

MEĐUNARODNI NAUČNI SKUP „DANI ARČIBALDA RAJSA“  
TEMATSKI ZBORNIK RADOVA MEĐUNARODNOG ZNAČAJA

INTERNATIONAL SCIENTIFIC CONFERENCE “ARCHIBALD REISS DAYS”  
THEMATIC CONFERENCE PROCEEDINGS  
OF INTERNATIONAL SIGNIFICANCE

MEĐUNARODNI NAUČNI SKUP  
INTERNATIONAL SCIENTIFIC CONFERENCE

**„DANI ARČIBALDA RAJSA“**  
**“ARCHIBALD REISS DAYS”**

*Beograd, 1-2. mart 2013.*  
*Belgrade, 1-2 March 2013*

**TEMATSKI ZBORNIK RADOVA  
MEĐUNARODNOG ZNAČAJA**

**THEMATIC CONFERENCE PROCEEDINGS  
OF INTERNATIONAL SIGNIFICANCE**

**TOM III  
VOLUME III**

KRIMINALISTIČKO-POLICIJSKA AKADEMIJA  
Beograd, 2013  
ACADEMY OF CRIMINALISTIC AND POLICE STUDIES  
Belgrade, 2013

*Publisher*

ACADEMY OF CRIMINALISTIC AND POLICE STUDIES  
Belgrade, 196 Cara Dušana Street (Zemun)

*Editor-in-Chief*

Associate Professor GORAN MILOŠEVIĆ, PhD  
Dean of the Academy

*Editors*

Associate Professor DRAGANA KOLARIĆ, PhD  
Associate Professor SRĐAN MILAŠINOVIĆ, PhD  
Associate Professor DARKO SIMOVIĆ, PhD  
Assistant Professor BILJANA SIMEUNOVIĆ-PATIĆ, PhD

*Reviewers*

Full Professor VLADIMIR IVANOVICH TRET'YAKOV, PhD,  
Volgograd Academy of the Russian Internal Affairs Ministry, Russian Federation  
Full Professor MYHAYLO MYHAYLOVYCH CYMBALYUK, PhD,  
Lviv State University of Internal Affairs, Ukraine  
Full Professor WANG SHIQUAN, PhD,  
China Criminal Police University, Shenyang, Liaoning, People's Republic of China  
Full Professor SNEŽANA NIKODINOVSKA-STEFANOVSKA, PhD,  
Faculty of Security, Skopje, Macedonia  
Full Professor VID JAKULIN, PhD, Faculty of Law, Ljubljana, Slovenia

*English Language Editors and Proof-Readers*

IRENA PAVLOVIĆ, MA  
DRAGOSLAVA MIĆOVIĆ, MA  
MIRJANA STOJOV, MA  
VESNA ANĐELIĆ NIKOLENĐIĆ, MA  
JELENA PANDŽA

*Computer Design*

MILOŠ IVOVIĆ/MILAN SREĆKOVIĆ

*Impression*

200 copies

*Print*

/

THE CONFERENCE AND THE PUBLISHING OF PROCEEDINGS  
WERE SUPPORTED BY THE MINISTRY OF EDUCATION AND SCIENCE  
OF THE REPUBLIC OF SERBIA

© 2013 Academy of Criminalistic and Police Studies, Belgrade

ISBN 978-86-7020-190-3

ISBN 978-86-7020-262-7

*Izdavač*  
KRIMINALISTIČKO-POLICIJSKA AKADEMIJA  
Beograd, Cara Dušana 196 (Zemun)

*Glavni i odgovorni urednik*  
prof. dr GORAN MILOŠEVIĆ  
dekan Akademije

*Urednici*  
prof. dr DRAGANA KOLARIĆ  
prof. dr SRĐAN MILAŠINOVIĆ  
prof. dr DARKO SIMOVIĆ  
doc. dr BILJANA SIMEUNOVIĆ-PATIĆ

*Recenzenti*  
prof. dr VLADIMIR IVANOVIĆ TRETJAKOV,  
Volgogradska akademija Ministarstva unutrašnjih poslova Rusije, Volgograd, Rusija  
prof. dr MIHAILO CIMBALUK, Državni univerzitet unutrašnjih poslova u Lavovu, Ukrajina  
prof. dr VANG ŠIKUAN, Kineski kriminalističko-policijski univerzitet, Ljaoning, Kina  
prof. dr SNEŽANA NIKODINOVSKA-STEFANOVSKA, Fakultet bezbednosti  
Skoplje, Makedonija  
prof. dr VID JAKULIN, Pravni fakultet Univerziteta u Ljubljani, Slovenija

*Lektura*  
mr IRENA PAVLOVIĆ  
DRAGOSLAVA MIĆOVIĆ, MA  
MIRJANA STOJOV, MA  
VESNA ANĐELIĆ NIKOLENĐŽIĆ, MA  
JELENA PANDŽA

*Tehničko uređenje*  
MILOŠ IVOVIĆ/MILAN SREĆKOVIĆ

*Tiraž*  
200 primeraka

*Štampa*  
JP "SLUŽBENI GLASNIK", Beograd

ODRŽAVANJE SKUPA I ŠTAMPANJE OVOG ZBORNIKA  
PODRŽALO JE MINISTARSTVO PROSVETE I NAUKE REPUBLIKE SRBIJE

© 2013 Kriminalističko-policijska akademija, Beograd

ISBN 978-86-7020-190-3  
ISBN 978-86-7020-262-7

**INTERNATIONAL SCIENTIFIC CONFERENCE  
ARCHIBALD REISS DAYS**

**SCIENTIFIC PROGRAMME COMMITTEE**

**Associate Professor Goran Milošević, PhD**, Dean of the Academy of Criminalistic and Police Studies, **President**  
**Full Professor Miroslav Vesković, PhD**, Rector of the University of Novi Sad  
**Full Professor Sima Avramović, PhD**, Dean of the Faculty of Law in Belgrade  
**Full Professor Radomir Milašinović, PhD**, Dean of the Faculty of Security in Belgrade  
**Major-General Mladen Vuruna, PhD**, Head of the Military Academy  
**Slobodan Nedeljković**, Assistant to the Minister, Ministry of Interior of the Republic of Serbia  
**Miloš Oparnica**, Assistant to the Minister, Ministry of Interior of the Republic of Serbia  
**Police General Branislav Mitrović**, Deputy Police Director, Ministry of Interior of the Republic of Serbia

