted that this concept did not disappear fully, since albeit modified but using the same legal and logical fetters they appeared again in Law decree no. 9 of 1974, as enhanced security custody.

institutions, workhouses and enhanced severity workhouses. 6 national prisons, 23 regional court detention centers, 90 district court detention centers and two workhouses operated to serve this purpose. However, by this time history had caught up with Hungary, foreshadowing the twilight of the Csemegi Code's hegemony among the great political and historical changes of the era. With this study, my goal was to provide a fittingly detailed depiction of the most important changes on the field of corrections following the Trianon Peace Treaty. Of course, the confines of this essay only made it possible to introduce certain focal points evaluated based on my subjective opinions. However, I am confident that it is apparent that along with the changes in the historical context and criminal policy, the era following 1920 introduced significant changes into the context of corrections, several of which either formed or deformed society's values. In spite of this, the most significant recognition still stands: every change that occurs finally melts into the great historical truth that proves the Hungarian willingness and capacity to live and move on; even with all the slings and arrows (or the unjust rearrangement of borders) fate might throw in its way. There is one thing for sure that Trianon can teach us: where people forget the ethos of belonging to a nation and do not respect kind feelings towards it, time collapses and the past permanently fades away.

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Security and Crisis Management, Components of Economic Crises

Abstract
Security is one of the key social needs. Everyone has right to a secure life. Nevertheless, in spite of technological achievements and results of the 21st century, worldwide problems could not be alleviated. It is the age of crises nowadays, with severe economic consequences. The author – due to the increasing role of economic security and using a modern interpretation of security – intends to present the basic characteristics of crises and crisis situations and the economic components of crises, in addition, too.

Keywords: security, economic security, crisis, crisis management, National Security Strategy

Introduction

As the first years of the 21st century passed so far, it can be stated that mankind has been experiencing a series of crises (Resperger, 2014, 52.). In spite of technological achievements given by the benefits of civilization and international efforts, political, economic, environmental, global problems of social background could not be ceased, nor even alleviated. After disbanding the Warsaw Pact, the security situation of Europe radically changed, the chance for a global conflict decreased, nevertheless, it cannot be stated that the world itself became instantly safer (Siposné, 2014, 24.). According to Éva Remek (2017) European security is an actual question of our days, partly due to mass migration, terror risk, the crisis in Ukraine, instability in the Middle East, nuclear threat of North Korea, and new outbreak of diseases. The base of new challenges is the forming multipolar world order, the striving to transform the rules that influence the relations of international actors, the changing characteristics of security challenges, and other global tasks such as the acceleration of climate and

demographic changes and, closely related to that, the illegal and mass migration, the depletion of natural resources, finally the effects of technological revolution on the formation of society (URL1). The crisis has a strong economic background. The economic crisis in general has negative impact on everything and everybody, like on national economy, economic branches, investors, entrepreneurs, employers and employees. Everybody is looking for opportunities, solutions through which negative impacts could be more or less softened, alleviated. In a complex definition '*Economic security means the normal function and development of national economy. We can talk about economic security once there are no risks and processes threatening the function and growing of economy* or *there is no significant chance for their activation. As there are lots of risk components, the dimension of economic security – as well as other securities – consists of various subsystems.*' (Taksás, 2013, 16-17.)

Interpreting Security in the 21st Century

According to Barry Buzan (1991) security is nothing else than the chance and the ability of surviving and perseverance (living on) amidst threatening risks. It can be interpreted as the possibility and skill for survival, at the same time. Security is a state free of threats and risks, in which the activation of risk components is not expected (Juhász, 2019, 1.). In its psychological aspect it is a sense that can be real, false or even manipulated, too. With the completion of globalization and with the cease of bipolar world order the previously common effects of mainly political and military character, and the global security environment itself, too, have been changing radically, they partly ceased (what can be considered as an obvious result), partly they generated new risks and threats, a number of security challenges of new character and the chance of their occurrence increased. (Taksás, 2013, 11-12.; Hornyacsek, 2017, 87.; Teknős, 2020, 62.) (URL1). The transformation of security at the beginning of the 21st century went on following the tendencies of the previous, post-Cold War decade (Babos & Beregi, 2018, 340.). Euro-Atlantic and European security is facing exceptional challenges and threats coming from the East and South, too, that have not been experienced since the end of the Cold War. In the regions that influence the security of Hungary, in the majority of cases the crises of the last decades could not be solved. In our continent and in the European geopolitical environment more recent crisis centres have been formed that can be handled only with difficulties (URL1). In the 21st century the challenges, problems threatening mankind have not ceased in spite of the results of development, the

