

International thematic proceedings
FUNDAMENTAL RESEARCHES

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Publisher

The Institut for Serbian Culture, Pristina – Leposavic

Co-publisher

**International Association of Social Science Methodologists, Belgrade
MB University, Belgrade**

For the publisher

**Professor Dragan Tancic, PhD, director
Academician Professor Nedjo Danilovic, PhD, president
Professor Milija Bogavac, PhD, founder and owner**

Edited and prepared by

**Academician, Professor Nedjo Danilovic, PhD
MB University Belgrade**

**Professor Dragan Tancic, PhD
Institute for Serbian Culture, Pristina – Leposavic**

Reviewers

**Academician professor Dževad Termiz, PhD
University of Sarajevo, Faculty of Political Sciences, Sarajevo, Bosnia and Hercegovina
Akademician Professor Wolfgang Rohrbach, PhD
Regular member of the European Academy of Sciences and Humanities (AASA), in Salzburg
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Professor emeritus Ljubiša Mitrović, PhD
University of Nuš, Faculty of Philosophy
Prof. dr Venelin Terzijev
Ministry of Culture Republic of Bulgaria, Sofia**

Proofreading

Jelena Vojinović Kostić

Technical preparation and graphic design of the text

Miodrag Panić

The press

GID „Pi-press“, Pirot

Circulation

150

ISBN 978-86-89025-86-6

The holding of the international thematic scientific conference and the publication of this Proceedings were organizationally and financially supported by the Ministry of Education, Science and Technological Development of the Republic of Serbia, Academy of Sciences and Arts of Serbian, Institute for Serbian Culture from Pristina - Leposavic and MB University from Belgrade.



ИНСТИТУТ ЗА СРПСКУ КУЛТУРУ ПРИШТИНА – ЛЕПОСАВИЋ
INSTITUTE FOR SERBIAN CULTURE PRISHTINA – LEPOSAVIĆ



The Institute for Serbian Culture, Priština – Leposavić

International Association of Methodologists of Social Sciences, Belgrade

The MB University, Belgrade

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Leposavić, 2023.

CONTENT

Begrüßungsrede des Akademikers Prof. Dr. Wolfgang Rohrbach, Mitglied der Europäischen Akademie der Wissenschaften und Künste aus Salzburg	9–10
FOREWORD	11
INTRODUCTION	17
 1. Dragan Lj. Tančić Vanda B. Božić BASIC RESEARCH ON VIOLENCE IN SPORTS FROM THE ASPECT OF METHODOLOGY OF SOCIAL, POLITICAL AND CRIMINAL-LEGAL SCIENCES	 21
2. Ljubiša R. Mitrović THE POSITION OF SOCIAL AND HUMANISTIC SCIENCES AND THEIR ROLE IN DEVELOPING CRITICAL AWARENESS AND BUILDING ALTERNATIVE PROJECTS OF SOCIAL CHANGE (Marginalia on the importance of fundamental and transdisciplinary research and deontology of the profession of a scientist)	 41
3. Nedo S. Danilović FUNDAMENTAL RESEARCH ON WAR AND ITS SIGNIFICANCE FOR THE PROGRESS OF GLOBAL COMMUNITY AND PROSPEROUS DEVELOPMENT OF MODERN COUNTRIES	 61
4. Dževad R. Termiz SPECIFICITY OF MODELING THE SUBJECT OF JOURNALISM SCIENCE RESEARCH AS A RESULT OF ITS FUNDAMENTAL RESEARCH	 91
5. Aleksandar A. Halmi SOCIOCYBERNETIC AND CHAOS THEORY: A NEW POSSIBILITIES FOR FUNDAMENTAL RESEARCH	 103
6. Boris Đ. Krivokapić FUNDAMENTAL RESEARCH IN THE SCIENCE OF INTERNATIONAL LAW	 117

7. **Nevad H. Kahteran**
 PROMOTING COMPARATIVE PHILOSOPHY AS A GENERAL
 CROSS-TRADITION ENGAGING WAY OF DOING PHILOSOPHY
 TOWARD WORLD PHILOSOPHY 153
8. **Dušan B. Regodić**
Damir D. Jerković
 MODELING AND SIMULATION OF DYNAMIC SYSTEMS
 IN THE FUNCTION OF BASIC RESEARCH IN TECHNICAL
 AND TECHNOLOGICAL SCIENCES 171
9. **Wolfgang R. Rohrbach**
 BEDROHUNG DER MENSCHHEIT DURCH VIER
 MEGA-SCHOCKWELLEN 205
10. **Venelin Terziev Krastev**
 СТРАТЕГИЧЕСКОЕ УПРАВЛЕНИЕ В УСЛОВИЯХ
 ГЛОБАЛЬНОГО КРИЗИСА 221
11. **Vojislav R. Babić**
Siniša Đ. Zarić
 THE ESSENCE OF FACTOR ANALYSIS AND ITS
 APPLICATION IN ECONOMIC SCIENCES 229
12. **Artur Gennadievich Bezverkhov**
Svetlana Vyacheslavovna Elekina
 LAW IN THE DIGITAL AGE 245
13. **Milosav V. Milosavljević**
 PERSPECTIVES OF BASIC RESEARCH 255
14. **Momčilo J. Sakan**
 THE SCIENTIFIC ROLE OF HYPOTHESIS
 IN FUNDAMENTAL RESEARCH 269
15. **Ivan B. Petrović**
Miodrag L. Gordić
 EVALUATION OF CRITERIA FOR SELECTION OF WEAPONS
 SYSTEM USING TRIANGULAR INTERVAL TYPE-2 FUZZY SETS
 IN PROCESS OF MULTI-CRITERIA DECISION MAKING 285
16. **Srdan V. Starčević**
Srdan M. Blagojević
 FUNDAMENTAL RESEARCH IN SOCIAL SCIENCES
 AND PUBLIC INTEREST 297
17. **Nataša N. Stanojević**
 THE CONTEMPORARY PROCESSES IN THE GLOBAL
 ECONOMY AND METHODOLOGY OF ECONOMIC SCIENCES 307

18. Olja M. Arsenijević Nenad N. Perić INTERDISCIPLINARYNESS AND DIFFERENT APPROACHES OF CRITICAL DISCOURSE ANALYSIS	319
19. Ermin H. Kuka DESIGN OF SCIENTIFIC RESEARCH OF PUBLIC POLICY AS A RESULT OF FUNDAMENTAL RESEARCH IN THE METHODOLOGY OF POLITICAL SCIENCE	333
20. Detlev H. Baumgarten NEW DEVELOPMENTS IN THE CARE SECTOR NURSING ROBOTS AND THEIR USE IN THE PATIENT ENVIRONMENT	347
21. Marko M. Parezanović ПРИМЕНЕНИЕ АНАЛИЗА СОДЕРЖАНИЯ ДОКУМЕНТА В ИССЛЕДОВАНИИ ПОЛИТИЧЕСКИХ ПЕРЕВОРОТ	363
22. Dragana J. Janjić Goran M. Janićijević CONTEXTUALIZATION OF MEDIEVAL MONUMENTS OF CULTURE AS A METHODOLOGICAL STARTING POINT WITHIN THE FRAMEWORK OF THEIR INTERPRETATION ON SELECTED EXAMPLES FROM KOSOVO AND METOHIIJA	379
23. Gerhard Wilfinger LIVING STANDARD AND QUALITY OF LIFE IN URBAN	407
24. Milivoje G. Pajović FUNDAMENTAL RESEARCH AS A STARTING POINT APPLIED AND OTHER RESEARCH	421
25. Goran M. Džafić Aleksandar M. Damnjanović FUNDAMENTAL RESEARCH OF NETWORK COMMUNICATION IN CRISIS MANAGEMENT OF THE REPUBLIC OF SERBIA	433
26. Vesna S. Zarković THE SERBIAN ISSUE IN THE CONTEXT OF THE SUFFERING OF SERBS IN KOSOVO AND METOHIIJA AT THE END OF THE 19TH AND THE BEGINNING OF THE 20TH CENTURY	451
27. Ena S. Mirković KOSOVO AND METOHIA IN THE DOCUMENTS OF THE PRIME MINISTER BLAGOJE NEŠKOVIĆ (1945–1952) AS AN EXAMPLE OF METHODOLOGICAL ANALYSIS OF HISTORICAL SOURCES	471

28. **Jovan D. Simijanović**
TREPČA IN THE ECONOMY OF YUGOSLAVIA(1927–1956) 485
29. **Ivana Ž. Ivanovik**
THE IMPORTANCE OF SCIENTIFIC RESEARCH PROJECTS
FOR THE DEVELOPMENT OF MODERN COUNTRIES 505
30. **Gordan B. Bojković**
SERBIAN MEDIEVAL STUDIES ABOUT KOSOVO
AND METOHIA, THE PREVIOUS THIRTY YEARS 513
31. **Vlado N. Radić**
Nikola V. Radić
IMPACT OF THE CRISIS ON ENERGY SECURITY
AND AVAILABILITY OF STRATEGIC MATERIALS 525
32. **Nikola P. Jović**
Katarina Bogičević
Andrej Naumović
CITIZENS' PERCEPTION OF SERBIA'S FOREIGN POLICY
THROUGH THE PRISM OF CULTURAL AFFILIATION
TO THE EAST/WEST 549
33. **Jovan M. Gordić**
Predrag M. Gordić
IMPLEMENTATION OF METHODS, TECHNIQUES AND
INSTRUMENTS IN FUNDAMENTAL RESEARCH OF LAW 563
34. **Teodora G. Deljanin**
THE ASSOCIATION OF LOW SOCIAL STANDARD OF THE
FAMILY AND FAMILY PARTICIPATION IN THE LIFE OF
ADOLESCENTS WHO USE PSYCHOACTIVE SUBSTANCES 577
35. **Alojz A. Riegler**
THE GREEN CITY – PREVENTING OVERHEATING
NATURALLY 593
36. **Petar R. Ristanović**
HISTORY AND/OR PROPAGANDA: THE BOOKS BY
TIM JUDAH, NOEL MALCOLM AND MIRANDA VICKERS
ON KOSOVO AND METOHIA 609

**Begrüßungsrede des Akademikers Prof. Dr. Wolfgang Rohrbach,
Mitglied der Europäischen Akademie der Wissenschaften
und Künste aus Salzburg**

Meine Damen und Herren,

zunächst möchte ich Sie herzlich begrüßen und mich für die Einladung durch den Präsidenten der Internationalen Vereinigung der Methodologen der Sozialwissenschaften in Belgrad, Akademiker Prof. Dr. Dr. Neda Danilović und durch den Direktor des Instituts für serbische Kultur, Prof. Ph.D. Dragan Tančić (die ich beide aus der Zeit kenne, als ich als Experte der Europäischen Union für serbische Privatversicherungen tätig war) danken. Ich danke für die Teilnahme an der hervorragend organisierten vierten internationalen wissenschaftlichen Konferenz zum Thema „Grundlagenforschung und ihre Bedeutung für die weltweite Menschheit sowie die Entwicklung des Wohlstandes in modernen Staaten“.

Meine mir dort -als Repräsentant der Europäischen Akademie der Wissenschaften und Künste sowie als Präsident der im Kulturschutz engagierten Organisation EUROPA NOSTRA AUSTRIA - übertragene Funktion als Mitglied des Wissenschaftlichen Beirats und Vortragender ist ein Höhepunkt meiner universitären Tätigkeit in Serbien.

Ich betonte in einem TV-Interview in Belgrad, dass ein großer Teil der in den vergangenen Jahren konstatierten Fehlsteuerungen in universitären Projekten auf den mangelnden Einsatz von methodologischen Maßnahmen zurückzuführen sei. Die nunmehrige Konferenz kann ein Umdenken in manchen Kreisen bewirken.

Im Plenum vor rund 50 Wissenschaftlern aus 15 Staaten präsentierte ich meinen Beitrag „BEDROHUNG DER MENSCHHEIT DURCH VIER MEGA-SCHOCKWELLEN (demografische, ökologische, ökonomische und technologische).“

Das genannte Thema ist von großer Bedeutung für die Zukunft der Welt und es wäre notwendig, dass es gleichzeitig Gegenstand der Grundlagenforschung in Serbien und Österreich wäre, weshalb ich Prof. Ph.D. Danilović und Prof. Ph.D. Tančić nach Wien für eine weitere Zusammenarbeit und den Kapazitätsaufbau bei der Umsetzung gemeinsamer grundlegender Projekte zu den brennenden Themen der Menschheit einladen möchte.

In diesem Zusammenhang grüße ich Sie noch einmal herzlich und wünsche der Konferenz eine erfolgreiche Arbeit.

Univ.Prof.DDDr. Wolfgang Rohrbach
Mitglied der Europäischen Akademie
der Wissenschaften und Künste (Salzburg)
Präsident von EUROPA NOSTRA AUSTRIA/
DONAU-UNIVERSITÄT KREMS

**Pozdravna reč akademika prof. dr Volkfanga Rorbaha,
člana Evropske akademije nauka i umetnosti iz Salzburga**

Dame i gospodo,

Želim prvo da Vas srdačno pozdravim i zahvalim se na pozivu predsedniku Međunarodne asocijacije metodologa društvenih nauka u Beogradu, akademiku prof. dr Neđi Daniloviću, i direktoru Instituta za srpsku kulturu, prof. dr. Draganu Tančiću, (obojuju poznajem još iz perioda kada sam radio kao ekspert Evropske unije za srpsko privatno osiguranje), da učestvujem na vrhunski organizovanoj Četvrtoj međunarodnoj tematskoj naučnoj konferenciji „Fundamentalna istraživanja i njihov značaj za progres globalne zajednice i prosperitetni razvoj savremenih država“, 14. oktobra 2022. godine u Domu Srpske akademije nauka i umetnosti u Beogradu.

Na Konferenciji učestvujem u svojstvu člana Naučnog i Programskog odbora Konferencije, predstavnika Evropske akademije nauka i umetnosti iz Salzburga i predsednika organizacije EUROPA NOSTRA AUSTRIA, koja se zalaže za zaštitu kulture. Članstvo u naučnom i programskom odboru Konferencije i učešće na Konferenciji Međunarodnog udruženja metodologa društvenih nauka vrhunac su mog naučnog i univerzitetskog rada u Srbiji.

U jednom televizijskom intervjuu u Beogradu naglasio sam da se veliki deo lošeg upravljanja naučnim projektima, koje je poslednjih decenija identifikovano, može povezati sa ne poznavanjem metodologije naučnog rada i neadekvatnim korišćenjem naučnih metoda, tehnika i instrumenata u naučnoistraživačkom radu. Ova međunarodna tematska naučna Konferencija može umnogome doprineti preispitivanju značaja metodologije za upravljanje naučnoistraživačkim projektima i prevazilaženju identifikovanih problema i slabosti.

Na plenarnoj sednici, nameravam pred više od 50 naučnika iz 17 zemalja sveta da iznesem svoje naučne poglede na moguće „PRETNJE ČOVEČANSTVU OD ČETIRI MEGAŠOK TALASA – DEMOGRAFSKI, EKOLOŠKI, EKONOMSKI I TEHNOLOŠKI“.

Navedena tema ima veliki značaj za budućnost sveta te bi bilo neophodno da ona bude predmet fundamentalnih istraživanja istovremeno i u Srbiji i u Austriji, zbog čega pozivam prof. dr. Danilovića i prof. dr. Tančića da nam se pridruže u Beču radi dalje saradnje i jačanja kapaciteta u realizaciji zajedničkih fundamentalnih projekata na goruće teme čovečanstva.

U to ime, još jednom, srdačno Vas pozdravljam i želim uspešan rad Konferencije.

Prof. dr Volkfgang Rorbah, akademik, Beč

FOREWORD

The modern world is characterized by the ever-increasing rise of the technological development of civilization, but also by the structural and systemic crisis of sovereign states. At the current level of development of human society, there has been a sudden expansion of natural and technical-technological sciences and the marginalization of the field of social and humanistic sciences. Practically, in front of the eyes of world science and numerous scientific institutions, uncontrolled processes of the destruction of world civilization are taking place, and scientists are silent observers, and quite often, participants in that process. The neoliberal market, uncontrolled globalization, cyber development and “free” media are gradually destroying the unity of society, nature and man in them and introducing it into a structural-systemic crisis.

The contemporary structural-systemic crisis is characterized by increasingly pronounced inequality between the North and the South, by mass poverty that affects almost half of the human population and most of the flora and fauna, by drastic fall of economic growth rates in most countries, by (un)controlled war conflicts and terrorism in all parts of the world, mass migrations, drastic disruption of the eco system, crime that destroys the social arteries of modern states, by dehumanization of society, non-compliance with the elementary norms of international law that lead to chaos in international relations, mass pandemics that escape the control of science and the managers of the global world order. The final effects of all these global processes are the spiritual and moral crisis into which modern civilization has fallen.

The way out of the structural-systemic, spiritual and moral crisis of the modern world can only be offered by the development of science and fundamental research based on the postulates of objectivity, reliability, generality and systematicity with the consistent application of scientific methods, techniques, instruments and procedures. Hence, to get out of the existing structural-systemic, spiritual and moral crisis of the modern world, the reaffirmation of scientific fields within the field of social and humanistic sciences as well as the methodology of social sciences and special methodologies of its scientific fields is of vital importance.