**International members**

**Wang Shiquan, PhD**, President of the China Criminal Police University  
**Mychaylo Cymbaluk, PhD**, Rector of the Lviv State University of Internal Affairs, Ukraine  
**Ivan Toth, PhD**, Dean of the University of Applied Sciences in Velika Gorica, Croatia  
**Gheorghe Popa, PhD**, Police Academy "Alexandru Ioan Cuza", Romania  
**Vladimir V. Gordienko, PhD**, Head of the Academy of Management of the Interior Ministry of Russia  
**Vladimir Tretyakov, PhD**, Chief of the Volgograd Academy of the Russian Internal Affairs Ministry  
**Hasan Hüseyin Çevik, PhD**, Deputy Rector of the Turkish National Police Academy  
**Piotr Bogdalski, PhD**, Commandant-Rector of the Police Academy in Szczytno, Poland  
**Helene Martini, PhD**, Director of the France's National Police College and President of the Association of European Police Colleges  
**Ladislav Šimák, PhD**, Dean of the Faculty of Special Engineering, University of Zilina, Slovakia  
**Peter Ruzsonyi, PhD**, Dean of the Faculty of Law Enforcement, Hungary  
**Snežana Nikodinovska-Stefanovska, PhD**, Faculty of Security, Macedonia  
**Sonja Tomović Sundić, PhD**, Dean of the Faculty of Political Sciences in Podgorica, Montenegro  
**Jozef Metenko, PhD**, Academy of Police Force, Slovakia  
**Vid Jakulin, PhD**, Faculty of Law, University of Ljubljana, Slovenia  
**Darko Maver, PhD**, Faculty of Criminal Justice and Security, University of Maribor, Slovenia  
**Nedžad Korajlić, PhD**, Director of the Institute of Criminalistics, Forensic Research and Court Expertise, University of Sarajevo, Bosnia and Herzegovina  
**Mile Šikman, PhD**, MoI of the Republic of Srpska

**ORGANIZING COMMITTEE**

**Associate Professor Dragana Kolarić, PhD, President**  
Academy of Criminalistic and Police Studies  
**Milorad Todorović**, Secretary of the Ministry of Interior of the Republic of Serbia  
**Lazar Nešić**, National Criminalistic-Technical Centre Ministry of Interior of the Republic of Serbia  
**Goran Amidžić, MA**, Higher School of Internal Affairs, Republic of Srpska  
**Assistant Professor Biljana Simeunović-Patić, PhD**, Academy of Criminalistic and Police Studies  
**Full Professor Srđan Milašinović, PhD**, Academy of Criminalistic and Police Studies  
**Full Professor Đorđe Đorđević, PhD**, Academy of Criminalistic and Police Studies  
**Full Professor Ljiljana Mašković, PhD**, Academy of Criminalistic and Police Studies  
**Full Professor Milan Žarković, PhD**, Academy of Criminalistic and Police Studies  
**Associate Professor Dane Subošić, PhD**, Academy of Criminalistic and Police Studies  
**Associate Professor Mladen Bajagić, PhD**, Academy of Criminalistic and Police Studies

**MEĐUNARODNI NAUČNI SKUP  
DANI ARČIBALDA RAJSA**

**NAUČNI PROGRAMSKI ODBOR**

**prof. dr Goran Milošević**, dekan Kriminalističko-policijske akademije, **predsednik**  
**prof. dr Miroslav Vesković**, rektor Univerziteta u Novom Sadu  
**prof. dr Sima Avramović**, dekan Pravnog fakulteta u Beogradu  
**prof. dr Radomir Milašinović**, Fakultet bezbednosti Univerziteta u Beogradu  
**general-major prof. dr Mladen Vuruna**, načelnik Vojne akademije  
**Slobodan Nedeljković**, pomoćnik ministra, MUP Republike Srbije  
**Miloš Oparnica**, pomoćnik ministra, MUP Republike Srbije  
**general policije Branislav Mitrović**, zamenik direktora policije MUP Republike Srbije

**Članovi iz inostranstva**

**prof. dr Wang Shiquan**, predsednik Kineskog kriminalističko-policijskog univerziteta  
**prof. dr Mychaylo Cymbaluk**, rektor  
Državnog univerziteta unutrašnjih poslova u Lavovu, Ukrajina  
**Prof. v. š. mr. sc. Ivan Toth**, dekan Veleučilišta u Velikoj Gorici, Hrvatska  
**prof. dr Gheorghe Popa**, Policijska akademija "Alexandru Ioan Cuza", Rumunija  
**prof. dr Vladimir V. Gordienko**, načelnik Akademije  
za menadžment Ministarstva unutrašnjih poslova Rusije  
**prof. dr Vladimir Tretjakov**, načelnik Volgogradske akademije  
Ministarstva unutrašnjih poslova Rusije  
**prof. dr Hasan Hüseyin Çevik**, zamenik rektora Turske nacionalne policijske akademije  
**prof. dr Piotr Bogdalski**, komandant-ректор Policijske akademije u Šitnu, Poljska  
**Helene Martini**, direktorka Francuskog nacionalnog policijskog koledža  
i predsednica Asocijacije evropskih policijskih koledža  
**prof. dr Ladislav Šimák**, dekan Fakulteta za specijalno inženjerstvo, Univerzitet u Žilini, Slovačka  
**prof. dr Peter Ruzsonyi**, dekan Fakulteta za sprovođenje zakona, Mađarska  
**prof. dr Snežana Nikodinovska-Stefanovska**, Fakultet bezbednosti, Makedonija  
**prof. dr Sonja Tomović Šundić**, dekan Fakulteta političkih nauka u Podgorici, Crna Gora  
**prof. dr Jozef Metenko**, Policijska akademija, Slovačka  
**prof. dr Vid Jakulin**, Pravni fakultet, Univerzitet u Ljubljani, Slovenija  
**prof. dr Darko Maver**, Fakultet bezbednosnih studija, Univerzitet u Mariboru, Slovenija  
**prof. dr Nedžad Korajlić**, direktor Instituta za kriminalistiku, forenzička istraživanja  
i sudska vještačenja, Univerzitet u Sarajevu  
**dr Mile Šikman**, MUP Republike Srpske

**ORGANIZACIONI ODBOR**

**prof. dr Dragana Kolarić**, Kriminalističko-policijska akademija, **predsednik**  
**Milorad Todorović**, sekretar MUP Republike Srbije  
**Lazar Nešić**, Nacionalni kriminalističko-tehnički centar, MUP Republike Srbije  
**mr Goran Amidžić**, Visoka škola unutrašnjih poslova, Republika Srpska, BiH  
**doc. dr Biljana Simeunović-Patić**, Kriminalističko-policijska akademija  
**prof. dr Srđan Milašinović**, Kriminalističko-policijska akademija  
**prof. dr Đorđe Đorđević**, Kriminalističko-policijska akademija  
**prof. dr Ljiljana Mašković**, Kriminalističko-policijska akademija  
**prof. dr Milan Žarković**, Kriminalističko-policijska akademija  
**prof. dr Dane Subošić**, Kriminalističko-policijska akademija  
**prof. dr Mladen Bajagić**, Kriminalističko-policijska akademija

## P R E F A C E

*Dear readers,*

In front of you is the Thematic Proceedings of the International Scientific Conference “Archibald Reiss Days 2013”, which was organized by the Academy of Criminalistic and Police Studies, with the support of the Ministry of Interior and the Ministry of Education, Science and Technological Development of the Republic of Serbia, and held at the Academy of Criminalistic and Police Studies.