existing ones have generated even more recent and more complex effects (Kuthi, 2001,; Teknős, 2019a, 280.). According to Teknős (2019) the most threatening sources of the 21st century can be originated from environmental problems that can intensify the chance of conflicts of civilizational origin. According to Teknős, military conflicts could form because of the need of possession of waters, forests, fishing areas, farmlands and more secure habitat (Teknős, 2019b, 146.). Due to the development and processes of international economy, for the 21st century the concept of security can be used in a wider sense. The new concept of security includes not only the military and political aspects, but the economic, social and environmental ones, too, and considering the variables, the dimensions and aspects of a more stable, more calculable and more sustainable security are composed of the following (Isaszegi, 2015, 21.).

- Political
- Military
- Economic
- Social
- Social (humanitarian), of human rights
- Ecological, environmental
- Information technological
- Monetary
- Integrational, religious
- Educational and cultural
- Others, having effect on human existence and values: basically science/technics/technology

Due to the competition of actors, economy is unpredictable and risky, having a significant impact on security. As a result, in the 21st century the safety of economy is one of the components of security. '*In the functioning of international economic system disorders can occur that can lead to serious consequences in all the sectors of security.*' (Matus, 2005, 212.) Economic security during threats, risks, dangers on economic values, interests' manifests in a general demand, or while averting, in an economic demand that (Medveczky, 2015, 47.) consists of individuals (consumers), human communities (e.g. service groups), states, international systems, economic actors. It entails a stable environment in which economic, commercial, financial transactions can be securely done, the roads of communication and transportation are secured, and there are possibilities of free access to markets and raw materials. Its state is defined by its relationship to the sphere of defence, (the state of defence economy, the preparation of na-

tional economy for defence, the possibilities of economic mobilization). 'Economic security as a state can be interpreted that the risk of activating of components and processes threatening the normal functioning and sustainable growth of the economy are not higher than usual. The normal functioning of economy – at nation state level – means for me the growth of production and service processes free of amplitudes that are wider than the measure of cyclical functioning based on the economic and natural rules, that on a large scale follows the tendencies that correspond to the volume of resources of a given economy. The following factors have impact on economic security: the security of consumers (citizens, inhabitants), of services (producers, entrepreneurs), of administration (central and regional), international and infrastructural security (chiefly the security of critical infrastructure in it). '*The security of defence economy, i. e. the defence capability of national economy is a highly important terrain of economic security. This capability of defence economy defines to what extent a national economy is able to maintain during crisis periods the emission level and through that the level of provision, and to satisfy the increasing demands'.* (Taksás, 2013, 89.)

The 21st Century – The Age of Crises?

Nowadays, not only the concept of security, but the concept of crisis have transformed, have become more complex too. *'Today in a figurative sense crisis means the ensemble of negative processes, during which occurrences other than normal are decisive. These negative processes can be generated due to natural and industrial disasters (as a sad example to that was the red mud accident in October 2010 in the region of Kolontár and Devecser), external and internal social, political and economic differences, as a result of negative economic processes. They mean severe disorder; dangerous situations that are hard to handle and can culminate in conflicts. A conflict can be defined as a confrontation arising from clashes of interest, one of their most severe forms is called war'.* (Isaszegi, 2015, 20.) The author of the quotation, János Isaszegi, based on his own practical experiences raises that question too, whether in a given crisis region to solve a conflict helps the interests of the given region or is it in the national interest of great powers. A crisis is a harmful state, the result of extraordinary occurrences that requires the activating of the local or national system of defence administration, or the application of extraordinary steps (Király & Medveczky, 2009). A crisis is a severe disorder, difficult situation, occurring in the life of an individual, a group or a society, the result of which can be either