Starting from the prediction established on the basis of the monitoring of tendencies and observed trends in methodological research carried out at the end of the 20th and the beginning of the 21st century, and with the aim of encouraging the development of general and special methodologies of the sciences, at the end of the first decade of the 21st century, the International Association of Methodologists of Social Sciences was founded as a voluntary,

non-governmental, non-partisan and non-profit organization, with the main goal of permanently working on the following:

- 1) development and affirmation of social science methodology.
- 2) correct application of methodological knowledge in scientific research practice.
- 3) scientific-methodological education of research personnel and their promotion.
- 4) evaluation of scientific research, correct application of scientific-methodological knowledge and contribution to the development of that knowledge.
- 5) adequate participation of competent methodologists in scientific research of modern society, development of conditions for such research and their application.

The International Association of Methodologists of Social Sciences was founded with the aim of encouraging fundamental, applied and developmental research into social phenomena and processes, verifying existing and discovering new knowledge on the basis of which it is possible to ensure further political, economic, social and cultural development of modern countries and the global community as a whole. Any arbitrariness in the scientific research of social phenomena and processes naturally leads to incorrect results. The development of international relations so far has confirmed that the lack of scientific research can direct the processes of making global, regional and national decisions, as well as the behavior of social actors in accordance with such decisions in the wrong direction. The consequences of such a situation can last for decades, even centuries, and can, as a rule, lead to major global and regional crises, conflicts and the collapse of social systems in modern countries.

In order to avoid such strategic mistakes and ensure the full competence of fundamental, above all, prognostic and futurological research at the global, regional and national levels, it is necessary to rely on the methodology of social sciences and the special methodologies of scientific fields within them. Competent scientific research of contemporary social phenomena and processes can be successfully realized only with the support and help of leading methodologists and researchers from the field of social and other sciences. Therefore, it was necessary for methodologists and researchers to gather and organize within a professional international association with a clear mission, goals and tasks.

In creating a strategic mission, goals and objectives, and at the same time recognizing the importance of scientific research for the development of modern society, the International Association of Methodologists of Social Sciences launched a series of thematic international scientific conferences fifteen years ago entitled: *WHERE IS THIS WORLD GOING TO*. Selected papers from these conferences were, after independent reviews by recognized methodologists, published in separate international thematic collections.

The first thematic international scientific conference was held under the auspices of the Serbian Academy of Sciences and Arts in Belgrade on March 29, 2012, on the topic of *The role of prognostic research in the development of modern society*.

The second thematic international scientific conference was held under the auspices of the Academy of Sciences and Arts of Bosnia and Herzegovina in Sarajevo on June 13, 2015, and was entitled: *The role of futurology in researching the future of modern states*.

The third thematic international scientific conference was held under the auspices of the Serbian Academy of Sciences and Arts in Belgrade on November 15, 2019, on the topic: *The importance of applied research for the development of science and solving practical problems in modern society*.

The fourth thematic international scientific conference was held also under the auspices of the Serbian Academy of Sciences and Arts, in the ceremonial hall of the Academy of Sciences in Belgrade, on October 14, 2022, on the topic: *Fundamental research and its importance for the progress of the global community and the prosperous development of modern countries*.¹

1 The Scientific Committee of the Conference consisted of:

1) Prof. Dr. Nedo Danilović, President of the International Association of Methodologists of Social Sciences, President of the Scientific Board; 2) Academician Prof. Dr. Kosta Čavoški, President of the Academic Board of Social Sciences, Serbian Academy of Sciences and Arts, Belgrade; 3) Academician Prof. Dr. Ljubiša Rakić, President of the Academic Board for Biomedical Sciences, Serbian Academy of Sciences and Arts, Belgrade; 4) Prof. Dr. Marko Atlagić, Faculty of Philosophy in Kosovska Mitrovica, Serbia; 5) Prof. Dr. Marijana Đukić Mijatović, State Secretary of the Ministry Education, Science and Technological Development of the Republic Serbia; 6) Prof. Dr. Milija Bogavac, founder and owner of MB University, Belgrade; 7) Prof. Dr. Dragan Tančić, Director of the Institute for Serbian Culture, Priština – Leposavić, Serbia; 8) Prof. Dr. Nancy Russo, Northern Illinois University, De-Calab, Chicago, USA, Adjunct Professor, Malmö University, Sweden; 9) Prof. Dr. Uroš Šuvaković, University of Belgrade, Teacher Education Faculty, Deputy President of the Association; 10) Prof. Dr. Feng Liu, Zhejiang Wanli University, School of Business, Ningbo, China; 11) Academician Prof. Dr. Termiz Dževad, University of Sarajevo, Faculty of Political Sciences, Sarajevo, Bosna and Herzegovina; 12) Prof. Dr. Dušan Regodić, Rector of MB University, Belgrade, Serbia; 13) Prof. Dr. Aiwu Guan, Jiangsu University, School of Management, Zhenjiang, China; 14) Prof. Dr. Vojislav Babić, University of Belgrade, Institute for Sociological Research, Belgrade, Serbia; 15) Prof. Dr. Artur Gennadievich Bezverkhov, Director of the Legal Research Institute of the Samara National University „S. P. Koroleva”, doctor of legal sciences, honored jurist of the Russian Federation; 16) Prof. Dr. Srdan Blagojević, Dean of the Military Academy of the University of Defense, Belgrade, Serbia; 17) Academician Prof. Dr. Wolfgang Rohrbach, Danube University, Krems, Austria; 18) Prof. Dr. Vladimir Jatiev, Russian Academy of Lawyers and Notaries, Moscow, Russia; 19) Prof. Emeritus Dr. Ratko Zelenika, University of Rijeka, Croatia; 20) Prof. Dr. Srđobran Branković, Gallup Institute, Belgrade, Serbia; 21) Prof. Dr. Aleksandar Halmi, University of Zadar, Department of Tourism and Communication Studies, Zadar, Croatia; 22) Prof. Dr. Milisav Milosavljević, University of Belgrade, Faculty of Political Sciences, Serbia; 23) Prof. Dr. Jove Kekenovski, University of „St. Kliment Ohridski”, Bitola, Faculty of Tourism and Hospitality, Ohrid, North Macedonia; 24) Prof. Dr. Boris Krivokapić, MB University, Faculty of Business and Law, Belgrade, Serbia; 25) Academician Prof. Dr. Venelin Terziev, Russian Academy of Natural History, Moscow, Russia, professor, doctor of military science, doctor of economic science, doctor of social sciences, Ministry of Culture Republic of Bulgaria, Sofia, Bulgaria, National Military University, „Vasil Levski”, Veliko Trnovo, Bulgaria University of Rousse, Rousse, Bulgaria; 26) Prof. Dr. Srdan Milašinović, Police Academy, Belgrade, Serbia; 27) Dr. Jasmina Ahmetović, Scientific Advisor, Institute of Serbian Culture, Priština – Leposavić, Serbia; 28) Prof. Dr. Polona Sprajc, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia;

In the epistemological-methodological discussions at the previous four international thematic scientific conferences, the basic premise was that the primary role of fundamental, and even applied prognostic and futurological research is to recognize the regularity and legality of the achieved level of development of modern states and to find more rational, efficient and effective possibilities for their application in current and future development of countries in various fields and areas of science.

The main purpose of the epistemological-methodological discussions conducted at international thematic scientific conferences under the motto: "WHERE IS THIS WORLD GOING TO" was to improve the political, economic, social, cultural, security, information-communication, technological and natural systems in modern countries and to maximally protect the environment and preserve the health of people on the planet.

The significance and actuality of the epistemological-methodological discussions initiated at the previous four thematic international scientific conferences were confirmed by the social processes caused by global migrations, the planetary pandemic of the SARS Covid 19 and 20 virus and by the open crisis between Eastern and Western civilizations, above all the crisis between the Russian Federation, i.e. Russia and of the collective West, the end result of which is the wanton and unnecessary war in Ukraine and the permanently damaged relations between the East and the West. It is devastating to know that social and other sciences were not able to offer effective preventive and curative responses to today's global challenges, which is unacceptable for science and the state of scientific research in the world today.

This state of affairs in the field of fundamental research in the world is unacceptable and it represents the last alarm for all political and legal entities in international relations, educational and scientific institutions at the global and regional levels of organization, as well as for national states to organize themselves in a better way, in accordance with the gravity of the situation: to further invest in fundamental research and to put the results of that research more quickly into the function of development and progress, both of modern societies and the global community.

29) Prof. Dr. Miodrag Gordić, Union University „Nikola Tesla”, Belgrade, Serbia; 30) Prof. Dr. Siniša Zarić, University of Belgrade, Faculty of Economics, Belgrade, Serbia; 31) Prof. Dr. Viacheslav Soloviov, Dobrov Center for Scientific and Technological Potentials and the Study of History at the National Academy of Sciences of Ukraine, Kiev, Ukraine; 32) Prof. Dr. Branimir Nestorović, University of Belgrade, Faculty of Medicine, Belgrade, Serbia; 33) Prof. Dr. Dejan Mihajlović, Technical University, Monterrey, Nuevo Leon, Mexico; 34) Prof. Dr. Nevad Kahteran, University of Sarajevo, Faculty of Philosophy, Bosnia and Herzegovina; 35) Dr. Marija Jeftimijević Mihajlović, Senior Research Associate, Institute for Serbian Culture Priština – Leposavić, Serbia; 36) Prof. Dr. Viktorija Nikolaevna Ryapuhina, Technical University „V. Mr. Shukhov”, Belgorod, Belarus; 37) Prof. Dr. Dragan Pamučar, University of Belgrade, Faculty of Organizational Sciences, Belgrade, Serbia; 38) Prof. Dr. Rossana Piccolo, University of Campania „Luigi Vanvitelli”, Italy; 39) Prof. Dr. Vanda Božić, Union University, Faculty of Law, Belgrade, Serbia, and 40) Dr. Gordan Bojković, Research Associate, Institute of Serbian Culture, Priština – Leposavić, Serbia.

Otherwise, we can expect the continuation of the trend of chaotic processes in international relations, the inability of political, financial, legal, health, security and other global, regional and national institutions and organizations to control these processes and further degradation of political, legal, economic, social and cultural systems in modern countries, which calls into question the very survival of the global civilization.

Starting from a realistic prediction in the development of international relations in the near future, and recognizing the crucial need for new fundamental research in all fields and areas of science, the participants of the fourth international thematic scientific conference decided to publish selected and internationally peer-reviewed papers in a separate international thematic collection entitled "*Fundamental research*".

By publishing an international thematic collection on fundamental research and leaving it to the judgment of the scientific and professional public, the publishers and co-publishers of the collection - the Institute for Serbian Culture from Priština - Leposavić, the International Association of Social Science Methodologists and the "MB" University from Belgrade, make a modest contribution to changing the perception of the understanding of the importance of fundamental research for the progress of the global community and the prosperous development of modern states.

Methodologists from all countries of the world are expected to proactively participate in the conceptualization and application of competent fundamental research of natural and social phenomena and processes in all fields and areas of science in all spheres of modern society.

Also, methodologists are expected to point out in an argumentative way the importance of fundamental research for the development of the theory of science and for solving the problems of social practice, through the implementation of their results in applied research, as well as to permanently point out the harmfulness of quasi-scientific knowledge in fundamental, applied, developmental and other types of research for the future development of modern countries.

Belgrade, February 2023

Academician, professor Dr. Neđo Danilović

Full professor Dr. Dragan Tančić,
senior research associate

Full professor Dr. Milija Bogavac

INTRODUCTION

Dear Readers,

In the modern period of the development of human civilization, fundamental research was an important component of the development and progress of global society, regional communities and modern states. They were not an end in themselves, but their goal was to improve fundamental knowledge in all fields and areas of science. They were mainly focused on creating new theories and refuting and supporting existing ones that explain fundamental natural, technical, biomedical and socio-humanistic phenomena and realities.

Fundamental research is an incentive for the further development of civilization at the global, regional and local levels. Without relying on the results of fundamental scientific research, there is no development of the global community and modern states. The creators of the global world order, actors of regional institutions and international organizations and leaders of modern states cannot set and achieve realistic goals of global, regional and local development without relying on the results of fundamental research and their implementation through applied and development research.

Future challenges facing world civilization will require fundamental research to represent an organized and systematic process of acquiring new scientific knowledge in a certain field or area of science, structured within itself from harmonized systems of existing scientific and other experiential knowledge, thought processes, technical and routine research actions and of procedures connected into a logical, coherent and systematized whole, aimed at moving the boundaries of scientific knowledge in the natural, technical-technological, biomedical and social-humanistic fields of science, with the main goal of preserving a healthy environment, further strengthening the technical-technological basis of modern societies and improving political, economic, social, cultural, security, information-communication and other systems in them.

Only well-planned, methodologically correctly conceptualized, adequately socially directed and financed fundamental research and applied and development research based on their results can move modern societies forward. The results of these researches help international institutions and organizations at the global and regional levels; they also help legislative and executive authorities in modern countries to formulate realistic and achievable goals for their political, economic, social, cultural, information-communication, environmental and technological development in the future.

Starting from the premise that the method of science is an integral part of science and that there is no scientific research without adequate application of scientific methods, a fundamental question arises, is there prosperity for the global community and modern states without relying on science and the results of fundamental scientific research? Closely related to that is also the following question, is there progress in science without the development of its method and methodology that studies scientific methods and their application in scientific research?

Readers can find the answers to these questions in the international thematic collection dedicated to *fundamental research*, with a clear message that in the future these researches should more explicitly generate new scientific ideas, axioms, postulates, principles, laws, theories and scientific systems that represent the basis of further development and progress of modern states, regions and the global community as a whole.

In the conception and implementation of fundamental research, the role of methodologists in scientific and educational institutions and professional methodological associations is irreplaceable. They are expected to:

- 1) to permanently advocate the objectivity, reliability, generality and systematicity of the results of scientific research;
- 2) to indicate in an argumentative manner the importance of fundamental, applied and developmental research for the development of science and solving problems of social practice;
- 3) to be critical of the consequences of inadequate fundamental, applied and developmental, diagnostic, prognostic and futurological research on the development of modern countries in all areas of society;
- 4) to continuously indicate the harmfulness of quasi-scientific knowledge for the future development of modern societies;
- 5) to encourage the state authorities with arguments for greater total allocations, especially allocations from the GDP for scientific research and the need for consistent application of the results of reconstructive, diagnostic, prognostic and futurological research, without which there is no objective, scientifically true knowledge, which is much needed for the planning direction of the future the development of modern states, global communities and the preservation and development of human civilization;
- 6) to look critically at the socially unacceptable status of scientific research in global and regional institutions, organizations and modern states, and to permanently subject to scientific criticism the application of basic knowledge methods, general scientific methods and data collection methods in fundamental scientific research;
- 7) to critically examine the place, role and importance of the general methodology of science and special methodologies in the conception and execution of scientific research in all fields of science, scientific areas and scientific disciplines within them, from different angles.

The scientific and social role of methodologists and the International Association of Methodologists of Social Sciences is realized through the public publication of selected and independently peer-reviewed papers in the thematic international collection dedicated to fundamental research.

The next, fifth international thematic collection will be dedicated to the general theme: *“Status of general and special methodologies of sciences in scientific institutes and universities - current state and perspectives”*.

Belgrade, 8 February 2023

Academician, professor Dr. Neđo Danilović,
President of the International Association
of Social Science Methodologists

Uvodno izlaganje

Original scientific work

*Dragan LJ. TANČIĆ**

Institute for Serbian Culture Priština – Leposavić

*Vanda B. BOŽIĆ***

University of Zagreb

BASIC RESEARCH ON VIOLENCE IN SPORTS FROM THE ASPECT OF METHODOLOGY OF SOCIAL, POLITICAL AND CRIMINAL-LEGAL SCIENCES***

Abstract: The subject of this paper is the scientific knowledge regarding basic research on violence in sports from the aspect of methodology of social, political and criminal-legal sciences. In this context, it must be emphasized that a particularly important factor is the theoretical, methodological and practical thinking and knowledge about the mentioned phenomena, as well as the process of learning about violence in sports. In the cognitive process, we have practical sensory activity and theoretical thinking. The important characteristics of the knowledge process in basic and other research are: establishing facts based on already acquired knowledge; establishing hypotheses and theories in explaining the facts of unknown phenomena; checking and verifying the accuracy of hypotheses and theories in practical application, which in fact represents the understanding of even the most complex phenomena.

Key words: methodology; basic research; social, political and criminal-legal sciences; science; scientific knowledge.

DEFINING THE CONCEPT OF RESEARCH AND BASIC (FUNDAMENTAL) RESEARCH

Research as a notion, phenomenon and process represents a set of intentional, diverse, intellectual, objective, rational and purposeful human activities and actions in a certain time and in a certain space, in different areas of human existence, which are directed towards the acquisition of new knowledge

* Full professor, dragan_tancic@gmail.com

** Associate professor, bozic.vanda@gmail.com

*** The paper was created within the scientific research work of NIO under the Contract concluded with the Ministry of Science, Technological Development and Innovation of the RS number: 451-03-47/2023-01/200020 dated 02/03/2023.

and the verification of the same regarding any phenomenon, part of the phenomenon or process that are the subject of a given research and the same are carried out using appropriate scientific methods.¹ In this context, many researches are evident, many of which cannot be classified as scientifically based researches, and in social relations and social practice we often encounter unscientific or dilettante researches. In that context, for the scientific community and methodology, it is important to keep in mind that we have, first of all, scientific research, then professional-expert research, but also quasi-scientific and amateur research. Scientific research is an extremely complex process, objectively and objectively defined, using axioms, theories, theorems, both about the subject of science and about the subject of research, with the strict application of norms, procedures, scientific methods and the methodology of science, and they are always directed towards the development of science and scientific knowledge.