The International Scientific Conference “Archibald Reiss Days”, is held for the third time in a row, in memory of one of the founders and directors of the first modern police high school in Serbia, Dr. Rodolphe Archibald Reiss, after whom the Conference was named.

The Thematic Conference Proceedings contains 138 papers written by eminent scholars in the field of law, security, criminalistics, police studies, forensics, medicine, as well as members of national security system participating in education of the police, army and other security services from Russia, Ukraine, Belarus, China, Poland, Slovakia, Czech Republic, Hungary, Slovenia, Bosnia and Herzegovina, Montenegro, Republic of Srpska and Serbia. Each paper has been reviewed by two competent international reviewers, and the Thematic Conference Proceedings in whole has been reviewed by five international reviewers.

The papers published in the Thematic Conference Proceedings contain the overview of contemporary trends in the development of police educational system, development of the police and contemporary security, criminalistics and forensics, as well as with the analysis of the rule of law activities in crime suppression, situation and trends in the above-mentioned fields, and suggestions on how to systematically deal with these issues. The Thematic Conference Proceedings represents a significant contribution to the existing fund of scientific and expert knowledge in the field of criminalistic, security, penal and legal theory and practice. Publication of this Conference Proceedings contributes to improving of mutual cooperation between educational, scientific and expert institutions at national, regional and international level.

Finally, we wish to extend our gratitude to all authors and participants at the Conference, as well as to reviewers of the Proceedings, Mr Vladimir Tretyakov, PhD, Mr Mykhail Cymbalyuk, PhD, Mr Wang Shiquan, PhD, Mrs Snežana Nikodinovska-Stefanovska, PhD and Mr Vid Jakulin, LL.D. We also wish to thank the Ministry of Interior of the Republic of Serbia on its support in organization and realization of the Conference, as well as the Ministry of Education, Science and Technological Development of the Republic of Serbia, for its financial support in publishing of the Thematic Conference Proceedings

We sincerely hope that the “Archibald Reiss Days 2013” will become a traditional, internationally renowned scientific conference.

Belgrade, March 2013

*Programme and Organizing Committees*

# CONTENTS

## TOPIC V FORENSIC METHODS IN CRIMINALISTIC IDENTIFICATIONS

<b>Ljiljana Mašković, Smilja Teodorović, Ana Branković</b> INFRARED THERMAL IMAGING IN FORENSICS.....	3
<b>Inessa Anischenko</b> REFERENCE DATABASE OF AUTOSOMAL DNA MARKERS: POSSIBILITY OF GENOTYPE ANALYSIS OF LARGE POPULATION ARRAYS OF BELARUS.....	15
<b>Jiří Straus</b> FORENSIC METHODS IN CRIMINALISTICS IDENTIFICATIONS.....	19
<b>Aleksandar Ivanović, Jasna Kažić, Nataša Grbović</b> FORENSIC INSTITUTIONS ACCREDITATION AS AN IMPERATIVE OF EU .....	27
<b>Metodija Dojcinovski, Goce Anakievski</b> CHROMATOGRAPHY AS A FORENSIC METHOD IN CRIMINALISTIC IDENTIFICATIONS .....	31
<b>Aleksandar Čudan</b> ECONOMIC-FINANCIAL EXPERT EVIDENCE AS A FORM OF FORENSIC ACCOUNTING.....	39
<b>Brankica M. Popović, Miloš Bandur, Anđelija Raičević</b> FINGERPRINT IMAGE ENHANCEMENT USING ROBUST ORIENTATION FIELD ESTIMATION .....	47
<b>Danijela Ristic, Goran Ilic</b> THE ROLE OF THE FORENSIC ENTOMOLOGIST AND THE CORONER IN THE INVESTIGATION OF CRIMINAL OFFENSES .....	59
<b>Ivana I. Flegar, Radovan V. Radovanovic</b> FORENSIC ASPECTS OF THE PROTECTIONS OF EURO .....	67
<b>Lazar Nešić, Saša Paunović, Jovan Kovačević</b> BIOMETRICAL IDENTIFICATION VIA FACIAL PHOTOGRAPHY .....	83
<b>Xueguo Chen, Hongyang Wen, Yu Zhu, Yingjian Xu, Ming Song</b> SIMULTANEOUS ANALYSIS OF COCAINE AND ITS METABOLITES IN LIVER MICROSOME S <sub>9</sub> FRACTION OF RAT BY LIQUID CHROMATOGRAPHY - MASS SPECTROMETRY .....	97
<b>Aoyang Yu, Wenfeng Jiang</b> THE STUDY ON THE CORRELATION BETWEEN BALLISTIC IMPACT TRACES ON THE PLAIN WOVEN FABRIC AND THE KINDS OF BULLETS.....	103
<b>Bin Yu</b> A METHOD FOR PHOTOCOPY EXAMINATION BASED ON TONERS .....	113