good or bad. From the point of view of the functioning of economy, crisis situations are extraordinary cases of the functioning of the state, society, or economy, in which the mobilization of resources is needed based on special legal order or government steps (Medveczky, 2015, 47.). Crises have become the centre of attention after the break-up of bipolar world order. After disbanding the Warsaw Pact, the security situation of Europe radically changed, the chance for a global confrontation decreased, nevertheless, it cannot be stated that the world instantly has become a more secure place (Siposné, 2014, 24.; Teknős, 2013, 403-404.). After the Cold War the international environment radically changed. Transition occurred in many countries, one of the two large military pacts ceased to exist, the NATO was significantly transformed, the European Union was enlarged too, there were and still are accession negotiations. International relations have become tighter, which means strong connections, mutual effects, situations of adaptation and dependence, duties to the partners. Besides counting on oneself, the need for collective security has come to prominence. Besides fighting the common danger in order to survive, securing the welfare as much as possible has become an objective. In the new way of cooperation, the need and the fact of economic cooperation was a novelty, leading to a global international system based on mutual interdependence. At the beginning of the 21st century this became a decisive factor, mutual interdependence being characteristic to the economic system and to the international security, too. The concept of security gained a wider sense too, besides military aspects political, economic, environmental, and social ones became its significant components (Tircsi, 2015). Above mentioned characteristics brought radical changes to the Cold War period and to the preceding period as well. It can be seen that the previous realistic view was more and more replaced by a liberal one in the research, analysis, formation of the international system. Politics, security, economy, the periodically forming crises always have been present in the international system, they always have been linked to each other directly and indirectly, sometimes leading to armed conflicts (Resperger, 2016). Nevertheless, the picture of their importance, their effect on the occurrences has been rather different over time. The same way, their scientific research has changed, the analyses, conclusions based on this research have constantly changed, developed. Different scientific views, interpretations, workshops were born. Even within views, interpretations differences, possibilities for future development could be found (realism, neorealism), based on the same basis. At the same time, between views and interpretations (e.g. realism, liberalism) there have been intense debates, differences in concepts, having mutual influence on each other, encouraging new scientific results. The predominance of a given view or interpretation is very

characteristic to each age, historical time. The Cold War and pre-Cold War period are characterized by the research, statements, results of a realistic, those of the later period by an idealistic concept. '*Mutual interdependence has become more intense due to the stronger international relations and mutual effects. There is a close relation between economic, political, military and social structures. The system basically is of anarchic character, because every state insists on the principles of territoriality and sovereignty, and there is no international authority which would be able to make these common rules happen. There is a contradiction between intentions to make the global market function in order to effectiveness and welfare, on one side, and to maximize it for a state based on the principle of territoriality, on the other side. In practice, power politics clashes with economic politics within the same decision making mechanism, the latter demanding more rationality.*' (Resperger, 2016, 27-28.) As economy is an important environmental part of security, one of the decisive essential components of crises is economic crisis. After the millennium, regrettably, we became targets of waves of economic crises from time to time. A global crisis has been generated, as a result of an irrational secession between the real sector and the financial sector, the latter becoming speculative. '*...during the present financial and economic crisis the world has recognised that the current regulations on the functioning of banks are not sufficient, there is a high demand to rethink regulations, to elaborate a crisis resistant conception in order to avoid what no one expected to happen. As a result of the crisis, various new regulation tools have been elaborated (BÁZEL III), the major moral of the insolvency of only one bank is a real threat at system level that can rock the whole financial sector'.* (Mérő, 2012, 129.) '*In order to establish a healthy bank regulation, the risks at bank and at system level should be handled too'.* (Lentner, 2013)

Relationship Between Security and Crisis Management

Nowadays, the world, as well as our macro and microenvironment, is changing fast. Answers should be given to the challenges where the urge for crisis management is present. Not in the more comfortable mid-term or long-term solutions, but in a short term, in our present conditions. The question of national security has become much more complicated. The character of activities of the armed forces has changed fundamentally. The role of non-armed defence is becoming much more dynamic. As it was stated in the National Security Strategy in 2012, there is a need for a nationwide approach. Partly, this is the end of sectorial independence, which could be called separation too. Effectiveness

and results can be reached only through a common, coordinated effort. The new challenges and crises of the post-Cold War era required new types of solutions from the international actors. Altogether, the number of conflicts decreased in the ’90s, but at the same time the number of intrastate conflicts increased compared to the number of interstate conflicts (Friedmann, 2007, 78.). Due to the character of new challenges, the actors looking for a solution for the conflicts are facing new tasks (Remek, 2019, 101.). The most important actor to solve international conflicts is UN. The Charter of UN details the measures to follow in order to prevent crises, or to handle them after being generated. These measures can be read in Chapter VIII of the Charter. Amongst the tasks of OSCE related to crisis management can be found: early alarm, prevention of conflicts, crisis management and post-crisis pacification, called conflict cycle by relevant authors. This comes to effect through local operations network (missions) and through the already mentioned cooperation of Conflict Preventing Centre (Remek, 2019, 107.; Remek, 2017).