In the scientific fundus, there are different definitions and classifications of scientific research, and this is primarily the result of belonging to certain paradigms, theoretical-methodological directions and scientific communities. In general, we can take the type of research as a general criterion and on that basis we can distinguish between theoretical, methodological, empirical, basic (fundamental), applied, developmental and other research. In addition to the aforementioned classification of research, we can distinguish between mass and non-mass research; longitudinal and panel research; interdisciplinary or intradisciplinary; experimental or quasi-experimental; descriptive or exploratory, heuristic or verification research; orientational, dialectical-descriptive, classificatory-typological, innovative, explicative or prognostic research; fundamental – causal; developmental application research; action or operative; comparative; flash research; short term, medium-term, long-term and permanent research, and others.

In the scientific-theoretical fundus, there is also a classification of research by role and functions in scientific knowledge. On this basis, research is often divided into basic (fundamental), applied and developmental research. This classification is considered to be taken from natural, ie. from technical sciences and according to that logic, basic (fundamental) research in general, reveals essential properties of phenomena and problems, but also general and special laws of certain sciences and scientific disciplines which, based on these new scientific findings, form necessary knowledge that can be further developed. This type of research is the basis of science and scientific development. In this context, following the theme of this paper „Basic research on violence in sports from the aspect of methodology of social, political and criminal-legal sciences“, we can take a justified position, that scientific research on violence in sports in the present, and several decades back from the last century, with aspects of the methodology of social, political² and criminal-legal sciences, represent the foundation

1 Božić V, Tančić D, *Krivičnopravni i politikološki aspekti zaštite tajnih podataka i dokumenata*, Institut za srpsku kulturu, Priština-Leposavić, 2022: 14.

2 See more: Tančić D, Božić V, *Politikološki i krivičnopravni aspekti genocida*, Zbornik radova X naučne konferencije sa međunarodnim učešćem „Stradanje Srba, Jevreja, Roma i ostalih

for the formation of important scientific knowledge, both in social, political and criminal-legal sciences and scientific disciplines, where the subjects of science and the subjects of research are violence in sports. For these reasons, it is indisputable that the role of basic (fundamental) research is very important in the study of violence in sports (both in our region and in other areas) and that as such they are the basis of the aforementioned sciences, scientific disciplines and scientific development, when studying violence in sports, either as a phenomenon or as a process. Generally speaking, when considering this topic, it is undeniable that there are other approaches in metamethodology and methodologies of sciences and scientific disciplines, but given the limited space, these are sufficient starting points for this scientific paper.

On the other hand, by applied research we mean research that acquires scientific knowledge about the possibilities, ways and spheres of application of knowledge, and development research reveals possibilities from various scientific fields and ways of concretely applied knowledge in order to reach their further improvement. This classification is not the most appropriate for the social-humanistic sciences, because all research can be directed at all three levels and their results can always be used both for scientific and practical purposes. Therefore, in the social-humanistic sciences, we do not only talk about the basic (fundamental) sciences (in the natural sciences, these are mathematics, physics, chemistry), but the property of generality is applied. In the social sciences, philosophy, political science, sociology, and history are the most general. But, on the other hand, it must be emphasized that one general regularity can be observed in the scientific fundus. Namely, the greater the scientific significance of the research, the greater the potential social significance; consequently, the tendency to increase the level of the scientific and social goals of the research manifests itself. In addition, the regularity is indisputable, that the first fundamental research has the scientific goal of description and classification, and the social goal is the provision of a scientific and social relationship to scientific knowledge. This is also the case when studying issues in sports, violence in sports and other phenomena and processes, whether in the areas of the former SFRY, the European Union, England, the USA, the Russian Federation or in other geographical and political regions.

METHODS OF COLLECTING DATA ON VIOLENCE IN SPORTS

In the scientific fundus, when defining the term method, there is general agreement that the scientific method (scientific methods) is understood as a complex system of logical rules, scientific knowledge about the subject and the method and techniques used to acquire scientific knowledge during scientific research. In this context, we classified scientific methods as follows: basic methods of knowledge, general scientific methods and methods of data

na teritoriji bivše Jugoslavije," Univerzitet Union Nikola Tesla u Beogradu, Institut za srpsku kulturu, Priština-Leposavić, 2023: 173 (167-183).

collection, whereby we distinguished the methods that are directly applied in scientific research, as well as those scientific methods that have their own developed research techniques, from those that do not. Techniques are generally understood as defined types of instruments as well as their types and systems of operational procedures in research and in instrument handling.³

In the scientific methods of data collection a large number of authors include the following: (1) observation, (2) examination, (3) experiment, (4) document (content) analysis method, (5) case study method, and (6) biographical method.

In accordance with the topic of this paper, we must emphasize that (in the previous paragraph) of all the aforementioned methods, the observation method can be used as the most penetrating one when investigating violence in sports, considering its essential provisions, as well as the following factors: time, space, manifestations etc.

THE OBSERVATION METHOD AS THE MOST PENETRATING METHOD OF COLLECTING DATA ON VIOLENCE IN SPORTS

Namely, considering that violence in sports is a specific social phenomenon, which takes place at one moment and in a certain space and is manifested instantly, objectively it is unrepeatable as such, which means that it must be approached in a timely manner from a scientific point of view; furthermore, this means that according to certain standards and procedures, it must be approached in a systematic, consistent way. In this context, the observation method can be applied without the use of technical aids, the so-called natural observation; with the use of technical aids that support the senses of the observer, but recording is done with the senses; observation through intensive use of technical means, that is, recording through them, e.g. video cameras.

On the other hand, based on the immediacy of the actor's participation in the observation, we can distinguish the following: observation with participation, where the observer performs the observation in a certain way and simultaneously participates in the events; observation with presence in which the observer attends the occurrence of the phenomenon and observes it; observation without the presence of a specific researcher. There are different approaches to observational techniques in the scientific fundus. But, regardless of the various understandings of observation techniques, it can generally be said that different observation techniques are based on different relationships between the object of observation and the observer. Namely, the observation techniques aim to, depending on the object of observation itself and some social situation in which the observation is carried out, realize as much as possible the goals for which the observation is carried out and thereby make a scientific contribution to the truthfulness of the knowledge

3 See: Božić V, Tančić D: *Primena opštenaučnih metoda u veštačkoj inteligenciji*, Zbornik radova Čovječanstvo pred izazovom vještačke inteligencije, TOM III, Evropski Univerzitet Brčko Distrikt, 2023: 117. (107-119).

about the phenomena that are the subject of research. The crucial question in relation to observation techniques is related to the relationship between the object of observation and the observer. Considering that these are activities of experiential data collection, which are based only on the control of the observer's activities, and not on the control of the object of observation, it is important to emphasize that all observation techniques are based on the approach of the observer to the object of observation. If the objects of observation were brought closer to the observers, then they would be in the situation of a laboratory experiment or some other experimental plan. In this context, it is important to distinguish between observation techniques and the criteria they are based on.

A large number of authors believe that two factors that specify the application of observation techniques are important: first, the freedom or controllability of observation activities with regard to the instructions derived from the observation plan and, second, the diversity of observation techniques with regard to the relationship between the observer and the environment being observed. As a result of the above, a number of authors believe that we have free observation on the one hand, and controlled observation on the other. Free observation deviates from the principles that aim to ensure in advance the standardization of the observation procedure of all observers according to all units of observation, such as situations where the observed phenomena are „visible“ and there is no fear of their „distortion“, and these are the basis of observation that they have the task of counting, determining presence, etc. Or, some situations, when e.g. the subject of observation is unknown to the researcher (an example is preliminary observations), then the observation cannot take place on the basis of a pre-defined observation plan.

In this context, there are several ways of observation that can arise from combining the role of observer and participant: complete observer; observer-participant; participant-observer and full participant as well as non-participant observation. In non-participant observation, there is a certain distance between the observer and the object of observation, so that the observer does not become a member of the environment he observes, does not perform any other activities than those that are essential for observation, and the observer does not immerse himself in the object of observation, on the contrary, he remains side, thus the field of view of observation becomes limited (which is the disadvantage of non-participant observation, and the advantage of participant observation). In fact, the observer's activity during non-participant observation is significantly reduced (both in terms of content and scope), without the establishment of „more intimate“ connections and relationships between the observer and the object of observation, the quality and value of the information received, which is „crucial lack“ of non-participant observation.

According to the criteria of the observer role, there are several modalities:

1) full participant = the observer is in a similar position with all members of the observed group, performs work tasks and fulfills obligations, and observation is an additional obligation. In this context, two situations are possible: that a certain member of the group is hired as an observer; to add an observer to the group;

2) participant - observer is also a member of the observed group that performs ongoing duties, but he is a member of the group entrusted with observation with the consent of other group members;

3) observer - participant is somewhat freer in movement and execution, his obligation is to a certain extent adapted to the possibilities of performing the role of observer;

We consider these three types of observer roles to be a feature of participation, and we classify such observations as observations with participation in: a) observation, b) acting out the phenomenon;

4) pure observer - as a rule, he is not a member of the observed group and does not participate in the occurrence of the phenomenon, but he attends it and participates in the observation;

5) scientific observer - is a specific form of a pure observer - a researcher accepted by the group as a researcher. In this case, too, it is about attending, not participating, although specific experimental situations may also occur.

Generally speaking, observations can be divided as follows:

1) complex or complex observations, where the objects of observation are some complex, long-term phenomena and processes (e.g. several years ago), such as, e.g. football matches between football clubs „Real“ from Madrid and „Partizan“ from Belgrade and several other football clubs at the same time, in similar or different geographical areas; statistical analysis is being performed;

2) mass observations, with the involvement of several or more observers;

3) direct observation, with participation or attendance at the phenomenon;

4) study of individual cases.

In social, political and criminal-legal sciences, there is a dual approach to the method of observation as a scientific method. In the scientific fundus, on the one hand, the scientific value, penetration and reliability of the knowledge that can be acquired by the method of observation is highlighted. Again, on the other hand, in the practice of scientific research, this scientific method is relatively rarely applied. The reason for the infrequent application of the observation method is considerable difficulties in its scientific research application, which is primarily a consequence of insufficient scientific, theoretical and methodological knowledge and a lack of practice in scientific research, designing and creating scientific projects, which is not only the case in our region (former SFRY) but also in other (wider) areas.

THE PLAN FOR OBSERVING AUDIENCE, FAN GROUPS AND OTHER ACTORS

For the application of the observation method regarding e.g. soccer or basketball matches between some soccer clubs, it is necessary to create a research project and within it a plan to observe „x“ match. What does that mean? That is, do we really need an observation plan? The answer is: „Yes, we need it“. An observation plan is necessary because of the need for selectivity when observing

specific and complex situations when observing crowd behavior at football matches or other sporting events, e.g. fan groups. The aforementioned plan directs the observer's attention to the behavior of the audience or fan groups, players or other actors, on the one hand in totality, and on the other in details. In this context, the observation plan also represents a research strategy that should be used to achieve comprehensive knowledge about the phenomena that are the subject of observation, with a certain systematicity and sequence. Creating an observation plan reduces the possibility of observation activities including what is not important, which is accidental or secondary manifestations of the observed phenomena. The aforementioned plan ensures the relevance of observation activities from the point of view of the subject and goal of the research, considering the conditions of the specific facilities and situation.

In general, not all objects of observation are experientially cognitive in the same way, and this depends on the phenomenon itself as well as on the conditions of observation. With the observation plan, we try to match the difficulties arising from the very nature of the investigated phenomenon and observation conditions in the most rational, efficient and economical way, in order to achieve the goal of observation. Creating an observation plan is essential for any scientific observation. The question is often asked: why is it important? The answer is simple. Namely, if it is about successive observation by the same observer or simultaneous observations of the same object by several observers (simultaneous observations), the observation plan achieves standardization in observation activities. In modern conditions, with the help of advanced technical-technological means, video cameras, artificial intelligence, complex software with police data on citizens, it is possible to simplify only the observation and the observation plan and design it maximally efficiently and economically, so that, for example, in a much shorter time interval, in a smaller or larger space, with far fewer observers to identify the authenticity of citizens at a gathering or sports event, football and basketball game, by gender, age groups, their personal and health data, their activities and actions, and other.

OBSERVATION LISTS

Observation plans are generally set up in the form of so-called observation lists, which are the basis for observation activities and for drawing up observation reports. Watch lists also serve as a control instrument over the activities of each observer, because they protect against the bias of individual researchers. With the use of observation lists, we ensure the systematic registration of what has been experienced, to neutralize it, to state something that has not been experienced, to make the necessary selectivity between relevant manifestations of phenomena from those that are not relevant or important, considering the very subject and goals of scientific research. Also, observation lists enable the synchronization of observation activities, as well as the arrangement and processing of data collected through observation.

Creating observation lists is a very complex job that is performed during the design and development of scientific projects, conceptualization and reconceptualization of research.⁴ It also includes numerous checks and tests in the theoretical, methodological and empirical sense. There are also, of course, field checks as well, before the lists are applied in the implementation of the research, and all until the end of the preliminary research. When creating observation lists, one should start from certain theoretical and methodological assumptions and results of previous research, as well as their elaboration on specific social situations. If it is about social or other phenomena that are complex, then it is about a smaller or larger number of indicators. If a concept is operationalized with several indicators, it is important to determine their mutual relationship. The order of indicators will depend on their natural relationship to the phenomenon under investigation and the order in which they manifest in reality, depending on the chosen dimensions of space and time.

In the first, initial phase of development, observation lists contain a large number of indicators. By testing the validity of the selection (especially during trial research), those indicators that directly and completely express the property of the observed phenomenon are retained. A large number of indicators should be arranged according to their affinity in the temporal or spatial dimension.

When creating observation lists, special attention must be paid to the selection of the so-called zero point. It represents the basis for further arrangement of observed phenomena. With the "zero point" we provide a unique arrangement procedure. If, for example, we observe the participation of football players in the management of a football club, then it is important that we observe participation as a specific social phenomenon, as a specific individual and group behavior and as a specific activity, for all units of the given set. In this context, it is important to keep in mind that the observation criteria must be the same for each unit. But that is not enough in many cases. It must be assumed that all players of a club do not show the same form and content of participation in management, consequently, several units are observed, in order to empirically determine the differences that exist between them in this regard. But these differences can only be determined if one condition or property of the observed phenomenon is assumed as the conditional starting point of the observation. The choice of such a point, which is based on theoretical and other criteria for the selection of the "beginning" of the observation, should be as unambiguous as possible (in terms of content) for all units of observation.

This initial state is called by some the „zero point“. It should objectify the observational situation towards all units because it represents a common initial social situation. In the specific case, the observation would continue in such a way that it would be observed whether and which units of observation exhibit participation activity (or not), and if they exhibit it - to what extent.

4 Tančić D, Božić V, *Strah u političkim i krivičnopravnim naukama*, Tematski zbornik „Strah u naučnom i umetničkom stvaralaštvu“ Institut za srpsku kulturu, Priština-Leposavić, 2022: 178-179. (175-186).

THE FUNCTIONS OF THE OBSERVATION PLAN

The essential function of the observation plan is that it helps the observers to interpret certain signs of external behavior or other signs in a uniform way, and this is achieved by specifying indicators and interpreting their significance in a given social or other situation, thereby removing the space for the same phenomena to be interpreted differently, depending on the observer. For this purpose, observation lists are drawn up as elaborate parts of the observation plan. This ensures that the observation lists ensure that certain signs or symbols, which express the investigated phenomena as experiential experiences of the phenomenon, are unambiguously interpreted by several observers. The lists are the result of the connection with the subject(s) and the scientific and social goals of scientific research. Each subject of research requires, depending on the defined goal, the development of a separate list, so, accordingly, any schematism is dangerous.

The content of the observation plan can be, from the point of view of the observational activity that is to be undertaken, more or less elaborated, and thus in this way the observer's activity is directed to a greater or lesser extent.

Observation plans, in which the observation activity is elaborated only in basic elements, leave freedom to the observer to adapt his observation to the given conditions of the concrete situation (the so-called „free, uncontrolled observation“). But it must be emphasized that every observation plan must contain a decision on several important elements of the observation action, as follows:

1. determination of objects and units of observation, which means the existence of an operational definition and determination of observation units, i.e. operational identification that enables reliable finding of the observation unit;
2. what information should be collected (contents of observation activities). The information that should be collected, in terms of its content, must also be operationalized, listing all the information that should be collected during the observation;

3. method of observation, suggesting the application of certain observation techniques, as well as the possible use of instruments.

Generally speaking, these are the minimum instructions that every observation plan must contain. In this way, these three instructions enable the observation activity to be carried out in a valid way, while the observers are left free to evaluate the choice to make other decisions independently, but still depending on the given conditions.

Controlled observation is observation that is based on observation activity that takes place strictly within the prescribed framework defined by the observation plan.

Free observation is observation that does not conform to strictly defined frameworks and rules that ensure the standardization of the observation procedure.