<b>Fan Debao</b> RESEARCH ON INVESTIGATION AND FORENSIC METHOD APPLIED TO INTERNET GAMBLING.....	121
<b>Fangzhou He</b> A HYBRID COMPONENT-SERVICE FRAMEWORK FOR POLICE MATERIAL EVIDENCE IMAGE MANAGEMENT SYSTEM.....	129
<b>Hanxin Zhang</b> STUDY ON THE CHARACTERISTICS OF AUTOMOBILE TIRE TRACES WITH ABS.....	139
<b>Hongguo Zhang, Yanchun Zhang, Lihong Chen</b> THE CHARACTERISTICS OF FRAGMENTS OF IMPROVISED EXPLOSIVE DEVICES.....	145
<b>Huapeng Wang, Cuiling Zhang, Jun Yang, Ming Wu</b> EXPERIMENTAL STUDY ON A FORENSIC SEMI-AUTOMATIC SPEAKER VERIFICATION USING VOWEL CEPSTRAL WITH LIMITED QUESTIONED DATA .....	151
<b>Li Na, Luo Wenhua</b> RESEARCH ON THE REVERSE ANALYSIS METHOD OF MALWARES - THE EXAMPLE OF "LURKER" .....	159
<b>Lihong Chen, Yanchun Zhang, Hongguo Zhang</b> A THEORY SYSTEM OF DELAYED DETONATING EXPLOSIVE DEVICES IN CHINA.....	171
<b>Peng Xie, Biao Li, Xiao-bin Mu</b> DETERMINATION OF ABSOLUTE WRITING AGE OF IRON-BASED INK HANDWRITINGS .....	181
<b>Wang Yong, Jiang Wenfeng</b> PHOTOGRAPHIC METHOD OF ANTI-LOCK BRAKE TRACE EVIDENCE .....	187
<b>Yi Kuiyu, Xu Zunlian, Li Jimin, Wang Ping, Liu Xianfeng</b> EVALUATION OF MEASUREMENT UNCERTAINTY FOR DETERMINING $\text{NH}_4^+$ IN EXPLOSION SOIL SAMPLES BY ULTRAVIOLET SPECTROPHOTOMETRY METHOD .....	197
<b>Zhen Wang</b> TIRE IMPRESSIONS FEATURE EXTRACTION AND MATCHING ALGORITHM BASED ON SIFT .....	209

**TOPIC VI  
CONTEMPORARY SECURITY STUDIES  
AND SECURITY OF THE REPUBLIC OF SERBIA**

<b>Ljubiša Mitrović</b> THE STRATEGY OF SOCIAL DEVELOPMENT AND THE MORAL UNITY OF A PEOPLE AS THE BASES OF SECURITY .....	219
<b>Radoslav Gacinovic</b> THEORETICAL-METHODOLOGICAL FRAME OF RESEARCH OF NATIONAL SECURITY .....	227

<b>Želimir Kešetović, Srđan Milašinović, Mladen Mrdalj</b> METHODODOLOGICAL AND ETHICAL CHALLENGES IN CRISIS AND DISASTER RESEARCH .....	241
<b>Zoran Jevtovic, Zoran Aracki</b> ARCHIBALD REISS PROPAGANDA - COMMUNICATION INFLUENCE ON CONFLICT PARADIGM CONSTRUCTION.....	249
<b>Lesia Tomanevych</b> THE CREATION OF THE EFFECTIVE BUSINESS SECURITY SYSTEM AS THE IMPORTANT PART OF NATIONAL SECURITY .....	257
<b>Mladen Bajagic, Maja Ruzic</b> THE COPENHAGEN SCHOOL: WHO HAS THE RIGHT TO SURVIVE WITHIN THE NEW MULTISECTORAL SECURITY AGENDA?.....	269
<b>Dragan Mladan, Vladimir Cvetkovic</b> CLASSIFICATION OF EMERGENCY SITUATIONS.....	275
<b>Saša Mijalković, Marija Popović</b> DEVELOPMENT AND THE FUTURE OF SECURITY SCIENCES IN THE REPUBLIC OF SERBIA .....	291
<b>Nataša Deretić</b> THE ROLE OF ARMY IN THE SECURITY OF THE ROMAN STATE.....	299
<b>Goran Matić, Milan Milošević</b> CLASSIFIED INFORMATION LAW OF THE REPUBLIC OF SERBIA .....	309
<b>Stanislav Stojanović</b> STRATEGIC THINKING AND PROTECTION OF NATIONAL INTEREST .....	313
<b>Boris Murgoski</b> SECURITY MANAGEMENT AND THE ROLE OF THE MANAGER IN THE SECURITY SECTOR.....	323
<b>Snezana Mojsoska, Irina Majovski, Goce Mojsoski</b> SHADOW ECONOMY WITH THE OVERVIEW OF THE SITUATION IN MACEDONIA .....	331
<b>Zlate Dimovski, Ice Ilijevski, Kire Babanoski</b> THE ROLE OF THE OMBUDSMAN IN THE CONTROL AND OVERSIGHT OF THE SECURITY SYSTEM IN THE REPUBLIC OF MACEDONIA.....	341
<b>Marjan Gjurovski, Snezana Nikodinovska</b> THE PLACE AND ROLE OF PUBLIC SECURITY IN SECURITY STUDIES AND CONCEPTS .....	351
<b>Iskra Akimovska Maletic, Bogdanco Gogov, Aleksandar Ivanov</b> NORMATIVE AND INSTITUTIONAL PRECONDITIONS FOR ACHIEVING SECURITY IN SCHOOLS (RESEARCH ON SECURITY IN SECONDARY SCHOOLS IN THE CITY OF SKOPJE).....	359
<b>Svetlana Stanarević, Vanja Rokvić, Slobodan Spasić</b> CULTURE AS A POSITIVE INSTRUMENT FOR POLICE REFORM .....	371
<b>Ivan Milojević, Milan Mihajlović, Aleksandar Miletić</b> RISK OF READY-MONEY PAYMENT AS A FACTOR OF NATIONAL SECURITY .....	387

---

<b>Vesna Trajkovska</b> ENGLISH INFLUENCE ON MACEDONIAN TERMINOLOGY IN THE AREAS OF SECURITY AND LAW .....	395
<b>Ljubinka Katić, Željko Bralić</b> SECURITY STUDIES BETWEEN THE OLD AND THE NEW SECURITY PARADIGM.....	403
<b>Zorica Kojčin, Ivan Žarković, Gordana Dobrivojević</b> SECURITY AND ITS IMPACT ON THE DEVELOPMENT OF TOURISM IN THE REPUBLIC OF SERBIA .....	411
<b>Dragan M. Cvetković, Marija D. Mićović, Darko V. Senić</b> SCOPE, DYNAMICS AND STRUCTURE OF ECOLOGICAL CRIMES IN SERBIA .....	419
<b>Darko Božanić, Aleksandar Milić, Nenad Komazec</b> THEORETICAL DETERMINATION OF THE REPUBLIC OF SERBIA ENERGY SECURITY .....	429
<b>Dragiša Jurišić</b> SUBVERSIVE ACTIVITIES AGAINST SERBS AND SERBIA .....	439
<b>Ilijazi Venezija</b> INFORMATION SECURITY MANAGEMENT SYSTEM (ISO 27001) .....	447
<b>Meiying Geng</b> RESEARCH ON THE CONSTRUCTION OF SERVICE-ORIENTED PUBLIC SECURITY ADMINISTRATION .....	457