Economic Components of the Crises

In Chapter IV of NSS of 2012, the role of a well-functioning economy is highlighted amongst the tools of realization of NSS, as it states that the security of our homeland must rely on firm economic basis. This stability increases the advocacy skills of the country that is why it is highly important to secure proper resources to defend the country and the citizens, besides the duties as an ally (URL2). According to the National Security Strategy of 2020 (furthermore the Strategy) the political system of Hungary is stable, the public security is balanced, firm, increased by the NATO and EU membership. The Strategy describes that international cooperation is handled by our country in the frame of international cooperation, as a member of allied organization, at the same time, respecting our national interests. In the national self-effort, there is need for home defence, law enforcement, emergency management and counter-terrorism. This can be found in the NSS of 2012 as well, as it states that nationwide answers are needed to face above mentioned threats, and at the same time the effective cooperation and coordination of home defence, national security, law enforcement, justice, emergency management and civil crisis management institutions must be emphasized (URL2).

According to the main parts of the present paper, it can be clearly seen that the concept of security has significantly transformed, following the changes and requirements of our age. Establishing security not only depends on military tools,

moreover, regarding its importance, it is ranked lower regarding its importance (although it is to expect a kind of growth regarding the importance of it among the objectives of National Security Strategy). The economic component, the secure maintenance of economy, on the other hand, has more and more attention; at strategic level it has priority. The same way, the concept of defence, and the focus within it have changed. Nowadays, from the point of view of security not only home office, national security or law enforcement have decisive character, but defence of economy, preparation for defence of economy, savings for defence, defence of critical infrastructure and defence against disasters, the reinforcement of the tasks of the authorities, the defence of population and material goods are more current topics (Endrődi & Jósvai, 2016, 111.; Lakatos, 2015, 436., Muhoray, 2012, 2.). The fulfilment of tasks of the Hungarian Army, based on laws and originating from the obligation to contribute to the tasks of emergency management is secured by Defence Emergency Management System (abbreviated in Hungarian as HKR) through which the defence forces are used in order to handle emergency situations (Endrődi, 2013, 65.). The use of defence forces in order to prevent emergency situations is basically fulfilled by the second pillar, i. e. on the basis of casual orders. Up to 200 people participating in preventing emergency situations decisions are made by the Chief of the General Staff, over that by the Defence Minister (Padányi & Földi, 2015, 32.) (URL3). Nowadays, in the actual market economy circumstances not only the importance of the new type of real focus of defence has increased a lot, but the economic environment itself is highly essential to be able to guarantee that kind of functionality. By now, in the middle of a series of economic crises it can be clearly seen that the market itself is not omnipotent. On one side, problems generated in market economy have to be handled, on the other side, during crisis periods and even in normal times it can happen that the country or the society chooses several important goods to secure provision and its defence, and market economy simply cannot guarantee that properly. Thus, the security, defence, preparation of economy, as well as the formation of necessary reserve is highly important, which nowadays can and must be secured by taking advantage of market economy, and still, avoiding the disadvantages of the same in times of crises. All these tasks should be planned by using a modern system, securing economy and effectiveness, securing the previously mentioned basic principle, the nationwide approach, the effective cooperation and coordination, the coordinated and concentrated use of resources. Economy security, defence preparations and formation of reserves, even nowadays are evidentially public tasks of the state, in addition to that, it has more importance than ever, becoming a factor of national security. During legal regulation the changed circumstances

should be taken into account, and similarly to foreign examples, we should take advantage of the possibilities of market economy and at the same time avoid the risks of the same. Amongst these risks we can count e. g. the weakness of public service contracts that do not take into account properly the interests of defence preparation, the lack of defence interests of the service providers and the uncertainty of provision that originates from fast market changes, strong fluctuation of entrepreneurs, economic crises. Related to that, the ideal case is when a state can have access to its resources, to the markets and this way can guarantee the wellbeing and welfare of the society (Remek, 2017, 219.).

Summary

It can be stated: we live in the age of crises. Unfortunately, since 2008 we have been experiencing a changing but still permanent wave of crises and symptoms of crises at a global and domestic level too. Because of that, there is a constant need for crisis management. There are very different approaches to judge the essence of crisis management, mostly at domestic level. As I stated, previously the role of politics, power, armed forces were predominant and decisive in the international security system, but nowadays, although these have maintained their importance, other factors, such as economy, commerce and welfare are closing up. The international system became more complex; to understand it there is a need for a more complex examination of all the components. This became decisive by the beginning of the 21st century, mutual interdependence becoming characteristic to economic system and international security as well. It can be stated that the focus of national security is now on international security. One can claim that unlike in bipolar world order, the military component of home security nowadays has significantly decreased, on the other hand, the importance of tasks related to economic security, national defence preparations, defence savings and the planning of above mentioned items has increased (Gazdag, 2012, 1-2.; Jászay & Király, 2014; Szalai, 2012).

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