LEGAL REGULATIONS FOR THE PREVENTION OF VIOLENCE AT SPORTS EVENTS IN THE REPUBLIC OF SERBIA AND THE REPUBLIC OF CROATIA

According to the definition of violence by the World Health Organization (WHO), violence is „the intentional use of physical force or power, a threat or action, against oneself, another person or against a group or community, which either results or is likely to result in injury, death, psychological injury, underdevelopment or deprivation.“⁵ It contains six important elements:

- 1- intention to injure another person or cause him some form of damage,
- 2- violence that has its own duration and intensity,
- 3- the abuser must have power,
- 4- violence must involve the victim's vulnerability,
- 5- lack of support,
- 6- consequence.⁶

In the context of violence, herewith we will point out the distinction between aggression and frustration. According to the theory of aggressiveness, aggression is a state that always arises as a result of frustration, however, in the same way, frustration also causes and leads to aggressive behavior.⁷ Aggressive behavior does not have to be exclusively innate, it can be acquired, learned, as well as dependent on the environment.⁸

The definition of sport is complex because the concept of sport is not unambiguous as such.⁹ We wish to emphasize that concepts such as riots, violence and misconduct are still not clearly defined. When talking about sports and violence, we all first think of football, given that football is the most represented sport that is most closely related to the notion of hooliganism. The term „hooliganism“ is used for the most severe form of violence at sports competitions.

5 World Health Organization, available at: <https://www.who.int/violenceprevention/approach/definition/en/>, (01.07.2023.)

Etienne G. Krug, Linda L. Dahlberg, James A. Mercy, Anthony B. Zwi Rafael Lozano, *World report on violence and health*, World Health Organization, Geneva, 2002: 5.

Krug E.G, Dahlberg L.L, Mercy J.A, Zwi A.B, Lozano R, *World report on violence and health*, World Health Organization, Geneva, Lancet, 2002: 1083-1088.

6 See more in: Zaštitimo djecu od nasilja, available at: <https://www.zastitimodjecuodnasilja.org/latn/?page=25&kat=2&vijest=27> (07.2023.)

7 Also in: Božić V, Jovanovski Z, Đukić M, *Kaznenopravni prikaz i analiza zaštite od nasilja na sportskim natjecanjima u Hrvatskoj uz osvrt na međunarodnopravna rješenja*, Tematski zbornik međunarodnog značaja 33. susreta Kopaoničke škole prirodnog prava - Slobodan Perović „Unifikacija prava i pravna sigurnost“, 2020. VOL 1: 509-529.

See more in: Dollard J, Doob L.W, Miller N.E, Mowrer O.H, Sears R.R, *Frustration and aggression*, New Haven, CT Yale University Press, 1939.

8 See more in: Berkowitz L, *Aggression - a social psychological analysis*, New York McGraw-Hill, 1962.

9 On definitions of sports see more in: Jovanovski Z, Božić V, Atanasov S, *Nasilje na sportskim priredbama i uloga medija*, Časopis Pravni život, časopis za pravnu teoriju i praksu, Udruženje pravnika Republike Srbije, No. 9-2019: 503-520.

In a broader sense, hooliganism represents inappropriate behavior, jargon specific to a street style of life, while in a narrower sense it has the meaning that refers to sports events (violent behavior of groups of fans at various sports competitions, „going wild“ and causing disorder at football matches, at which aggression is present in the form of destruction of material things and/or attacking or injuring the opponent.¹⁰

Hooliganism has appeared at the end of the fifties and the beginning of the sixties of the 20th century, when there happened increased organized violence due to social and cultural differences. The initial definition of hooliganism is „intentionally planned, organized and structured violence.“¹¹ Hooliganism as violent behavior refers to the so-called *hard core* of the entire fan supporters group, which includes the leader and other fans who do not miss a single sports match of the championship, and they number between ten and three hundred members.¹²

LEGAL REGULATIONS FOR THE PREVENTION OF VIOLENCE AT SPORTS EVENTS IN THE REPUBLIC OF SERBIA

The issue of security at sports events in Serbia, before the adoption of the legislative framework in the field of sports, was partly regulated by blanket norms such as the Law on Public Order and Peace¹³ and the Law on Gathering of Citizens.¹⁴ *The Act on the Prevention of Violence and Misbehavior at Sports Events (the so-called Anti Hooligans Act)* was adopted in 2003¹⁵ and it clearly specifies what is considered violence and misconduct at sports events:

- 1) physical attack on the participants of the sports event, that is, physical confrontation between the participants at the sports event;
- 2) throwing objects on the sports field or in the auditorium;
- 3) attempting to introduce or introducing into a sports facility or highlighting in a sports facility symbols that offend national, racial, religious or other feelings or otherwise cause hatred or intolerance that may lead to physical conflicts;
- 4) damage to the sports facility, equipment, devices and installations at the sports facility where the sports event is held;
- 5) causing disorder or destroying property when arriving or leaving a sports event or in a sports facility, disrupting the course of a sports event, endangering the safety of participants in a sports event or third parties;

10 Leeson P.T, Smith D.J, Snow N.A, „Hooligans“, *Revue d'économie politique*, 2012, 122 (2): 73.

11 Dufour-Gompers R, *Dictionnaire de la violence et du crime*, Toulouse, Éres, 1992: 94.

12 Bodin D, *Huliganstvo*, Agencija za odgoj i obrazovanje, Zagreb, 2013: 26.

13 Law on Public Order and Peace, Official Gazette RS, No.5/92, 3/93,67/93,48/94, 101/05.

14 Law on gathering of citizens, Official Gazette RS, No.51/92,53/93,67/93, 48/94.

15 Law on the Prevention of Violence and Misbehavior at Sports Events, Official Gazette RS, No. 67/2003, 101/2005 – other law, 90/2007, 72/2009 - other law, 111/2009, 104/2013 - other law 87/2018.

6) unauthorized entry into the sports field, i.e. into the official premises and official passages of the sports facility or into the part of the auditorium of the sports facility intended for opposing fans;

7) attempt to introduce, that is, introduction into a sports facility, possession or use of alcohol or other intoxicants;

8) attempt to introduce, i.e. introduction into a sports facility or use of pyrotechnic devices and other objects and devices that may endanger the safety of participants in a sports event or hinder its flow;

8a) possession of pyrotechnic devices, items and devices that could endanger safety upon arrival or departure from a sports event;

9) setting fire to fans' props or other objects;

10) masking of the face in order to conceal the identity in case of committing any form of violence, using clothing or other items.¹⁶

The law was conceived in accordance with the provisions of the European Convention on Violence and Misbehavior of Spectators at Sports Events, especially at Football Matches from 1985.¹⁷ The law is relatively short, clear and concise, it is based on the tradition and experience of internal affairs authorities in preserving stable public order and peace in order to ensure citizens the right to participate in public gatherings and sports events. Citizens are guaranteed freedom of assembly by the Constitution of the Republic of Serbia.¹⁸

The law has been amended several times due to the fact that the legislator tried to cover almost every situation in practice, which is almost impossible. The law provides definitions of sports competition, sports events, organizers, time and venue, participants, *acts of violence* and inappropriate behavior at sports events; the modes of execution of the law are specified as well. As *measures to prevent violence and inappropriate behavior at sports events*, the law outlines *preventive measures that are required to be implemented by sports federations, sports clubs and sports organizations, measures that are taken at sports events, measures that are taken at sports events of increased risk that relate to obligations of the organizers*, contact and cooperation with representatives of other clubs, sports associations, the police and other authorities and measures taken by competent state authorities. Before the sports event of increased risk, the Ministry inspects the sports facility where the sports event will be held at least 24 hours before its start and gains insight into the organizational preparations.¹⁹

Violent behavior at a sports event ceased to be specified as a criminal act by the amendments to the Law on Prevention of Violence and Misbehavior

¹⁶ Art. 4. *Ibid.*

¹⁷ Law on Ratification of the European Convention on Violence and Misbehavior of Spectators at Sports Events, Especially at Football Matches, Official Gazette of SFRY - International Treaties, No. 9/90.

¹⁸ Art. 54. Constitution of the RS, Official Gazette of the RS, No. 98/2006, 115/2021.

¹⁹ Art. 17. par. 2. Law on the Prevention of Violence and Misbehavior at Sports Events.

at Sports Events from 2009, and this criminal offense was transferred to the Criminal Code (Art. 344a).²⁰

The Law on the Prevention of Violence and Misbehavior at Sports Events prescribes *offenses* for which misdemeanor proceedings can be initiated against a physical person for the following: throwing objects on the sports field, destroying property, unauthorized investment in a sports facility, (attempted) introduction of alcohol or intoxicants into sports facilities building, bringing (attempted) pyrotechnic devices of other objects, setting fire to objects, acts of concealing identity, not following the orders of the security service, reselling tickets and selling alcohol, for which misdemeanor sanctions are prescribed: prison sentence, fine, protective measure banning attendance at a sports event and the measure of confiscation of the object of the misdemeanor.²¹

The Criminal Code of the Republic of Serbia in Chapter XXXI provides for criminal offenses against public order and peace (JRM) and among them the criminal offense in Article 344a entitled „*Violent behavior at a sporting event or public gathering*”.

A cumulative penalty, a prison sentence of one to five years and a fine, shall be imposed on those who physically attack or engage in physical confrontation with the participants of a sporting event or public gathering, commit violence or damage property of greater value when arriving or leaving a sporting event or public gathering, enter into a sports facility or throws objects, pyrotechnics or other explosive, inflammable or harmful substances that can cause bodily harm or endanger the health of participants of a sports event or public gathering onto the sports field, among spectators or participants of a public gathering, enters the sports field or part of it without authorization stands intended for opposing fans and provokes violence, damages the sports facility, its equipment, devices and installations, causes national, racial, religious or other hatred or intolerance based on some discriminatory basis regarding his behavior or slogans at a sports event or public gathering, resulting in violence or physical confrontation with the participants.²²

The law prescribes four *qualified forms* of this criminal act. The first, if the criminal offense was committed by a group, for which a prison sentence of two to eight years is prescribed, the second, if the ringleader of the group committed the basic criminal offense, he will be punished with imprisonment of three to twelve years, the third, if during the execution of the criminal offense there was a disorder in which a person was seriously injured or property of greater value was damaged, for which the perpetrator will be punished with a prison sentence of three to twelve years, and the fourth, which refers to an official or responsible person who, when organizing a sports event or of a public gathering does not take security measures to prevent or prevent disorder, and as a result

20 Criminal Code of the RS, Official Gazette RS, No. 85/05, 88/05, 107/05, 72/09, 111/09, 121/12, 104/13, 108/14, 94/16, 35/2019.

21 Art. 23. ZSNPSP

22 Art. 344a. par.1. CC RS.

the life or body of a large number of people or property of greater value is endangered, shall be punished by imprisonment from three months to three years and a fine.²³ We are of the opinion that one of the measures that could be useful in reducing the number of this criminal offense would be subjecting the person to psychosocial treatment in order to eliminate the causes of violent behavior.

Among other important legal documents, we wish to emphasize the *Rulebook on the program and method of conducting training for stewards at sports events*²⁴, the *Law on Private Security*²⁵ and the *Law on Detective Activities*²⁶, the *Law on Sports*²⁷ and the *Law on the Prohibition of Manifestations of Neo-Nazi or Fascist Organizations and Associations and the Prohibition of the Use of Neo-Nazi or fascist symbols and features*²⁸, („Anti nazzi act“).

LEGAL REGULATIONS FOR THE PREVENTION OF VIOLENCE AT SPORTS EVENTS IN THE REPUBLIC OF CROATIA

The Criminal Code as *lex generalis* prescribes criminal acts related to violence at public gatherings: *Violent behavior* (Article 323.a) and *Causing disorder* (Article 324).²⁹ We should also consider criminalizing violence at sports competitions as an independent criminal offense.

In order for violent behavior to be a criminal offense, for which a prison sentence of up to three years is prescribed, the following assumptions must be met:

- 1 - that one person put another person in a humiliating position,
- 2 - that in doing so, that person used violence, abuse or some other form of particularly insolent behavior,
- 3 - that the violent behavior took place in a public place,
- 4 - that by committing this criminal offense no other more serious criminal offense was committed which would exclude this criminal offense.

The criminal offense of *inciting disorder* is committed by a person who participates in a crowd of people who endangers public order in a way that incites the crowd to violence, through violence towards other persons or things or by threatening to commit violence, for which the law stipulates a prison sentence of up to three years.³⁰ This will qualify as a form of the abovementioned criminal offense if it was committed out of hatred, against a large number of people, with the use of

23 Art.2. – par. 5. *Ibid.*

24 Rulebook on the program and method of conducting training for stewards at sports events, Official Gazette RS, No. 28/11

25 Law on Private Security, Official Gazette RS, No. 104/2013, 42/2015, 87/2018.

26 Law on detective activity, Official Gazette RS, No. 104/2013, 87/2018.

27 Law on sports, Official Gazette RS, No.10/2016.

28 The Law on the Prohibition of Manifestations of Neo-Nazi or Fascist Organizations and Associations and the Prohibition of the Use of Neo-Nazi or Fascist Symbols and Signs, Official Gazette RS, No. 41/2009.

29 Criminal Code of the RS, Official Gazette RS, br. 125/11, 144/12, 56/15, 61/15, 101/17, 118/18, 126/19, 84/21, 114/22.

30 Art. 324. *Ibid.*

weapons or dangerous tools, or if its commission put the life or body of another person in danger, or if its commission led to considerable property damage, for which it is punishable by law with a prison sentence of six months to five years.³¹

The criminal law also criminalizes the criminal offense of *Public incitement to violence and hatred*, which can be committed by a person who, by the above-mentioned actions, incites violence and hatred at a public gathering or sports competition, which is punishable by up to one year in prison.³² The abovementioned act can be done through the press, radio, television, computer system or network, at a public meeting or otherwise made available to the public through leaflets, pictures or other materials that call for violence or hatred directed towards a group of people or a member of the group because of their racial, religious, national or ethnic affiliation, language, origin, skin color, gender, sexual orientation, gender identity, disability or any other characteristics.³³ Attempt is punishable regarding this crime action. Participation in the commission of the criminal act of public incitement to violence and hatred is punishable by up to one year in prison³⁴, while the organizer or leader of the group will be punished by six months to five years in prison.³⁵

The Law on Prevention of Riots at Sports Competitions (ZSNŠN), as *lex specialis*, entered into force in 2003, after which it was revised several times.³⁶ The legislator passed the aforementioned law with the aim of ensuring that spectators, competitors and all other participants of a sports competition or event are safe and with the aim of creating an environment that prevents, suppresses and sanctions riots and misconduct, before, during and after the sporting event.³⁷ The definition of a sports competition has been expanded to include an international element, which covers competitions within international organizations in the Republic of Croatia and abroad, therefore, a sports competition is "every single competition within the system of sports competitions established on the basis of the Law on Sports, in which they compete domestic and visiting sports club, international competition organized in the territory of the Republic of Croatia, competition in the system of European and world sports organizations, competition for which there is an assessment of the possibility of disorder and violence, and competition abroad in which the national team or sports club from the Republic of Croatia participates."³⁸ The law lists in detail what is considered illegal behavior, which can be done from the departure to the sports competition, during the trip to the competition, during the duration of the sports competition itself and all the way back home. There are 11 illegal behaviors, as follows:

31 Art. 324. par. 2. *Ibid.*

32 Par. 3. *Ibid.*

33 Art. 325. par.1. *Ibid.*

34 Par. 3. *Ibid.*

35 Par. 2. *Ibid.*

36 Law on the Prevention of Disorders at Sports Competitions, Official Gazette RS, No. 117/03, 71/06, 43/09, 34/11, 114/22.

37 Art.1. *Ibid.*

38 Art.3. *Ibid.*

1- „possession or consumption of alcoholic beverages and other beverages containing more than 6% alcohol, drugs and possession of pyrotechnic devices, weapons and other devices suitable for causing injury or creating disorder and violence,

2- attempting to bring inside or actual bringing inside into the sports facility alcoholic beverages, drugs, pyrotechnics, weapons and other objects that, according to the steward's judgment, are suitable for causing injuries or for creating disorder and violence,

3 – attempting to enter, arriving and staying in the area of a sports facility in an alcoholic state above 0.50 g/kg, i.e. the corresponding amount of milligrams in a liter of exhaled air,

4- masking the face with a hat, scarf or other means to conceal the identity,

5- attempt to bring in, bringing in and displaying a banner, flag or other thing with a text, picture, sign or other characteristic that expresses or incites hatred or violence based on racial, national, regional or religious affiliation,

6- throwing objects into the competition area or spectator area,

7- singing songs or posting messages whose content expresses or incites hatred or violence based on racial, national, regional or religious affiliation,

8- lighting and throwing pyrotechnic devices,

9- burning or otherwise destroying fans' props and other objects,

10 – attempted unauthorized entry or unauthorized entry into the competition area or into the spectator area or the area intended for judges or other persons participating in the sports competition,

11 – staying and remaining in a place in the spectator area for which you do not have a ticket or a corresponding document issued by the organizer.“³⁹

The Law on the Prevention of Disorders at Sports Competitions prescribes the following criminal sanctions: fines, imprisonment and protective measures, while juvenile offenders may be subject to educational measures. The *following criminal acts* are listed as: Participating in a fight or an attack on spectators or other persons, Organizing violence at sports competitions, Destruction of things or property at a sports competition, and Disobeying measures and prohibitions, which were originally prescribed as misdemeanors and with the amendment to the Law from 2011 they had been prescribed as criminal acts.

We wish to suggest that the provisions on misdemeanors, criminal acts and illegal behavior listed in the Law on Prevention of Disorders at Sports Competitions be prescribed in separate chapters of the Law and harmonized with other laws in the field of criminal law (Law on Police Duties and Powers⁴⁰, Misdemeanor Law⁴¹ and Criminal Code⁴²).

39 Art.4. par.1. *Ibid.*

40 Law on police actions and powers, Official Gazette RS, No. 76/09, 92/14, 70/19.

41 Misdemeanor law, Official Gazette RS, No. 107/07, 39/13, 157/13, 110/15, 70/17, 118/18, 114/22.

42 Criminal Code of the RC, Official Gazette RS, br. 125/11, 144/12, 56/15, 61/15, 101/17, 118/18, 126/19, 84/21, 114/22.