## METHODOLOGICAL AND ETHICAL CHALLENGES IN CRISIS AND DISASTER RESEARCH <sup>1</sup>

Full Professor **Želimir Kešetović**, PhD  
Faculty of Security, University of Belgrade  
Full Professor **Srđan Milašinović**, PhD  
Academy of Criminalistic and Police Studies, Belgrade  
**Mladen Mrdalj**  
Ministry of Interior of the Republic of Serbia

**Abstract:** The history of civilization essentially represents an uninterrupted series of conflicts and periods of stability and peace, moving from radical to moderate streams, from barbarism to progress. Traditions of liberal learning have been severely shaken by the global 2008 economic crisis and the human intelligence became a weak instrument in front of the onslaught of new mega corporations willing to profit and seize new markets, undermining the objective rules of the morality. The security of the planet is at risk, and the managing, designing and dosing of the crises and disasters becomes part of the potential disintegration arsenal as a tool to seek new markets and implications. Disoriented and disillusioned people, by seeking new bases and values, easily succumb to impose “revolutions” that suppress the mind, emphasizing conflict paradigm that precisely opens massive manipulation gaps, spreading spiritual crisis and social pathology. Therefore, the twenty-first century society is in a continuous state of uncertainty, collapse, divisions and paranoia, which favours further spread of violence and insecurity, so crisis management remains as one of the global security barrier.

**Keywords:** crisis, disaster, political context, methodology, research, safety.

### CRISIS AS A THEORETICAL PROBLEM

From the beginning of time, people in different ways tried to prevent, avoid or at least mitigate various types of dangerous and undesirable situations and to manage crises. Hatred of others, envy, material inequality, religious diversity, myths and conspiracy theories are just part of the propaganda arsenal, which explains why the solution should be sought in situations of conflict and war. The concept of crisis has evolved and developed during the time, and its meanings were often changed while its vertical and horizontal expansion and application spread rapidly even today including different situations and aspects of social life. Crisis management is both as a term and as a concept, a product of the twentieth century. In fact, the origin of the term *crisis management* is in the political sphere. <sup>2</sup>

Crisis management as a science is still in its early life, largely because of the difficulties in measuring, standardization and comparison of crisis situations. In addition to the general lack of consents of the crisis management measures and vocabulary, many organizations have difficulties to release the information about the structural weaknesses of management. There are real environmental sanctions - such as legal and market - acting against the current trends of transparency and accountability.

It must be recognized that the rigidity of the scientific method is not always applicable in crisis situations. It does not fit in according to Karl Popper, generally accepted criteria for the classification of an activity as a scientific activity. In addition to the complexity (and, to some extent, uncertainty) of the concept of crisis and disasters, there are two very significant aggravating factors that make the scientific research of these phenomena almost impossible, given by Bertrand Robert and Chris Lajtha (Robert and Lajtha, 2002). Here is the point:

<sup>1</sup> This paper is part of the research Project No. 47017 *Security and protection of management and functionalization of the educational system in the Republic of Serbia* (basics, principles, protocols, procedures and tools) implemented by the Faculty of Security Studies, University of Belgrade, and was funded by the Ministry of Education and Science of the Republic of Serbia.

<sup>2</sup> It is claimed that U.S. President John F. Kennedy first used this phrase during the Cuban crisis in 1962 when the U.S. confronted the Soviet Union due to installation of Soviet nuclear warheads missiles in Cuba leading the world to the very edge of the World War III. In that way, Kennedy described the management of a serious, emergency situation. (Milašinović, Kešetović:2011).

- Crisis is an event that is relatively rare. As a result, many forms of numerical validation or statistical approaches are, therefore, much harder applicable;
- Crisis is an event that cannot be reproduced. Each crisis situation is unique. The idea of its reproduction or the ability to reproduce the event in experimental conditions is not valid. In that sense it is not possible to carry out successive and hypotheses tests based on an identical experience;
- It is not possible to detect the error in the existing and proposed theories. No one can prove without a doubt that the different treatment of the crisis had a different (acceptable) result;
- It is not certain that a real life experience would really look like that set in the scientific model. Fabricated crisis are impossible to be tested in real life;
- Experiments with living subjects are not an option. For obvious ethical reasons it is not possible to set the explosion at an industrial plant or launch a biological attack, in order to measure the effects of different responses to these events;
- The price of experiment is unacceptable. When wagers include human lives and the great impact on social infrastructure, experimentation is simply unthinkable; and
- Researchers earn for living by publishing. Very few decision makers are willing to open their doors to researchers and permit them to observe and write about how they manage the crisis. When the crisis is in its so-called acute phase, crisis researchers are omitted from crisis command center.

Second, researchers are rarely allowed and permitted to witness the crisis itself.

- Even when researchers are invited they tend to question managing models and beliefs. They have a number of uncomfortable questions, while managers want immediate advice for action ("I called you to give me a solution, not to question me."). And that's why researchers are not invited.
- In the stage of collecting feedback information, the available information is partial and flawed. Power play, potential legal repercussions can cause lack or corruption of information.
- As witnesses' experts, researchers may be forced to answer questions made by public authorities (boards of inquiry, courts, etc.) on how to manage the crisis and the quality of crisis preparation, which may have implications to the members of the crisis team and the responsibility of the company or organization affected by the crisis.
- Paradoxically, pre-crisis phase of the crisis are more accessible to researchers because they appear to have fewer barriers. However, very few organizations are interested in this phase of crisis management.

Based on the presented it is possible to understand why there is a relatively small number of researchers in the field of crisis and crisis management.

Basically, crises and disasters researcher faces with the same methodological problems as well as researchers in all areas of behavioural and social sciences research. However, the crisis situation itself creates new and specific problems or increases standard and already known ones that the researcher has to deal with. (Killitm, 1956). The main tools in the crises and disasters research - a theory, a hypothesis, an appropriate research design, selection plan for the research study, a strategy for collecting data or documentation of observations, and the way to understand the meaning of the collected material - are more or less recognizable and similar to those used in other social sciences.

The main difference between the research of crises and disasters and other phenomena is primarily in the context in which it is implemented (Mileti, 1987:69; Taylor, 1978:276). The bigger differences between normal (everyday) situation and the context in which other studies are conducted in the social sciences and the context of the crisis, the greater the challenge for researchers (Stallings, 2002b :21-22). This means that the research carried out during the period of acute crisis is facing the challenges which are not in phase prior to the crisis (the mitigation and preparation), but also after the crisis has passed (in the later stages of recovery from past crises).