Participating in a fight or attack on spectators or other persons is committed by a person who participates in a fight or attack on other persons while going to a sports competition, during a sports competition or returning from a sports competition, if a person is seriously injured, for which he is threatened by law imprisonment from three months to three years.⁴³ If the death of a person occurred as a result, the perpetrator will be sentenced to imprisonment from six months to five years. The organizer and/or leader of the group who commits the said act in relation to spectators or other persons may be sentenced to a prison sentence of one to eight years, and if it is a qualified form, to a prison sentence of three to ten years. If a person was involved in a fight through no fault of his own or participated in a fight in order to separate other participants or defend himself, it will not be a criminal offense.

Organizing violence at sports competitions is performed by a person who organizes or leads a group of people who, while going to a sports competition, during a sports competition or returning from a sports competition, participate in a fight or an attack on other spectators or persons, and in doing so, a person is physically injured. or damage or destruction of other people's things or property of greater value, for which the law threatens a penalty of one to five years.⁴⁴

Destruction of things or property at a sports competition is committed by a person who, during the time of going to a sports competition, the duration of a sports competition or while returning from a sports competition, damages, distorts, destroys or makes unusable someone else's thing or property of greater value, for which the law threatens a fine or imprisonment up to three years.⁴⁵

Failure to comply with measures and prohibitions is committed by a person who is present or is found on the premises of a sports facility (or whose presence is determined in another way) during the duration of a prescribed protective measure, security measure or ban on attending a sports competition, for which a fine or imprisonment may be imposed up to one year.⁴⁶

The Law on the Prevention of Disorders at Sports Competitions also prescribes offenses that can be committed by natural persons as organizers of sports competitions: „if they do not take measures to prevent and suppress disorder and violence at a sports competition, if they refuse to cooperate with the competent police body and act according to the order of the police regarding elimination of observed deficiencies in the procedure of preparation, organization and maintenance of the sports competition, if there is no security service or there is not a sufficient number of security guards at the sports competition, if it allows the tasks of the security guards to be performed by persons who do not have a mark or inscription indicating that they are members of the security

43 Art. 31.a Law on the Prevention of Disorders at Sports Competitions, Official Gazette RC, No. 117/03, 71/06, 43/09, 34/11, 114/22.

The term „other persons“ means officials, athletes and stewards.

44 Art. 31.b *Ibid.*

Other persons include stewards, officials of competition organizers and athletes.

45 Art. 31.c *Ibid.*

46 Art. 31.d *Ibid.*

service, if it employs as security guards or uses a person who is not qualified for security duties, if he does not submit a video surveillance record of the sports facility at the request of the police, if he does not provide a suitable space for parking buses and private cars, if the entrance and exit doors of the sports facility are not handled by trained personnel, if the entrance and exit the doors of the sports facility, the area for selling tickets, ramps for directing spectators, passages (tunnels) and stairs are not under the constant supervision of the stewards, unless a search of the sports facility or a part of the sports facility where the sports competition is organized and on which a sports competition is held has not been conducted spectators are accommodated, if the spectator notification system is used for purposes that are not permitted, if the sale and distribution of alcoholic beverages is allowed on the premises of the sports facility, if the sports competition is held at night, and the sports facility is not equipped with an independent source of electricity, and if the sports facility does not open early enough in order to avoid crowds and riots when spectators enter the sports facility.⁴⁷

The following persons are liable in a manner of misdemeanor: a natural person who organizes a sports competition, a natural person who is a tradesman or a person who performs other independent activities as an organizer of a sports competition, a legal person as an organizer of a sports competition and a responsible person of a legal entity organizing a sports competition.

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47 Art. 37. par. 1. Law on the Prevention of Disorders at Sports Competitions, NN No. 117/03, 71/06, 43/09, 34/11, 114/22.

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*Ljubiša R. MITROVIĆ**

University of Niš, Department of Sociology

THE POSITION OF SOCIAL AND HUMANISTIC SCIENCES AND THEIR ROLE IN DEVELOPING CRITICAL AWARENESS AND BUILDING ALTERNATIVE PROJECTS OF SOCIAL CHANGE

Marginalia on the importance of fundamental
and transdisciplinary research and deontology
of the profession of a scientist

All knowledge is worthless if it does not make a person better.

(Socrates)

„We no longer have confidence in progress. We no longer believe that greater progress will lead to democratization and happiness... We increasingly fear that development will destroy the fundamental natural balance, that it will lead to increased inequality at the world level, and that it will impose on everyone an exhausting process of constant change. Those preoccupations contain a hidden fear that humanity is breaking its alliance with nature and returning to savagery...”

(Alain Turenne)

„In science, the search for truth must never be separated from searching for the ways of Goodness/Justice and Freedom.“

(Immanuel Wallerstein)

Abstract: The paper discusses the position of the humanities and social sciences in the era of neoliberal hegemony in education and the consequences of academic capitalism in post-socialist societies in transition. In this context, the focus is on the analysis of the impact of the Bologna reform on the destruction of the scientific system, the commercialization of higher education, the split between education and upbringing, and the marginalization of fundamental research in the humanities and social sciences.

* Professor Emeritus, ljubisa.mitrovic@filfak.ni.ac.rs

The author sees a way out of the current crisis that science has found itself in (as exemplified by a state of disciplinary chaos and fragmented work) in the renewal of the importance of fundamental research and affirmation of transdisciplinary research, in the establishment of new syntheses – an integrated social paradigm, in connecting the creative results of theoretical and empirical research, in cooperation among science, philosophy, monology, anthropology, ecology and cultural studies in envisioning global social changes, sustainable development of humanity and the survival of the planet.

Key words: marginalization of the humanities and social sciences, integrated paradigm, fundamental and transdisciplinary research, alternative projects of sustainable development, deontology of a scientist.

1. INTRODUCTION

We live in an age of the rise of the crazed analytical mind and disciplinary chaos in modern science. There is a crisis of „*normal science*“ and the outlines of a possible new scientific revolution. That scientific revolution is not possible without the renewal of the importance of philosophy, anthropology, humanities and critical sociology, but also fundamental and transdisciplinary research for the development of social and humanistic sciences as well as for strengthening critical self-awareness and raising the innovative and creative abilities of the scientific community to build an alternative project of sustainable social development of humanity.

Earlier, philosophy, with its metaphysics, represented an internal limit to the faster emancipation and development of the sciences; today, the renewal of its importance and the importance of fundamental research in science is an urgent need and a key assumption for the exit of modern science from the crisis, i.e. for its movement from the so-called „*normal science*“ (T. Kuhn, 2019), the development of the humanistic emancipatory potential of science, the strengthening of the critical self-awareness of modern man and the training of the scientific community to build alternative projects for the sustainable development of humanity and the survival of the planet.

Auguste Comte, the father of sociology as a science, derived social dynamics from the stage of evolution of the human spirit: from the theological to the metaphysical, from the metaphysical to the positive scientific phase. Today, we have reached the phase of culmination and frenzy of the analytical particularist mind, the rise of greed and meritocratic specialist elites, which in the form of fragmented work, dissected and fragmented the image of man and the world so that we fail to see the full picture of the world, regarding the essence of phenomena, the human coefficient of the value of man, society, sustainable development of humanity and the continued survival of the planet.

Methodological individualism/particularism had prevailed over methodological cosmopolitanism and seriously threatened not only the humanistic

approach, but also the scientific essence of research - warned Ulrich Beck (1999), in his study „Risk Society“, underlining that in modern times we live in the sign of the globalization of risks, which are not only related to ecology, but also to the crisis and development of science itself.

The time has come to perform critical questioning and redefinition of numerous concepts, categories, rehabilitation of „exiled concepts“ (T. Kuljić, 2018) which are the new ideological mantra of neoliberal metasocial fatalism (in which the focus is on „profit above people“, the market as destiny, neoliberal totalitarianism, the dictatorship of postmodern relativism...); they have been devalued and declared politically incorrect, because they interfered with the actors of neoliberal hegemony in the unlimited expansion of the absolutization of the power of megacapital and their agents in the modern hyperconsumer society of „media spectacle“ and manipulation.

If profit is fetishized as a goal and an inviolable axiom in the development of society, as a metasocial fatalistic discourse in neoliberalism, according to which all values are determined/subordinated (not only in the economy but also in culture, science, education, health, politics), then humanity is in the deepest crisis.

These dazy, no one seriously analyzes the effects of the Bologna reform of education and science, on the education of new generations of homoacademics; no one analyzes the effects of forms of dependent modernization of higher education and academic capitalism, according to the logic and measure of TNC. The unlimited power of mega-capital brought to the stage an alliance of soulless expertise and mafia, Faust and Mestfil, where according to the logic of profit, mega-capital and its pimps move from their areas to the area of Gates - from IT technologies to the pharmaceutical industry, Musk from space research to space tourism. Our Kole, with whom I share the family names - from sugar factory to hotel business to banking - from management in the media to a „renaissance creator“ for new aircraft and security!? All those are nothing but the fair's renaissance „types“ - new mascots of matrapaz and lupen circusmen present on the world and domestic stage.

2. THE CRISIS OF SCIENCE IS THE CRISIS OF MODERN SOCIETY

The history of humanity is not a gift of gods and rulers, but of people, who produce it through their own systems of social actions (Turenne, 2007) Naturally, in different stages of social development, the choice of strategy for the development of the *system of actions* is determined by a number of objective and subjective factors (from the level of technological development, through the character of economic and social systems, the relationship between class forces and social movements, the type of political power, the development of science education, culture...).

In modern sociology, there are various theories, utopias and dystopias, which define development strategies, relations between actors and systems in the range of: from D. Bela, A. Tofflera, A. Turenne, A. Shaf, J. Nisbet and M. Castells. Furthermore, the following researchers from Serbia and the former Yugoslavia dealt with this topic: Bora Jevtić, Zoran Vidaković, Miroslav Pečujlić, Radmila Stojanović, Branko Horvat, Adof Dragičević, Slavko Kulić, Zdravko Mlinar...

The opening to the future of developed economies and societies is not possible today without new technologies of the third and fourth development-civilization waves. This, in turn, requires a radical change of attitude towards science and education, as factors of development and cognitariat as an actor of new productive forces.

Futurologist John Nisbet, in his study „Megatrends 2000“, warns us - that in modern times we must learn more and more from the future, just as in traditional societies we learned from the past. New „signal lights“ (Bourdieu, 2019) for our movement through space and time are provided by science today, not by „stone text books“ and „roadside signs“. In our era, the relationship between the process of tradition and modernization has changed radically. In various cultures and civilizations, there are controversial views and relationships about it: from the radical breaking of *discontinuity* to convergence and complementarity. Historical experience indicates the need to build a harmonious relationship between these processes, if we wish to maintain technological development and progress as well as preservation of cultural identity (example of China and Japan).

Contemporary sociological research, as well as comparative - historical studies by scientists, show us that different societies have different capacities and abilities for innovation: ranging from innovative, imitative to blocked. Different peoples possess different potentials, but also different views and programs for the future, as well as different development and management strategies, which are realized in practice. The selection of development programs and strategies is usually not dictated by the mere voluntarism of the ruling elites, but also by the constellation of forces of internal and international factors.

Habermas and Levingstone are critical of our - instrumental civilization of means without goals and dislocated modernization, and Chomsky (2002), writes about colonial *controlled democracy*. Bourdieu writes about globalization as „exploitation without borders“. Although we live in the age of new technologies and globalization, sociologists reveal to us the invisible being, the hidden character of our civilization. The founder of the paradigm of information development and the networked society, Manuel Castells (2002), - writes about the growing discrepancy between hypertechnological progress and social sub-development; on the other hand, the leading anthropologist and humanist of our time, Edgar Moren (2010), points us to the anthropological roots of the contemporary crisis. Namely, that we are facing a crisis, because modern humanity is not humane enough.

All of this warns us that the problems of modern development must be approached in a complex, multidisciplinary manner if we want to learn the real truth about the nature of modern megatrends, the possibilities and actors of further

sustainable development of humanity. All the above obliges science to critically review modern concepts and categories and build new syntheses in the social and humanistic sciences. Their development and reaffirmation of their calling is not only possible through the advancement of scientific neopositivism, as it is considered from a number of the apogee of quantitative methodology, that is, through technical improvement of research methods and techniques, but also through the construction of new theoretical paradigms, the redefinition of the subject of science, the discovery and construction of new transdisciplinary scientific fields, through a system of integrated research studies of new forms of meeting, dialogue and spillover of knowledge from natural, social and technical sciences. The problems that modern science is facing cannot be solved by minor »reformist« fixes against the background of technical optimism, but by changes that have a deeper paradigmatic character and require the efforts of a new generation of scientists of different profiles.

In this sense, we would like to point out - that in contrast to the current fashionable and layman's exploitation of numerous terms (modernization, sustainable development, quality of life, progress), the sociological assessment and valorization of these terms and processes in research practice must be clearly distinguished from mere economic, technocratic and political use. Today we are faced with disciplinary chaos and particularism in science, with the expansion of technical terms into the field of social and humanistic sciences; with their functionalization, as well as *dehumanization and instrumentalization*. The expert analysis by sociologists in modern society is needed both for the diagnosis of its problems and for predicting the direction of further development. Nevertheless, it must differ in terms of quality, character and scope. As a matter of fact, sociological analysis is not a mere quantitative description of a phenomenon, but its in-depth research in the context of the whole, from the point of view of the social structure and dynamics of global society and humanity, as an emerging historical totality. It must not be a simple point of view of the particular interest of a corporation, institution, area, nation or state. Unfortunately, in modern times, this integral approach is suppressed and replaced by disciplinary particularism, which produces cognitive deformation and pathology.

In contemporary science, an integral transdisciplinary approach in researching contemporary problems is affirmed today by rare individuals - protagonists of understanding the global complexity of the world and man (E. Moren, Z. Bauman, P. Kertz, P. Bourdieu, I. Wallerstein, Z. Zigler...). In their studies, there happened a happy *fruitful* meeting of: historical, structural and cultural-anthropological analysis. Regardless which subject is the object of analysis and at what level (from micro structures in the local community to the global problems of modern humanity), these authors provide a highly competent professional analysis, in which the humanistic coefficient and the social cost of changes are never lost; there is also an assessment of what is the impact of a given phenomenon on global changes and the quality of life of the modern world and future humanity.

3. CONTRADICTIONARY TENDENCIES IN MODERN SCIENCE AND ITS TENSION BETWEEN FRAGMENTATION AND UNIVERSALIZATION OF COGNITIVE POWER

In modern philosophy and in the sociology of knowledge and the deontology of scientific vocation, the awareness of the limitations of a partial approach, methodological individualism and scientism, for understanding the essence of the epoch-making processes that have gripped modern humanity: from scientific and technological progress, globalization to ecologically sustainable development, models of global management, is increasingly maturing. It goes all the way to inequality, conflict and the culture of peace, health, crime and terrorism to the question of the survival of the planet.

The oldest living anthropologist E. Moren (2010), points out the essential cause of the crisis of modern humanity, as well as that it is necessary to change the theoretical approach and research methodology in modern science - from partial scientism in the study of man, society, development problems - to an integral - holistic approach. E. Moren, as a thinker of global complexity, believes that in modern science, the horizon/perspective of research must be extended to man - the world, society - the world, that is, we must build a kind of complex transdisciplinary science about the world and man - embodied in *mondology*. Only through new cooperation and synthesis of the results of natural, technological and social-humanistic sciences can we reach valid scientific results, which bring scientific innovations and do not have a destructive function for man, society and nature, and are of fundamental importance for the development of humanity and the ecological survival of the planet.

The Enlightenment had affirmed the power of reason and science for social progress and emancipation of man. Nevertheless, contemporary science, in the Faustian unlimited pursuit of knowledge, has also led to the idolatry of a fragmented world of facts, disciplinary chaos and fragmented work; it is cannibalism without a soul which goes all the way to a new creation and alienation of man and society. The instrumentalized results of modern science by the actors of the absolutization of the power of capital and the new social Darwinization of the world and the rise of the new right / restoration of fascism have led us to the fact that today scientific laboratories are used more for the production of biological and chemical weapons and the destruction of the world than for the development and quality of life. The new super rich (Gates and others) are increasingly involved with the drug mafia and the forces of militarism, forgetting that in that way, as „forgers of false progress“, they are introducing humanity into the field of possible collective suicide. Doesn't the experience with the Covid-19 pandemic illustrate the global „fugue of death“ and the introduction to the morbid black epoch of martyrdom and the fate of Atlantis!?

It is precisely by having in mind these disastrous results of the expansion of the scientist's destroyed mind and the consequences of its results as well as the instrumentalization by megacapital that the following happened: - following the

deontology of their calling, scientists, humanists sent an alarm – „signal lights“ about the dangers where our „civilization of the instrumental mind and dislocated modernization“ (Habermas, Levingstone, Paul Kertz, Pierre Bourdieu...). Among them are our famous philosophers and humanists (Mihajlo Marković, Svetislav Stojanović, Zagorka Golubović...) who warned that modern humanity, intoxicated by the new siren voice of the omnipotence of the market and capital, the logic of „profit above people“, ultimately leads to canceling the logic of life, destroying society and the survival of our planet! Dobrica Ćosić, in his story *Bajka*, described as a dystopia the terrible picture of the fate of humanity's possible nuclear Atlantis, in which, in addition to our species, other worlds of flora and fauna would burn, and the planet would be turned into a new lifeless desert of ash and death (Ćosić, 1966).