The core of the difference between "normal" and the research during everyday conditions and research in crisis conditions, Stallings reduces to:

- (1) Time, that is when the process of observation and data collection and other material begins with regard to the beginning of the crisis/disaster;

(2) Access, which refers to the initial contacts of researchers with subjects that are to be interviewed, the respondents in the survey and those who have documents and other relevant materials; and

(3) Generalizability, or what the Killian calls the ability to draw valid conclusions from studies of crises and disasters (Killian, 2002:56).

While many of these problems have only partial solutions, triangulation of certain research patterns that use different methods of disaster research can provide valid conclusions. Of course, these three dimensions are interrelated: the ability to generalize research findings of individual crises and disasters is directly affected by successful solving of the problem of timing and approach, while the access to the relevant subject is associated with the issues of the time dimension. (Stallings, 2007:56)

## ETHICAL DIMENSIONS OF CRISIS AND DISASTER RESEARCH

Ethical concerns related to the consequences of researchers actions during and after the disaster, during the research process, and even after the research formally ended. Most important questions concern the impact of different forms of data collection on the lives of the investigated subjects.

Ethical research standards for (and for universities IRB<sup>3</sup>) can be expressed by the phrase “do not harm” (Babbie, 1995:449-450). However, during the crisis the researchers themselves are involved in lives of people in the worst possible moments. The question of their special responsibilities during interviewing process arises as the investigated subject lost their loved ones, became roofless and/or without their property. The same questions can be asked when the individuals and services that directly respond to the crisis situation and trying to direct it, are observed.

Researchers usually considered this acceptable and necessary to gain knowledge that can be used to reduce human suffering and improve crisis responses in the future. Physical, psychological and emotional price of this research is allocated to different subjects.<sup>4</sup> This raises the dilemma of how deep to question and press the disaster victims, whether some questions should be avoided, whether to terminate or continue the interview if the emotions prevail and later on try to continue, whether researchers should accept the participation in some tasks of the crisis response if they are asked by the members of the relevant services, and that there is no one else to do so.

Another kind of problem arises when researchers collect data, information and documents that they sought for. One question is related to confidentiality. After the subjects were assured that their statements and comments remain confidential, would the researchers keep their promises? When presenting the results of the victim, it can be specified with a number of characteristics that describe his/her social status (such as “29-year old single mother of four who lost her home”), but how to conceal the identity and preserve the confidentiality of observations of mayor or police chief when the data presented are related to their actions during the crisis? In countries like the United States, courts do not recognize the data obtained by the researchers from their subjects as a form of “privileged communication”, as in the case of priests and lawyers. (Babbie, 1995:451). What is that researchers can promise to the interviewed subjects about what will happen to their observations, and who would later have access to them?

In most discussions concerning the research ethics, the starting point is the fact that researchers are trying to maintain a neutral or unbiased position, at least when it comes to their research role. However, the temptation of crises and disasters researchers to take one’s side is especially great. This dilemma, of course, is not unique just for the disaster research, but also is present, for instance, in studies of social problems and deviant behaviour.

<sup>3</sup> Institutional Review Board - IRB, also known as the Independent Ethics Committee - IEC) or Ethical Review Board - ERB is the unit formally established to approve, threat and review biomedical and behavioral research in which people are included. In the U.S. Food and Drug Administration - FDA and Department of Health and Human Services authorized the IRB to approve, require changes in scheduled research prior to their approval or to prohibit research. IRB are responsible for critical insight of the researches that include human subjects.

<sup>4</sup> This does not mean that the researchers themselves do not pay for the research since they witnessed human suffering and physical destruction immediately after the disaster strikes. The key difference is that, in the case of researchers, this is the result of their decision to expose themselves to the disaster, but not of their subjects. While researchers can return to normal life within a few days, those affected by the disaster will longer live with its consequences, quite often for a lifetime.

Sufferings of the disaster victims are striking. Emotional testimonies often, implicitly or explicitly, are pointing to errors and omissions in the conduct of the relevant organization in charge of handling the crisis, as well as the predatory practices of local, national and international officials and organizations. In this context, it is very tempting to look at the influence of sympathetic stories of disaster victims in contrast to the view of unfeeling bureaucrats, especially with regard to the shifting of the focus of research to vulnerable populations in crises and disasters (children, elderly, women and the poor). However, taking one's side does not change the purpose of the research, which was a disaster, as in all other social sciences, it is an understanding of the world around, through finding patterns, development and phenomena patterns. To achieve this goal the words and statements of the investigated subject must be treated as "data" that have to be interpreted and understood, and not as an objective reflection of the reality. This applies to all subjects regardless of their location and position in the social hierarchy, or the specific circumstances in which they were in the disaster.

Research contribution to knowledge about disasters and reduction of human suffering is greater if researchers distance themselves from the event, rather than if they are engaged with them during the research. The superiority of this research position is a clear overall picture of events that can be obtained this way. At the same time, it does not mean the exclusion from the event in other aspects of professional and private life, although it is not quite easy to distinguish.<sup>5</sup>

Ethical problems related to the crises and disasters research are more visible in the events that have become controversial in the political sense. Accusations, suspicion and finger-pointing to the researcher makes the researcher in some sense more evident for all parties involved, both in the data collection phase and later phases.

At the time when the interviews were conducted, with collected data and obtained documents, the most serious ethical dilemma can appear in front of the researcher, of which the critical one is to maintain the key promises of confidentiality given to the subjects, and that sometimes can have legal consequences. So, Tierney describes the experience of several investigators that the company Exxon sued in connection with their investigation after the oil spill from the tanker Exxon Valdez in Alaska, which caused one of the biggest environmental disasters in history. She also points to the increase of SLAPP (Strategic Lawsuit Against Public Participation) suit whose intention was to intimidate critics, to silent and financially burden them. (Tierney, 2002b :356-357). At the heart of this lawsuit is the access to research data, including the identity of the subjects. There is no consensus among researchers whether it is possible to protect the identity of the investigated subject and whether it is something ethically to promise, considering the current legal climate, particularly after the events of September 11<sup>th</sup> when it comes to movement of privacy and extension of the rights of the state authority.

Certain changes in the field of crisis and disaster research have been accelerated by the terrorist attacks on the United States in 2001 and have made the crises and disasters research more difficult. The most prominent are those related to the demands expansion and precise rules and conditions made for the university IRB. The assumption is that the disaster victims, such those 9/11 survivors, went through serious emotional trauma that made them fragile and that they need special protection from the researchers.

Research manager is required to assure that the project results would bring practical benefits, a written description of the project with a clear indication that participation in the survey is voluntary, printed and signed permission form and detailed description of the approach and handling with the data collection, how they will be kept and to whom (and under what conditions) will be available. Previous approval regime can shift the beginning of the research which in crisis situations can have consequences, since some phenomena and reactions are elusive and immediate.