Our philosopher Svetozar Stojanović (2000), in „Titanic“ and „Humanik“, deals with a kind of negative dialectic of the absurd: how, in its adventure, science became - from being a builder of bridges of knowledge, humanism and emancipation, the instrumentalization of the mind by the megapower of capital and politics militarism – it actually became an alienated force of destruction. This author, among other things, writes: „By nuclear arming of the world, humanity today is playing apocalyptic roulette!“ Today, humanity is on the Titanic, rushing to collective suicide, while there is no mass movement whatsoever in the world for the survival of humanity (Stojanović, 2000:9). Hence his appeal in the article *Humanik* (2000), an alarm for the world public and our conscience - that today the basic existence of not only man but also other species and the survival of the planet is threatened. Thus, today it is not enough just to philosophize, i.e. to search for the essence of phenomena, but one must mobilize the public for the survival of man and the world! In this resistance, Professor Stojanović points out, everyone must be on the new world front of the fight against the destructive new fascism, whose protagonists are not only traditional militarists and dictators, but also technoscientific elites, those new „smiths of false progress“, who have sold their souls to the devil in the service of the alliance of the god Mammon and the god Mars.

It is high time for the scientific community to send an appeal - an alarm - to sober up and wake up - in the face of the new dangers that our civilization and the forces of rampant mega-capital and the instrumental mind bring to humanity and our survival, because „tomorrow is always too late!“ (F. Major, 1991). If *Humanik* does not win, it is certain that *Titanic* will bring us a black fate, the new Atlantis of humanity!

Dear colleagues by vocation, dear scientists and methodologists, you should understand well the philosophical deontological message of the old wise Socrates from the Athenian Agora who said: *All knowledge is worthless if it does not make a person better!* But, you must also understand Pierre Bourdieu, who, pleading for the rehabilitation of the critical-cognitive, social-humanistic and emancipatory role of contemporary sociology, writes about it in the spirit of Mills' tradition of reflexive, radical sociology and „martial discipline“, underlining - that they “who have the opportunity to devote their lives to the study of the social world,

cannot stand neutrally and impartially on the sidelines of the struggles in which the future of that world is at stake" (Burdije, 2019:193). We must also always keep in mind the message of the recently deceased Immanuel Wallerstein, an American sociologist of world renown and president of the International Association of Sociologists, who warns us: „Investigations of truth in science must never be separated from the search for the paths of goodness/justice and the emancipation of man/humanity.“ Therefore, if the role of a scientist should not be a „futile vocation“ (M. Brdar, 2005), he must critically investigate the existing world, discovering in it not only limitations but also captured possibilities and actors of the construction of the historical novum. In short, a scientist must shape and transform these opportunities into a positive model of alternative social development. In other words, as Wallerstein points out: „after the black period of transition, we must offer an essential post-capitalist alternative (whose time will come in the middle of the 21st century) which will be a collective creation. Only then will we have a chance for Gramscian hegemony in world civil society, and therefore we will have a chance to win the fight against those who strive to change everything in order to change nothing...“ (Wallerstein, 2005:149) In this anti-systemic strategy, the fight will be fought on several fronts and with a plurality of actors, as Wallerstein says „we will sail on uncharted seas with numerous challenges and uncertainties and whirls. You must decide to which shore you want to swim, if you don't want to drown. On this path, we must look for a combination of sobriety of reason and imagination. That project will be a synthesis of local and global experience... that fight will be international, and we will find its actors in the most unusual places, in every corner of the world (Wallerstein, 2005:149).

This Wallerstein's projection of anti-systemic transformation of the current collapsing world system and the emergence of a new one is not triumphalist but realistic and optimistic. His social forecasts are based on the best studies of megatrends, ideas and new actors whose time is coming. In these processes, which have engulfed the global world village, one cannot be opportunistically neutral and clean (in the spirit of the stabilocratic ideology of political correctness or a popular proverb – „the world is on fire and we idly standby“). On the contrary, both science and intellectuals, both secularists and believers, must take the results of their research and knowledge as a stake in the moral and social struggles in which the future perspective of development, the humanization of society and the emancipation of man as well as the survival of the planet are at stake.

4. MARGINALIA ON THE CRISIS OF MODERN SOCIETY AND THE SEARCH FOR A NEW DEVELOPMENT ALTERNATIVE

In modern times, we are witnessing the crisis of neoliberal globalism, as post-modern totalitarianism, the project of new inequalities and the rampant absolutization of the power of mega-capital, whose actors have hypocritically presented themselves for 40 years as proponents of the concept of desideologizing

science, open society, liberal democracy and the end of history. The real trends of globalization and transition did not confirm but overturned all these myths. We actually have here the processes of asymmetric social Darwinist globalization as the recolonization of the world, transition without social responsibility / in the form of dependent modernization and restoration of „disaster capitalism“ (Klein, 2008) in post-socialist countries. As a consequence of such developments in modern times, we are faced with numerous social and regional inequalities that are reflected in the form of growing contradictions and conflicts. This new Orwellian reality of modern capitalism, as a global production process, has led to enormous class and regional inequalities, where in the modern world the gap between the developed and the underdeveloped as well as between social classes is growing more and more. All this affects the migration flows of the workforce in the world market, the migration of capital and knowledge elites. Behind the story of human rights and democracy without borders, a new reality is hidden - faster movement, concentration and multiplication of mega-capital that moves freely from country to country, from region to region, from continent to continent across the planet. The new capitalists, following the logic of profit, unhindered, economically, politically, and media-wise, occupy the world. For them, profit is above all other values, it is the supreme good. We are faced with the new global international of capital and the disintegration of the world of work, its enormous exploitation and enslavement. The god Mammon and the god Mars unite in the voracious redistribution, in the conquest and enslavement of mankind. The reality of the cruel world order is the enormous growth of inequality and poverty, the deficit of global solidarity, the destruction of the welfare state, the suppression of the forces of the left, the marginalization of unions, the restriction of labor and social rights of employees, the spread of neoliberal ideology and the metasocial fatalistic discourse - market fundamentalism about the lack of alternatives to capitalism as destiny. We are told that the reforms are only a way to adapt and restore capitalism in the new areas of the planet.

This type of pirate capitalism produces war, as an „instrument of achieving politics by other means“ it produces neo-imperial conquest of the world as a function of the new geopolitics of resource distribution (Clauzewitz, 1943:280). The other face of colonial democracy reveals the morbid game of the god Mammon and the god Mars, who by expanding the boundaries of their power cause conflicts all over the planet. Numerous actors operate in this complex alliance for new world domination: TNC, IMF, global media and NATO, and the social characters of this alliance are managerial technocracy as well as financial and military elite. Unfortunately, behind the current architecture of the EU is the Internationala of capital. Austrian economist Hans Hofbauer, argues about this in his study „Enlargement of the European Union in the East“ (Hofbauer, 2003). All the rest is nothing but „bells and flags“, a media apology, a new ideological smokescreen of deception and sowing of illusions. Unfortunately, in this ongoing war, the media is often a precursor, and war is the final, cruel means of subjugation, overthrowing regimes and redrawing borders. In this context,

the OUN has become a blocked and powerless and ineffective institution. New centers of power are being created, new forces of the so-called „liberal world hegemonies“, which open space for the unhindered appearance of the right, the revision of history, the rehabilitation of fascism, but also the emergence of terrorism, ethnocentrism and neo-racism. In their studies, critical scientists - sociologists and political scientists: Chomsky, Bourdieu, Wallerstein, Chusudovsky, Ziegler, Panarin - write about this as the rise of the forces of historical regression and neoconservative restoration. Wallerstein (2005), points out that after two centuries of the liberal civil revolution and a century of active struggle for socialism, the forces of neoconservative restoration are on the scene in all domains: from the economy, through politics, culture, education and science. The processes of creating transnational capitalist classes and a new hierarchy of world power are at work: corpocracy, technocracy, scientocracy, politocracy, mediocracy and militarism. This mixed coalition of superpowers rules the world today, binding it with numerous instruments, with „chains“ of labor power, occupying the world and determining the uncertain fate of humanity. A new Orwellian era is at work. The point is from Orwell's messages: „If you want to imagine the future of the world, imagine a boot that tramples humanity over and over again forever!“ (Georgi Orwell, 1984), Unfortunately, this is our cruel present, which we are already living, enslaved. The world is on the new Titanic, where it travels towards the new Apocalypse with the seductive siren's voice and media spectacle.

Today, we witness the marginalization of social and humanistic sciences, and the shameful defeat of critical thinking and moral conscience. Most facilities in scientific laboratories and scientific institutes, as well as in the media, are occupied from the outside and from the inside: by means of financing, by mediocre staff, for whom enrichment is the supreme value, not the honorable vocation of scientists. The question arises: where are the world and humanity going to.

5. WHERE IS THIS WORLD GOING TO? (TOWARDS A NEW DEMOCRATIC GLOBAL COMMUNITY OF HUMANITY OR ASYMMETRICAL GLOBALIZATION UNDER THE IMPERIAL CONTROL OF MEGA-CAPITAL?)

The question arises: Where is the world going to? The famous Shakespearian question is more than current today - to be or not to be, is the question now? Is there any salvation for us or is there a movement towards a deeper crisis, entropy of the system? Is the Apocalypse the only fatalistic outcome that awaits humanity at the end of the road; the humanity that has failed to save its humane characteristics, which is crumbling and disintegrating, destroying itself and the planet? Why are we so engrossed in the morbid game that we do not see that we are entering the black hole of Hades? Have we quarreled with life,

robbed the planet, humiliated humanity, sold our souls to the devil, who leads us to the square of death - a collective wasteland? Is there hope for salvation and what should we do?

Unfortunately, humanity today lives under the sign of a sociological paradox: it is hyper-technologically connected, but socially fragmented. We live in a society of glass, in a society of atomized individuals that connects the world of illusions, „smiths of false progress“, political and media manipulations of the spectacle society.

We are faced with a crisis of prolonged duration, which is not only an economic crisis, but it is also civilization-developmental, socially structural and scientific and moral crisis. There is a split between education and upbringing, politics and morality, development and ecology. The crisis is at the same time identity crisis, as well as moral and mental crisis. We are faced with social anomie in society; with growth of depression and personality neurosis; with the phenomenon of the expansion of personality desegregation, the increase in the number of suicides in the world. There are more and more lonely people, there is a growing generation of outnumbered people who see themselves as discarded, redundant people. Behind the media spectacle, various festivals (either in the form of revival of traditionalism, mythomanship, folklorism) or modern parades (from prides to other spectacles and eccentricities) in everyday life there is more and more restlessness, melancholy, chronically depressed and aggressive people: it goes from domestic violence to violence in schools, at mass sports and other gatherings. The world is in dramatic motion: flooded with numerous global migrations - refugees, tourists, dislocated, uprooted, alienated people - zombies who roam the world in search not only of work but also of themselves. People scattered like mine rats on the eve of a great accident. The young are bawling – as well as the old who wish to rejuvenate themselves. Everyone is at odds with life and themselves. People are not realistically confronting this pathology, which is not only individual but also social and threatens to become *en masse*.

The mass consumer „spectacle society“ (Gi Debor, 2018) is not a healthy but a sick society. In it there are more and more zombies, living - dead, depersonalized split personalities who wish to satisfy their hunger for meaning and cure their misery by searching within some form of consumerism (from excessive consumption to drugs, alcoholism, sex). This „lunch package“ always includes numerous palliative opiates, which falsely treat the symptoms, but not the causes of the disease. And so we spin in a vicious circle, bawling like lost in the desert, and our hymn has become the weeping prayer of Job. Many people remind us that we are on the Titanic that has suffered a breakdown, but no one has yet given us a life-saving alarm. In such a chaotic world, both science and scientists, unfortunately, do not often stick to the ethics of their vocation; in the era of academic capitalism, they have become apologists for colonial politics and politics of the „fishermen of human souls“ (Šušnjić, 2011). They have increasingly become dealers in fake money, manipulators and rulers of our souls and destiny.

6. LOOKING INTO THE FUTURE: IS THERE HOPE FOR AN ALTERNATIVE MODEL OF THE WORLD AND WHAT SHOULD WE DO?

In the era of new technologies and digitalization, space and time have been condensed, the world has been narrowed down, but socially it is still fragmented, crushed and divided. We have in front of us an uncertain future, but also work, a multiple need for engagement: which is not only cognitive, but also of a social-action nature. Nevertheless, it is not the privilege of parties and movements, nor of the technocracy of engineers, corporations/managers or politocratic elites. It is the categorical imperative of the entire humanity, as Antonio Negri would say - of the „plural multitude“, in the creative-emancipatory movement to make the world a better place for the lives of all inhabitants, peoples, races, layers of society and generations.

It goes without saying that the scientific community has a special and avant-garde role, because „Universities today are one of the last strongholds of creative thinking. Therefore, that space must be preserved at all costs“ (Cigler, 2017:105). Although destructive processes are at work - under the influence of the expansion of the ideology of neoliberalism, the rise of academic capitalism, the symbolic violence of capital - we must defend the autonomy of the university from the strategy of the oligarchs, both multinational corporations and financial capital and politocracy. We must do this in order to free creative potential and energy from the universities' intellectual workshops for critical thinking and alternative projects of the „future that has begun“, but also for the survival of the planet.

In this context, there are indisputably socially current and scientifically significant issues that are discussed in a multidisciplinary manner by this **international conference of methodologists under the aegis of SANU**; this is because today the new division of labor and new technologies are not born in the field or in the factory, but in scientific laboratories, universities and institutes. However, the following is a priority from the point of view of releasing these most creative potentials of every nation and humanity: we must encourage elites winged by memory, their knowledge and imagination - we need to build the star paths of humanity and peacefully conquer the world, not by militarization and accumulating new stocks of nuclear weapons. Therefore, we urgently need a critical review and release from the harmful consequences of the marginalization of social and humanistic sciences from the era of neoliberalism's dominance. Instead of affirming Kant's categorical imperative about panhumanism, global solidarity and eternal peace – it has brought us the spread of the colonial spirit in science with numerous negative consequences for the development of science, but also for society itself. We need to liberate universities and science from forms of colonial dependent modernization, we must return science to the right path - to serve the search for truth, but also to bring about sustainable development, humanization of social relations, human emancipation and the survival of the planet and humanity.

In this context, an urgent review of the effects of the Bologna reform on the destruction of the educational and scientific system is necessary. We must face the frenzied disciplinary chaos, which fragments the scientific system and turns the academic social community into atomized fortresses of spec-eaters / fah idiots. Further, we must ensure rehabilitation of the unity of education and upbringing; development of multidisciplinary and transdisciplinary research; improvement of the ethics and deontology of the scientific profession; and especially from the point of view of the problem we are considering, the need to build a new unity of theory and research methodology in science, to liberate vulgar technicalism and shallow empiricism, to rehabilitate the importance of philosophy for the development of modern science, but also to realize the unity of natural sciences, technical and social-humanistic. It is especially necessary to highlight the role of basic research for the further progress of applied and action research in science.

In this context, a critical examination of numerous theories, concepts, categories and notions is necessary, as well as the critical examination of the scope and limitations of not only research techniques, but also a redefinition of the strategy and methodology of scientific research and the deontology of the vocation of a scientist. Herewith we remind you that Alvin Guldner, in his study *For sociology*, 40 years ago, criticized such tendencies in Western sociology, pointing to methodological superficiality, shallowness and ignorance. We wish to point out that methodologists must know well the theories in certain fields of science, as well as the primary and secondary literature on the subject of research, when they embark on a research endeavor. Furthermore, great scientists in the social sciences, from Marx, Durkheim, Weber and Mills - pointed, out the importance of theory, but also history for understanding the dialectic of social changes. These incidental observations only warn us that the methodology of scientific research at our universities should be taught by the best researchers in a certain field, true professionals, and that it should not be left to delitanistic improvisations, which pave the way for quasi-researchers and pseudoscience.

Hence, in contrary to the tendency of idolatry of „crushed work“ in science, it is necessary for us to reaffirm complex thought and ethics, to develop awareness of the interconnectedness of the world of all sciences and disciplines, as well as the unity of nature, society and man. This is exactly what the great anthropologist and humanist, today the oldest living philosopher of our time, Edgar Moren, pleads for in his „Ethics“ and studies in the methodology and sociology of knowledge: we must develop planetary humanism, planetary bioethics and the opening of social development and progress towards the whole set of challenges in the world of the survival of man and the planet. We must, furthermore, bring about the realization of the categorical imperative about the unity of parts and the whole, local and global, particular and universal, panhumanism and transhumanism. Against this background, in this perspective, the modern methodology of scientific research, in cognitive practice - must achieve

new breakthroughs; it must productively overcome the current dichotomy between methodological individualism and methodological cosmopolitanism (Beck, 2013:39-44), between the logic of quantitative and qualitative methodology - both in order to improve the scientific work, as well as to improve the humanization of social practice.

It is time for new critical re-examinations of the virtues, superior achievements, but also of „Achilles' heels“, vulnerable points or weaknesses in the modern methodology, in order to release the potential of the scientific thought of the cognitariat elite for new creative achievements. On that path, it is necessary to develop and intensify new forms of interprofessional communication and international cooperation, and it is expected that scientists lead not only in the development of knowledge, but also in the spread of ideas about the importance of solidarity, understanding and the culture of peace in the modern world.

In order for us to overcome the current crisis, which is structural and long-lasting (Wallerstein, 2005) we need the efforts of a new generation of researchers who are less captives of ethnocentrism and who, while respecting their national identity and interests, must be oriented towards world society and humanity in the making and towards the issues of the survival of the planet. All of them should selflessly invest their knowledge in the game for life, development and peace, rather than being worshipers of the god Mammon and the god Mars. I want to believe that their time is coming and they should be wholeheartedly supported both in their Faustian odyssey for knowledge and in the fight for a better, fairer and more beautiful future for humanity.

The current world system is dying: the crisis of not only liberal colonial democracy is at work, but also of the current model of asymmetric globalization and the shock doctrine of „disaster capitalism“ (Klein, 2008). It is high time that the logic of capital is replaced by the logic of solidarity of united humanity. It is up to science to explore new possibilities of a social-democratic post-capitalist alternative to the development of the world, and it is up to the pluralism of actors of democratic changes to free humanity for humane and sustainable development. Because, as Jean Ziegler points out in his study „Change the world!“, „the future belongs to the liberated freedom in man“ (Cigler, 2017:310).

In this context, it is necessary for us to explore new ways of resistance and actors of coalitions and partnerships in the fight for the social democratic development of the world, on the basis of joining forces from below and the unity of direct and on the basis of representative democracy, as well as the active participation of equal citizens and peoples in the development of institutions of global governance based on the principles of democratic integration, global solidarity and new internationalism, so that humanity can conquer new spaces for the democratization and humanization of society and the emancipation of man, so that our planet becomes safe from possible apocalyptic, global and local risks. Otherwise, our Titanic will not reach the new shore and may suffer the fate of Atlantis.

7. INSTEAD OF CONCLUSION

The question arises: Where is humanity rushing to and is there any way to save it? What should we do in science to change the current state of science and modern society?

1. Perform a fundamental critique of the modern system of education and science (the pernicious tendencies of neoliberalism as a new ideology, apologies for the order of power and force; confronting the colonial spirit in science and the pathology of academic capitalism).

2. Renew the connection with philosophy for the sake of the development of science itself and its humanization (methodological progress and critical-emancipatory engagement of scientists in modern times).

3. To rehabilitate the importance of basic research in science and their role in the development of applied research.

4. Develop the practice of multidisciplinary and transdisciplinary research as a way towards an integrated paradigm and overcoming the state of disciplinary chaos in science.

5. Redefine the subjects of social and humanistic sciences and new problem fields of joint work of scientists of natural, biomedical, mathematical, informatics-engineering and social-humanistic sciences. With all the divisions, differentiations and specializations in modern science, one must never forget that the world and humanity are *One and All*, a common whole/planet, our homeland. And, as the poet says: „And when one leaf is torn off or dies/or one man dies - then the whole planet trembles with pain“, or as John Donne says: „When the bell rings, know that it always rings and for you!“

6. Pay special attention to the development of deontology, the ethics of the vocation of scientists, in the spirit of planetary humanism; with all respect for geocultural, regional and ethnic identities.

7. Rehabilitate the importance and role of social and humanistic sciences for the scientific understanding of the developmental problems of modern society and the development of critical awareness of new generations in the struggle for the democratization of modern society.

8. Advocate for the realization of the unity of education and training in modern schools and universities in the function of developing healthy personalities of the current and new generations and their engagement in social changes.

9. Demystify the concept of „knowledge society“ and „open society“, as well as rehabilitate exiled concepts if they have vital heuristic methodological power for analysis and social predictions in modern science.

10. Finally, it is high time that science engages itself in the search for alternative projects of sustainable development and progress, and a social democratic system of governing humanity before it is too late. With the warning that science itself must have moral limitations in its deontology, so that its creativity should not serve an alienated power and the morbid goals of destroying the existence of man, the planet and the cosmos. Because, as

Edgar Moren warns us: »We have to think about the survival of the planet and humanity, because the current crisis stems from the fact that humanity is not human enough«; or as our philosopher and humanist *Proff. Svetozar Stojanović*, puts it: „The survival of humanity and the survival of our planet is an absolute prerequisite for maintaining and improving all other values – it is an *intrinsic value*, i.e. the real question of all questions. Because, for the first time, the question of existential survival is raised in a sharper form - above the essence“ (Stojanović, 2000:25).

All these warnings of scientists and philosophers indicate just how much our civilization, despite all the achieved technological progress, is still imbued with strong contradictions with possible uncertain consequences and fatal perspectives. That is why we have to think about Shakespeare's verses and in the key of his questioning *whether our age has also gone out of joint... To be or not to be is the question now, whether it is better to suffer the arrows and swords of fate hanging in the soul or to stand up in arms against the sea of misery and put an end to them with a fight.*¹

* * *

We live in the age of the rise of a general crisis, the spread of the chillness of unrest, in the age of global uncertainty, distrust in the progress and future of humanity. If the war in Ukraine spins out of control, Europe and the world may find themselves in the death grip of Russian and American cruise missiles; we might face a nuclear war, with a catastrophic outcome, which would kill humanity and put into question the survival of life on the planet.

It is as if we have learned nothing from history: not only from the messages of Enoch's oldest book of prophecy – that the world will suffer once from water, and once from fire, but from the great war slaughters of the 20th century, the age of werewolves, as well as from the current Covid-19 pandemic, and the global death fugue of the 21st century? Is it possible - until yesterday they were assuring us about the future that is our business, that globalization is the future that has begun, but the only problem is that it has not been distributed fairly. Now they are telling us about the need for the remoralization of globalization, the change of the world system and Hamlet's dilemmas about the uncertain future of humanity?

Instead of talking about the value neutrality of science, political correctness and the clean hands of scientists, it is high time that as part of the intellectual public and the conscience of humanity (aware of the fact - that the right to life and peace are basic human rights without which all other rights are meaningless; that without global justice there is no global peace in the world , as well as that tomorrow is always too late, we make an appeal to modern humanity: that dialogue and peace have no alternative; that it is necessary to join the actors of the new manifesto about planetary humanism, the Earth as our common homeland. There is also the need for a revolution of understanding and

1 The Danish princ Hamlet's monologue (V. Shakespeare).

global solidarity of humanity in the fight to build an alternative project of social democratic sustainable development and progress of the world as well as the survival of the planet.

Naturally, all this cannot be achieved if in the modern academic and scientific community we do not develop an awareness of the meaning and importance of core in-depth research in science for the further development of all branches of science; we must further develop their transdisciplinary cooperation and synthesis, without which there is no discovery of scientific novelties and paradigms. But, even if we do not reaffirm the key values of ethics / deontology, scientists are called - in the service of Truth, Goodness and Freedom, i.e. they are invited to use their knowledge to be engaged in the fight for the humanization of society and the emancipation of man, to honorably serve their people and humanity. Exactly as Đuro Daničić said: „one can die for the motherland at any job!“

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Љубиша Р. МИТРОВИЋ

ПОЛОЖАЈ ДРУШТВЕНИХ И ХУМАНИСТИЧКИХ НАУКА
И ЊИХОВА УЛОГА У РАЗВОЈУ КРИТИЧКЕ СВЕСТИ И СТВАРАЊУ
АЛТЕРНАТИВНИХ ПРОЈЕКТА ДРУШТВЕНИХ ПРОМЕНА

Маргиналије о важности фундаменталних и трансдисциплинарних
истраживања и деонтологије професије научника

Резиме

У прилогу аутор разматра положај друштвено-хуманистичких наука у ери неолибералне хегемоније у образовању и последице академског капитализма у постсоцијалистичким друштвима у транзицији. У овом контексту у фокусу се налази анализа утицаја болоњске реформе на разарање научног система, комерцијализацију високог образовања, на расцеп образовања и васпитања, маргинализацију фундаменталних истраживања и друштвено-хуманистичких наука.

Изаз из садашње кризе у науци (стања дисциплинарног хаоса и размрвљеног рада) аутор види у обнови значаја фундаменталних и афирмацији трансдисциплинарних истраживања, у грађењу нових синтеза – интегрисане парадигме о друштву, повезивању креативних резултата теоријских и емпиријских истраживања, сарадњи науке и филозофије, мондологије, антропологије, екологије и културологије у пројектовању глобалних друштвених промена, одрживог развоја човечанства и опстанка планете.

Кључне речи: маргинализација друштвено-хуманистичких наука, интегрисана парадигма, фундаментална и трансдисциплинара истраживања, алтернативни пројекти одрживог напретка, деонтологија позива научника.

*Nedjo S. DANILOVIĆ**

MB University, Faculty of Business and Law, Belgrade, Serbia

FUNDAMENTAL RESEARCH ON WAR AND ITS SIGNIFICANCE FOR THE PROGRESS OF GLOBAL COMMUNITY AND PROSPEROUS DEVELOPMENT OF MODERN COUNTRIES

Abstract: The subject of the paper is the fundamental research on war and its significance for the progress of global community and the prosperous development of nation states. The aim of this paper is to, based on the description and classification of international legal, political, economic, socio-psychological, informative-propaganda, and war consequences of numerous wars of the modern era, discover and scientifically explain the necessity, regularity and legality of not entering into war adventures in the future, especially in sensitive regions burdened with history. Almost all basic analytical and synthetic methods of knowledge were used in the paper, with the focus on analysis, synthesis, classification, abstraction and inductive-deductive method. Of the general scientific methods, hypothetical-deductive, statistical and comparative methods were applied, while of all methods used for data collection, the test method was used, using the survey technique, as well as the operational method of document content analysis with qualitative and quantitative analysis techniques.

Permanent application of fundamental (basic) research on various aspects of modern wars improves the fundamental knowledge in the field of polemology – the study of war, as well as in other scientific fields that are directly and indirectly interconnected in war. Fundamental research on war and other modern forms of warfare is focused on creating, refuting and supporting theories that explain the fundamental natural, technical-technological, bio-medical and social realities that are an integral part of war and other derived forms of warfare.

These researches generate new scientific ideas, which, if aimed at overcoming war as a means of resolving conflicts and disputes between military-political blocs, sovereign states, peoples, ethnic and religious communities and other social groups, represent the basis of development, progress of modern states and regions and global community as a whole. The main result of this

* Full Professor, President of the International Association of Methodologists of Social Sciences, danilovic.nedjo@gmail.com

paper is the knowledge that without fundamental research on war as a complex social phenomenon, it is not possible to achieve new scientific knowledge, new axioms, postulates, principles, laws and theories that will refute wars in the modern conditions of technical and technological development and prove the futility of all conflicts between people, social groups, ethnic and religious communities, peoples and sovereign states.

Key words: science, scientific knowledge, scientific research, fundamental research of war, methodology and methods of research of war.

1 INTRODUCTION

In the introduction to this complex topic, there is a need to first define the terms research and scientific research. Research is a categorical term in science that has been defined several times so far, both in everyday language and in the sources of numerous scientific fields by authors from different backgrounds. For the subject of this paper, definitions of research in theoretical-methodological sources are particularly significant, where a significant contribution to general and special methodologies in all fields and areas of science has been provided.

It is known from the history of general and special methodologies of science that research is not only a way of collecting data with examination, but a complex process in which new knowledge is necessarily realized. Research is „a cognitive activity of analysis and reasoning, which takes place in practice, on a practical and real problem and precedes a specific request in reality...” (Gilli, 1974: 12). Scientific research is not just any knowledge of the facts of objective reality, but systematic, scientifically verified methods of learning something new (Milosavljević, 1980: 9).

Although every mental process is a component of scientific knowledge, not all thinking is scientific, just as not all research is scientific. In order for an opinion to be scientific, it as a component of scientific research must have the properties of objectivity, scientific foundation, logic, gradualness, consistency and coherence, realism, complexity and systematicity and only as such, in synergy with a whole series of intellectual, manual and combined, creative, routine and technical research procedures and activities produces new scientific knowledge.

It is evident from the above statement that scientific research is not just any collection of facts, but an organized, systematic and complex process of acquiring scientific knowledge, i.e. a new level of scientific knowledge, structured within itself from harmonized systems of existing scientific and other experiential knowledge, thought processes, technical and routine of research activities and procedures connected into one logical and coherent meaningful whole, directed towards the main goal - the acquisition of new scientific knowledge (Milosavljević, 1980: 9).

Therefore, we can state that „scientific research is a systematic, planned and objective examination of a problem, according to certain methodological rules, the purpose of which is to provide a reliable and precise answer to

a predetermined question” (OECD, 2015). Research is any creative systematic activity undertaken using verified scientific methods with the aim of increasing the existing fund of scientific knowledge and acquiring new knowledge. Scientific research is a gradual and studious investigation or examination, i.e. special research or experimentation undertaken with verified scientific procedures and methods aimed at the discovery and interpretation of new facts, the revision of accepted theories or laws in the light of new facts and the practical application of such new or revised theories or laws (<https://www.merriam-webster.com/dictionary/research>, 01.09.2022).

In the theory of general science and in the special methodologies of science, scientific research is classified according to different criteria. For the purposes of this paper, the classification criterion according to the research function is particularly important, according to which scientific research is classified into fundamental, applied and developmental research. The International Association of Methodologists of Social Sciences dedicated a special conference to applied research and its importance for the development of science and solving practical problems in modern society, so due to the limited space in this paper, we shall not deal with applied and developmental research.

2 THE SUBJECT OF FUNDAMENTAL RESEARCH OF WAR

In the current state of international relations, it is of great importance that basic (fundamental) research is focused on research on war and other forms of modern warfare - hybrid and asymmetric war, psychological propaganda war, economic war, political pressures, blackmail, classical aggression, military and humanitarian interventions, special military operations, etc. The basic research of these challenges has the role of fundamental contribution to the development of scientific knowledge that modern civilization is crying out for. Such research resolves basic (fundamental) issues of social and scientific laws and legality in this specific and complex area of social life. The subject of fundamental research on war as a whole and certain modern forms of warfare has a general character, and the results of this research has a strategic scientific scope, both for the development of the global community and for the prosperous development of certain regions and modern countries.

Basic (fundamental) research on wars improves fundamental knowledge both in polemology as the science of warfare, and in all areas of science that are directly and indirectly intertwined in war. Fundamental research on war and other modern forms of warfare is focused on creating, refuting and supporting theories that explain fundamental natural, technical, biomedical and social phenomena and realities that are an integral part of war and other derived forms of modern warfare.

Fundamental research of these complex and specific social realities generates new scientific ideas, axioms, postulates, principles, laws, theories and

scientific systems which, if aimed in the direction of overcoming war as a means of resolving conflicts and disputes between military-political blocs, sovereign states, peoples, ethnic communities, religious and other social groups, represent the basis of development, progress and advancement of both modern countries, regions and the global community as a whole. Although rarely helping to resolve specific war situations, fundamental research on wars in principle encourages new thinking and approaches to solving current global, regional and local misunderstandings and future war conflicts.

In response to the growing current needs of the modern world, it is necessary that the fundamental research of conflicts and reasons is focused on the in-depth study of wars, international and social situations that preceded them, through their outbreaks, the feedback effect on the global community, the sovereignty of the territories of modern states, their human potentials, natural, ecological, energy and material-technical resources, respect for laws and special rules of warfare, customs and norms of international public and humanitarian law, as well as the law of armed conflicts, all the way to finding the best ways of sustainable peace and ending of war, as well as researching complex problems of war damages and reparations.

Basic research on war as a social phenomenon and process is one of the most important challenges of the 21st century. These are extremely complex researches that imply a high degree of knowledge regarding specific types of scientific knowledge. This caused a relatively small number of researchers to deal with issues of fundamental research on war, especially armed combat and other forms of modern warfare, as well as methodological issues of designing these researches and applying general and special scientific methods in them.

From the past achievements of the development of human civilization comes the knowledge that the world has not yet learned to overcome political, economic, military and other conflicts and wars of extermination through finding effective and adequate ways and methods for eliminating conflicts and mitigating contradictions between people, different social groups, ethnic and religious communities, nations, economic and military-political alliances. This indicates that there was almost no fundamental research in this area or that the results of this research have not been applied. Even more, many believe that fundamental research is not even needed in this area of social life, which is a wrong point of view that has no basis in science.

The entire history of human civilization has confirmed the lawfulness that in the period of accelerated development, new knowledge is necessary so that the global community and modern societies can be directed towards progress in all areas of social life. The means for achieving new knowledge are primarily contained in the results of fundamental research and their elaboration and concretization in other types of research (applied and developmental), and methodologists and researchers must be permanently critical of these results.

Otherwise, the uncontrolled development of technical-technological knowledge threatens to produce the disorganization of civilization, and the existing

knowledge in the field of social and humanistic sciences is not at such a level as to offer adequate results that would turn the disorganization of civilization into a greater degree of organization at the global, regional and national levels, which would lead to stabilization of global processes and peaceful balanced development of modern, sovereign and independent states and impartial international organizations. The current level of development of nuclear, missile and supersonic weapons in synergy with uncontrolled technical-technological development indicates that the problem will become even more complex and extensive in the near and far future, with a high probability of destroying the achievements of modern societies and civilization as a whole.

Therefore, it is necessary to direct and materially and psychologically support science and organized intelligence, so that through basic, applied, comparative and exploratory, interdisciplinary and multidisciplinary - diagnostic-prognostic research, they may offer directions for mastering social problems that technical-technological development legitimately brings. Only in the systematic application of science and fundamental exploratory research is it possible to direct existing processes at the global, regional and national levels in a positive direction.