<sup>5</sup> Even Max Weber pointed out that researcher's personal values affect the selection of research topic and that not only in social science research is driven by practical problems, but also that the practical problems arise from the personal values of the researcher. But he points out that scientific objectivity is not the same as moral indifference. But the research methods in social sciences, whether applied to the study of disaster or some other topic, will not produce empirical results that will point to the "correct" course of action (Weber, 1949). Based on this, Gusfield notes that research in the social sciences cannot solve social problems or solve the moral and political conflicts. It is more likely that research results extend our understanding of alternative interpretations of events and choices of possible solutions. When these choices include recommendations on what is to be done concerning the disaster, then personal values and beliefs of the researcher are included within. As long as this is clear to researchers and others, a line between involvement and dissociation from the events is maintained. (Gusfield, 1984:48)

Individual self-organization and self-protection tendencies have been intensified. The organization seeks not only to manage their public image, but also to move toward the researchers (Tierney, 2002b :359-362), so that some researchers have the impression that, in the mentioned context, the investigated subjects' fear of revenge of their superiors in the organization has increased. Also, the lower level hierarchy members within the organization more often avoid researchers, and the story vision and image is given by the ones at the commanding positions.

The most evident effect of 9/11 on disasters research is the increased security concerns in key organizations responding to the crisis. Access to crisis operation centers where researchers can observe first-hand operations and make initial contacts for future interviews and collect the document has become very difficult. Conducting formal interviews in organizations that are also concerned about the security is no longer as simple as it was.

## TOWARDS A METHODOLOGICAL FRAMEWORK FOR THE CRISES AND DISASTERS RESEARCH

There is a need for research studies that would follow different paradigms in order to improve our understanding of crises and crisis management, that include:

- The application of chaos theory and complexity to the crisis and disaster;
- Positivistic approaches in order to quantify levels of readiness and reactions to crises and disasters and to help in predicting incidents through modelling using computer simulation;
- Phenomenological approach in order to explore the attitudes and opinions of managers in the public and private sectors on the management of crises and disasters; and
- Case studies in order to test models and concepts of the crisis management surroundings.

Such research approaches should provide additional insight into crises and disasters and contribute to better understanding of the chaos and changes, which probably helps industry and public sector to accept these incidents as part of everyday life and to get ready for them and plan, when they happen, how to operate in a strategic and holistic manner, minimizing their negative consequences for the economy and society. As the crises and disasters multiply, the managers and planners skills in both private and public sectors will be increasingly important.

As part of a research project Management and Leadership in Crisis, among others, a practical goal of creating a unified methodology for the study of management and leadership in a variety of crises has been set. This methodology would represent the foundation and the starting point for studies of individual crises and crisis management and leadership in the Republic of Slovenia. In that sense, the Reminder for crisis management and leadership study was designed.

The Reminder is made on the basic understanding of the crisis, in which the crisis is set as an actual threat to the basis and norms of the social system and its subsystems. For crisis, a time pressure and unclear circumstances that require rapid decisions of the relevant individuals, agencies and institutions, are of importance. The process of making and implementing decisions often require different institutional paths and connections than usual or approved for normal non-crisis conditions and require activation of previously set mechanisms of the crisis management leadership. The crisis is closely bounded with the phenomenon called crisis management and leadership, which can be defined as the design procedures, agreements and decisions that affect the course of the crisis, and the scope, organization, preparation, action and resource allocation in order to conquer it. Crisis management and leadership normally takes place in the organizational chaos, under mass media pressure, in stressful conditions and in the lack of accurate information, with just few most important features.

The Reminder is methodologically primarily derived from cognitive-institutional approach to the study of crises and crisis management and leadership, which is being developed within the framework of the European Crisis Management Academy and research project Crisis Management in Europe. Cognitive-institutional approach focuses on the analysis of numerous individuals, groups, networks and institutions in crisis and in that sense represents the perception, knowledge of people skills, dealing with crisis, as well as group and institutional framework in which decisions are made. In addition, during the preparation of the Reminder, other relevant methodological approaches, especially functional, systemic and symbolic-political, were also valued in order to develop a case study.



The Reminder therefore is an instrument for studying crisis management and leadership and consists of variables and indicators. Variable represents a narrow assembly composed of individual indicators. Indicators are analytical results for the various crises analysis such as natural and man-made disasters, military, technological, environmental and economic crisis, terrorist attacks and other crises. There are numerous crisis appearances and its consequences, and it is very difficult to formulate universal understanding of the crisis and crisis management and leadership. The scientific literature states that there are various crises and, with them the associated crisis management and leadership that have some common elements, such as vulnerability of the fundamental values of the entity to whom the crisis is addressed, limited time for decision making, uncertainty and stress of actors of the crisis management and leadership. The Reminder, in this sense, lists elements (degrees and indicators) that are common to most of the presented crisis.

The Reminder allows multistage studies of crisis and crisis management and leadership, and in particular:

1<sup>st</sup> degree: situating a single crisis in the historical, political, geographical and administrative system context;

2<sup>nd</sup> degree: establishing a time frame and a crisis description;

3<sup>rd</sup> degree: crisis partition into special situations or moments that require crisis decision;

4<sup>th</sup> degree: repeated overall crisis review with all its complexity, such as the use of a holistic approach.

Each level has more analytical terms, variables and indicators that represent analytical guidance during the particular crises research. An attention must be paid while trying to understand the indicators' general nature, so it is possible to provide the Reminder guide for analyzing of different crisis. It has to be clear that it is not possible, from the point of the set indicators, to study all potential crisis, as some crisis are simply not enough complex or the information availability will simply not allow it. On the other hand, some crises require further specific degradation of indicators, since every crisis, besides the general and common features, has its completely distinctive situational and contextual features.

In addition to the crisis management and crisis management and leadership division to different levels, analytical special topics decomposed to a number of variable and indicators can be established. These analytical themes include prevention and awareness of the crisis, the identification of actors of the crisis management and leadership, crisis perception, crisis management and decision-making process, political and organizational cooperation and conflict, crisis communication (collection and information processing, technical information systems, crisis communication with the public media and its role in crisis and crisis management and leadership), the crisis internationalization, the effects of the crisis time frame, the cost of the crisis, crisis management and leadership, as well as gaining experience and knowledge. The practical limit on the number of analytical issue is the crisis nature itself, researchers risk interest, the availability of data and the time available for the crisis analysis.

In addition to that, the Reminder with identified levels and analytical issues and with associated variables and indicators, primarily allows the *post festum* analysis (after the event) of the crisis and its management and leadership. To a certain extent, it was also possible to use it *in situ*, namely within the crisis itself. The analysis of crisis and crisis management and leadership by the Reminder allows the creation of report related to the specific crisis management and leadership, which together can form a national database of the examples of crisis management and leadership. Reminder is designed so that, on the basis of statements about various crises, it is possible to perform primarily qualitative (to a limited extent also quantitative) comparisons of content components (analytical levels, variables and indicators). Comparative analysis of this kind can further help in post-crisis knowledge achievement of crisis management and leadership institutions.

We know different methods of collecting and analyzing empirical data in order to make a case study of crisis management and leadership, therefore it is necessary to identify them first. During the analysis of the crisis and crisis management and leadership, a great number of primary and secondary sources appear, among which the most important are: official documents (meetings records, facts statements, diaries, testimonies, authorities findings, the official opinions, the analysis of the system actions, etc.), press releases, published technical analysis, technical and scientific articles,

newspaper articles and news releases on the Internet, in broadcast forms (TV, radio) and in print media. The analysis of the contents of these documents is the basis for the analysis of crisis management and leadership. Extremely useful method is interviewing the responsible actors of crisis management and leadership, which results should be used as a supplement in content analysis of documentary sources listed above. In this sense, it is necessary to highlight especially very useful group interviews with actors of the crisis management and leadership ("symposium story"), with which it is really possible to get a complete picture of the crisis extent, the crisis perception, relationship between the actors and so on.

Some actors in fact see only a partial picture of crisis management and leadership, so that their confrontation allows them to complement and sharpen the real picture. Descriptive and comparative methods are infallible in listing, describing and confronting events and processes, important from the point of crisis management and leadership. Significant method is also a secondary analysis of statistical data that are related to the crisis and its resolution. To fulfil the Reminder successfully, it is important that different methods of collecting data and information, their selection and usage, are in accordance with the analytical levels, subjects, variables and indicators.

Endemic nature of modern crisis is a part of the political and social context. The agreements will be more difficult to reach when it comes to identification, definition and assessment of the crisis and its consequences. Different crises may be the product of different critical paths. The old order is violated, and about the new one we have to negotiate. The assumption that the crisis is the first step toward a future of many alternatives, and that the point where we will arrive in the future depends, at least partly, on the response to the crisis, substantially raises the importance of crisis decision-making process. This requires a lot of political skill in order to transform crises and disasters form threats and accidents into an opportunity, and political advantage.

## CONCLUSION

Public management in crisis and disaster management is becoming increasingly important and essential task of contemporary society. By the fact that it represents a serious threat to the structure of political or safety systems, which under the pressure of deadlines and complex security conditions require quick vital decisions, the management crisis involves the strategic knowledge, prediction and control of the uncertain situation at all levels. Technological revolution transformed the term of time and space, so that crises and conflicts adopt international character, while solving models include sophisticated integration and security services, and related systems. Cooperation becomes imperative, exchange of information and intelligence data requirement for success, while expenses of management must be transparent in order to ensure full public support.

In a liberal democracy, security services and its promoters must have control over the crisis development and the extent of the disaster, whether it was in the context of the political, legal or moral order. The methodology of crisis management requires entire and permanent engagement process, which with competence, knowledge and training guarantees the successful overcoming of the conflict. This means that success is guaranteed by the uniqueness of the team and its actions, while the leader has the role of a coordinator who oversees the development of all five strategic phases: identifying the crisis, making vital decisions, reducing uncertainty and good publicity to the public, prompt and successful completion of the crisis, and, bringing instruction as inheritance of planning and training for future crises!

Crises are a potential training ground for the reform of public policy, since every lessons learned from it serves to the future generations. The old way of controlling them in a time of technological and global transformation is no longer possible, while public policy can survive only if quickly breaks it or minimize its effects. Routines that were once the privilege of the security services are increasingly becoming levers in the hands of people who drive the media content and the capacity of public attention. The crisis management is therefore moving in the institutional structure overseeing crisis situation, and creating a strategy to overcome it. Crisis and disaster planning is a responsible and important process: the illusion is that they will disappear on their own - they have to be predicted, controlled and resolved!

## REFERENCES

- [1]. Babbie, E. (1995). *The practice of social research* (7th ed.). Belmont, CA: Wadsworth.
- [2]. Boin, A., Hart, P., Stern, E. i Sandelijus, B.(2010): *Politika upravljanja krizama*, Belgrade: Gazette/Faculty of Security Studies, Faculty of Security Studies, Belgrade, 2010, p. 92.
- [3]. Gottschalk, J. (2002), *Crisis management*, Oxford Capstone Publishing.
- [4]. Hood, C.: "The Risk Game and the Blame Game", *Government and Opposition*, Vol. 37, No. 1, 2002, pp. 15–37.
- [5]. Kešetović, Ž., (2008). *Krizni menadžment*, Belgrade: Faculty of Security Studies/Gazette.
- [6]. Killitm, L.M. (1956). *An Introduction to Methodological Problems of Field Studies in Disasters*. Washington, D. C.: NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL.
- [7]. Malešič, M., Prezelj, I., Kopač, E. i Groselj, K. (2004) "Opomnika za preučevanje krizneg upravljanja i vodenja" u Malešič, M. (ur.) *Krizno upravljanje in vodenje v Sloveniji izziv in priložnost*, Ljubljana: Fakulteta za družbene vede.
- [8]. Milašinović, S., Kešetović, Ž., (2011) *Krizni menadžment u istorijskoj perspektivi*, Belgrade: The Academy of Criminalistic and Police Studies.
- [9]. Mitroff, I. (2000) *Managing Crises before they happen*, New York: AMACOM.
- [10]. Poper, K. (1973). *Logika naučnog otkrića*. Belgrade: Nolit.
- [11]. Robert, B., and Lajtha, C. (2002). "A New Approach to Crisis Mangement", *Journal of Contingencies and Crisis Management*, Vol 10, No 4, 2002, pp. 181-191.
- [12]. Ritchie, B.W. "Chaos, crises and disasters: a strategic approach to crisis management in the tourism industry", *Tourism Management* 25 (2004) 669–683.
- [13]. Stallings, R.A., (2007). "Methodological Issues" in Rodriguez, H. Quarantelli, E.L., and Dynes, R.R. (eds) *Handbook of Disaster Research*, New York: Springer.
- [14]. Seeger, M. W., Ulmer, R. R., Novak, J. M., Sellnowp, T.: (2005) "Post-crisis discourse and organizational change, failure and renewal", *Journal of Organizational Change Management*, Vol. 18 No. 1.