In the modern period of development of human society science gives man unlimited power and thus a new level of moral and social responsibility. It gives man the option of choosing between prosperity, on the one hand, and the complete destruction of human civilization, culture, people and the territory where they live, on the other hand. In the choice between these two alternatives, it is particularly important that science directs its achievements towards prosperity and progress, which is achieved by encouraging the development of fundamental knowledge and the methods used to achieve this knowledge in order to achieve the long-term goals of the technical-technological, political, economic, social and cultural world. The basic role of science is to expand man's ability to understand the world around him, and the task of research is to expand scientific knowledge in all areas of life. In achieving new knowledge, it is necessary to respect and use science and correctly apply scientific methods, techniques, instruments and procedures in acquiring scientific knowledge.

This legality also applies to the study of war as a complex social phenomenon in which, if we want to gain new knowledge, we must permanently apply necessary research, preferably in real time, in the real conditions of their performance, to real subjects with their real goals, purposes and motives of action, methods and activities of public and secret actions and real consequences caused by such actions and behaviors at the global, regional and national levels. The scientific research is an objective form of systematic understanding of war and other forms of warfare based on the consistent application of scientific methods, techniques, instruments and procedures for collecting, describing, explaining, proving and refuting collected facts, solving war situations and finding ways of peace.

For scientific research, wars are very complex, traumatic and unfavorable social phenomena and processes, which mostly affect individuals and social

groups, including states, regions, and even the entire international community. Wars are dealt with by many scientific disciplines and each sees and experiences it from its own specific scientific point of view. Hence, we have the different teachings about war, its causes, essence and consequences. The fact that today we have as many definitions of war as there are authors dealing with this complex social phenomenon, shows just how complex a social phenomenon it is.

This is understandable because in the modern period of the development of human society, the term war is used to denote completely different phenomena, many of which have nothing to do with violence and war. That is why it is not surprising that in the modern understanding of war we include various social phenomena that are very difficult to define and investigate. There are many reasons for that. One of them is of an objective nature, in which it is indicated that war is a complex, multidisciplinary, multicultural and multi-layered social phenomenon that has several geopolitical, security, military, economic, international legal and internal legal, social, psychological, cultural, informative-propaganda, technical - technological, IT-cybernetic and other dimensions as well. The other reason is of a subjective nature, in which many countries, especially the great powers, cannot and do not want to agree on what is meant by war, and hence they interpret the term aggression ambiguously. They do this on purpose so that each would have as much freedom as possible to act in accordance with their interests (Krivokapić, 2017: 459). This is best confirmed by the wars fought in the former Yugoslavia, Iraq, Libya, Afghanistan, Syria, as well as the aggression of the NATO pact against the FRY and the current war in Ukraine.

The research of such social phenomena is very difficult, among other things, because the thematization of modern wars implies a high level of awareness of special and specific knowledge, which is dealt with by a smaller number of researchers and a built methodology of war research, i.e. a built special methodology of polemology as a cognitive-theoretical scientific discipline that studies war and its categories, axioms, principles, laws and theories.

So far, the methodological experience of researching various structural and functional factors of war is very modest. It has not been synthesized, collected, described and theoretically shaped and as such does not provide sufficient insight into the reached level of methodological construction of polemology as a science of war and other scientific fields and disciplines that are legitimately intertwined in war and their peculiar scientific methods. There were partial attempts to investigate those experiences, but there have been no fundamental epistemological interventions.

Starting from these findings and current social events, there is a strong theoretical and practical justification for the fundamental research of war as a social phenomenon in general and of any concrete form of war, especially military and humanitarian interventions under various pretexts, military aggression, armed incursions into the territories of other countries, special military operations, armed humanitarian interventions, psychological propaganda

operations to replace legal and legitimately elected political regimes in power, special interventions under various pretexts and various interventions to cause „pink revolutions”, etc.

Without fundamental research of these and other forms of wars as complex social phenomena, it is not possible to arrive at new scientific knowledge, new axioms, postulates, principles, laws and theories which, in the modern conditions of technical and technological achievements, would prove the pointlessness of every war and every conflict between people, social groups, ethnic and religious communities, nations and sovereign and independent states.

Such researches are rare and methodologically complex for conceptualization and practical implementation. That complexity comes from the character, goals and characteristics of modern forms of warfare, which condition the possibilities, limits and methods of research, as well as the possibility of applying adequate methods, techniques, instruments and procedures in research. In considering the influence of the character, goals and characteristics of modern forms of warfare on the development of methodology and methods that are applied in the research of this social phenomenon, which is an important epistemological question, we tried in this paper to show and prove the specifics of researching war and other modern forms of warfare, in regarding the following:

- (1) possibilities of conceptualization and reconceptualization of projects for the research of war in general and some of its derived forms, in particular;
- (2) possibilities and ways of revaluing primary information and data on certain structural factors of the subject of war research and other modern forms of warfare;
- (3) specifics of the verification procedure in the research of war and other modern forms of warfare;
- (4) the degree of accuracy of the research results thus obtained;
- (5) different levels of research within the same research procedure;
- (6) different types of research (fundamental, applied, action; diagnostic, prognostic; futurological, exploratory; verificatory, heuristic, etc.) and the needs of methodical delineation that from these types of research can provide quick and reliable results for making decisions about peace or war.

The decades-long experience of the author of this paper in researching modern wars indicates that in the near and far future it will be necessary to conduct much more fundamental research into modern wars, the final results of which could lead to new knowledge, new axioms, postulates, principles, laws and theories that will unambiguously prove the pointlessness of every conflict and war and bring the world into a state of permanent and sustainable, compromise peace. Modern developed societies have come into possession of sophisticated weapons and nuclear combat systems that threaten the mutual destruction of civilization. This knowledge confirms the above premise about the meaninglessness of any war and about the strong need for fundamental research into the causes that drive people, social groups, nations, states, military-political alliances and blocs into conflicts and wars that cause devastating consequences.

According to the stated tendencies and observed trends in the development of international relations, the subjects of fundamental research on modern wars in the future will include a diverse range of research questions that will range from the research of internal and international relations in which there have been conflicts and wars between ethnic and religious communities, sovereign states and military alliances and blocs, through the research of the causes, goals, courses and consequences of wars, to the research of international legal, political, economic, social, moral, social-psychological, ecological, informative-propaganda and other aspects of modern wars.

3 METHODOLOGICAL AND THEORETICAL APPROACH TO THE RESEARCH OF THE MOST IMPORTANT STRUCTURAL FACTORS OF WAR

Bearing in mind the set standard of the scope of the article, the next part of the paper will present a methodological-theoretical approach to the research of the most important structural factors of war, with indications of possible goals, hypotheses, methods, techniques and instruments that have been confirmed in the research of the three most important factors of war - international legal, informative and propaganda and the moral-sociological factors of war.

The first structural factor in the subject of war research, which is most often investigated within a separate macro project or as a sub-project of a broader macro project of fundamental research on war, is the international legal factor of war. Epistemological-methodological principles in the research of this factor of war point to the gradual research of war, starting from the modern understanding of war, reasons, immediate and indirect goals that lead to the beginning of war, the declaration of war or the beginning of war without declaration, through the research of cause-and-effect relations of influence of the war on states and their mutual relations, to the investigation of the territorial impact of the war and the impact of the war on tens and hundreds of millions of people in the countries participating in the war, above all, on the main subjects of the war - combatants, illegal combatants and non-combatants (Krivokapić, 2017: 568-654).

From a methodological point of view, in research projects of this type, the modern understanding of war is first put under the critique lens; furthermore, we then conceptually demarcate all the terms derived from this categorical term. The essence of conceptual demarcations is to arrive at a clear and unambiguous definition of war, which will correspond to the methodological rules of defining categorical terms and will be acceptable to the largest number of countries in the world.

In the fundamental research projects of international relations, especially wars and other forms of warfare, in addition to the modern understanding of war, it is necessary to carry out an in-depth analysis of the immediate

and indirect goals that lead to wars, and above all to investigate the following (Carter & Douglas, 1967: 31):

- the forces that want war in the world today?
- the benefits that people, ethnic and religious communities, nations, states and alliances want to achieve at the cost of war?
- necessary and sufficient conditions to avoid, above all, possible conflicts and wars of all forms and types?
- means at the local, regional and global level adequate for the successful mutual adjustment and rapprochement of conflicting social groups, ethnic and religious communities, peoples, states, alliances and blocs in order to avoid armed and other conflicts and wars.
- proclaimed and real goals that were achieved by wars and whether they and under what conditions, according to the current norms of international law, could be a justification for war and other forms of modern warfare?

Starting from the devastating consequences of wars between social groups, peoples, states, regions and military-political alliances and blocs, it is necessary to investigate the history of modern wars in an objective and systematic way in fundamental studies of wars. From the results of such research, it is necessary to draw lessons aimed at finding clear principles and legality in international relations that will be a barrier to any possible future war and conflict (Krivokapić, 2017: 451-654).

In the research of this structural factor of war, the basic research of general and special rules of warfare, especially the prohibition of the use of certain means, ways and methods of warfare, the legal position and protection of property that is mercilessly destroyed in war without anyone being held accountable, are of particular importance, as well as researching different types of possible agreements between warring parties (Krivokapić, 2017: 655-766). In addition, in the fundamental research projects of war, research on the special and specific rules of warfare on land, sea, air and space, as well as research on the rules of humanitarian law, are of great importance, focusing on the position of the combatant in war, the position of the victims of war and their the protection, position and protection of the medical services, humanitarian governmental and non-governmental organizations and other services that deal with the search for missing, dead and wounded combatants and non-combatants in the war (Krivokapić, 2017: 767-914).

Every social phenomenon, including war, has its beginning, duration and end. Hence, in the projects of fundamental research on war, in addition to its beginning and duration, the end of the war also deserves a deeper and more complete study, with an emphasis on the comparative analysis of the content of peace treaties, agreements, declarations and other political and legal institutes aimed at finding a sustainable peace. Of particular importance in the fundamental research of the end of the war is the determination of war damages, reparations and ways of compensating the parties to the war, to which little or no attention was paid in previous research on the war.

Closely related to the research of this structural factor of war is the in-depth research of the consistent observance of the rules of war and humanitarian law, especially the problems related to the observance of the most important sources of international law, first of all, generally accepted international legal customs. Very important are also international treaties, as research into the level of implementation and consistent application of established legal rules and the possibility of abuse of the law of armed conflicts and international law in general.

In addition, it is of particular importance to research the transcendence of some rules of war and humanitarian law, especially rules related to the (miss) use of new weapons, non-lethal weapons, new parties in war and other conflicts. A significant problem in the research of this structural factor of war is the need for more complete research into the legal regulation of war, which is carried out, first of all, in cyberspace, space and under the sea, as well as research related to the revision, respect and consistent application of international war and humanitarian law.

The second significant structural factor of the subject of war research, which can also be a separate macro project or sub-project within the wider fundamental macro project of war research, is the informative-propaganda aspect of war, which represents the most dominant factor in modern conflicts and wars. In any war, public opinion is one of the most important factors in the ability of both sides in war, both the attacking and defending side. Public opinion is formed under the decisive influence of the media, with written and electronic media playing the most significant role. This has been confirmed by all the wars fought after the Second World War until today, especially the wars in Vietnam, Afghanistan, Iraq, Libya, the former Socialist Federal Republic of Yugoslavia, the Federal Republic of Yugoslavia, Serbia, Libya, Syria and Ukraine.

The media systems of both sides in the war are objectively at a disadvantage and are forced to solve two major problems at the same time:

a) to ensure sufficient exposure of public opinion in the country with appropriate notifications, messages and values that were in the function of attack or defense;

b) to oppose dysfunctional information, messages and values directed against aggression (intervention and defense against aggression and intervention, i.e. in favor of the opposite party in the war.

In fundamental (basic) studies of war, it is epistemologically important to look at the relationship of written and electronic media towards the attacker and defender and to see what is the real role of written and electronic media in war.

Epistemological reasons dictate that in every war, an objective analysis of the content of written and electronic media on aggression (intervention) and defense against aggression (intervention) should be carried out in order to observe certain tendencies, trends and draw experiences in their reporting and operationalize the measures of the competent state authorities and bodies and international organizations in regulating the place and role of the media and provide a more just and objective direction of their work in the period before,

during and after the end of the war. Therefore, for science and scientific research, it is important, by applying scientific methods, to find out how and to what extent the media in warring parties act objectively, truthfully, preventively, timely, subsequently, prognostically and diagnostically, and how and to what extent they participate in compensating for the numerical and technological superiority of the media of the opposing side in the war.

The experience of the author of this paper indicates that the methodological approach in the projects of fundamental research of written and electronic media about the war should be based on the following axioms:

(1) in all types and forms of warfare, public opinion, the value system and morals of citizens are an important and basic factor in the general resolution to attack and defend. Every war is preceded by the attacker's effort to prevent the constitution of the defender's will to resist and defend himself by means of various forms of satanization, misinformation, threats of impending damage, discouragement and intimidation. During the war, the campaign is intensified and associated with concrete forms of destruction and infliction of damage. An integral part of such a campaign are efforts to prevent information and media and other communication with public opinion and within it;

(2) written and electronic media are a powerful and influential means of successful attack and resistance to the attacker and his devastating effect on the will and morale of the defender. The very daily appearance of written and electronic media in the usual circulation, listening and viewing is a strong barrier to the achievement of the goals of attackers and defenders. If the writings in the written and the statements in the electronic media are essentially in agreement and if the same or approximately the same agreement is achieved with the broadcast messages of other domestic or neutral media, the possibility of complicating, mitigating and even thwarting the opponent's information and propaganda campaign is very powerful (Danilović, Jevtić, Đurić, & Mitić-Damnjanović, 2002: 2-3).

The stated premises contained in the aforementioned axiom determine the basic content of the subject of fundamental research of written and electronic media in the war. These are, first of all: (1) regularity of exposure and advertising in written and electronic media; (2) circulation and volume of exposure or advertising; (3) thematic - subject provisions and the number of articles and advertisements about the war; (4) the way of presenting articles in written media and statements in electronic media about the war (Danilović, Jevtić, Đurić, & Mitić-Damnjanović, 2002: 3).

Methodological-methodical reasons require that the thematic-subject provisions in the projects of fundamental research of the media sphere in the war be classified through fundamental contents on the following.

I Causes and conditions of aggression (intervention) and causes and conditions for defense against aggression (intervention);

II Subjects of aggression (intervention) and defense against aggression and intervention;

III Motives, interests and goals of aggression (intervention) and defense against aggression and intervention;

IV Activities of aggression (intervention) and defense activities;

V Methods and means used in aggression and methods and means used in defense against aggression and intervention;

VI Effects caused by activities of aggression (intervention) and effects of defense against aggression and intervention (Danilović, 2015:31).

In such fundamental research projects, it is necessary to discover not only the number and location of articles on the listed thematic contents (territorially and by media), but also how the thematic contents were edited and processed in the media, which implies knowing the following:

- (a) directionality of media content;
- (b) emphasis on topics;
- (v) column in which media content is published;
- (g) the genres used;
- (d) argumentation of media content;
- (dj) intensity of media content engagement;
- (z) readability of inscriptions in written media and clarity of verbal statements in electronic media, and finally
- (h) the impression of the credibility of articles in written media and verbal statements in electronic media (Danilović, 2015: 31).

In this way, knowledge about the subject of fundamental research enables a relatively comprehensive knowledge of how the written and electronic media actually behaved during the war, and also enables a relatively reliable conclusion about the possible influence of the written and electronic media on the activities of the parties to the war.

Such a subject of fundamental research, determined in terms of content, space and time, imposes the setting of realistic and achievable scientific and social research goals. *The scientific goals* of research in such projects can be set as a scientific discovery of the content and form of written articles and statements in the electronic media about the war, as well as their dimensioning, that is, determination. *The social goal* of research in such fundamental research projects could refer to enabling the elaboration of the obtained scientific knowledge for the formulation of media public policy and for the further improvement of the theory of communication and public relations, as well as for undertaking practical measures in the function of finding possibilities for ending the war.

Given that it is a mass social phenomenon, fundamental investigations of the media sphere in war require the application of almost all basic analytical and synthetic methods of knowledge, as well as the application of the general scientific statistical method, which is a factual and essential factor in unifying the macro research project into one the whole. In addition to the general-scientific statistical method, the properties of the subject of fundamental research in the media sphere of war and the diagnostic-prognostic orientation of the research itself require the application of hypothetical-deductive methods, both in the process

of research design and in the preparation of research reports. This satisfies the requirements for establishing the necessary level of structural-functional connections and relations in the logical-content and methodological-instrumental sense between all parts of the fundamental research project and the report on the research results (Danilović, Jevtić, Đurić, & Mitić-Damnjanović, 2002: 4).

Apart from the general-scientific hypothetical-deductive and statistical method, in such projects of fundamental research into the media sphere of war, it is necessary to use the modeling method in two directions. The first direction requires the use of established and long-term practiced models of rubrics, genres, etc., within the framework of which it is necessary to introduce the provisions of statements in written and electronic media, that is, to use them as classification criteria or the basis for the development of certain scales. The second direction of using the modeling method is represented in its rules for forming typical, essential, etc. models on the basis of which the modal provisions of statements and the meaning of statements can be formed in writings of written media and statements of electronic media.

Such projects of basic research into the media sphere of war require a more massive application of the Research Method with both of its techniques - survey research and interviews.

The characteristics of the research of writings and statements published in written and electronic media as mass phenomena and their manifestations in the form of written media and writings in them and electronic media and statements in them determine the choice of data sources and methods of data collection. The multitude of magazines and articles in them, as well as the multitude of electronic media and statements reported in them, point to the use of certain newspapers and electronic media that will represent three important provisions of the phenomenon in the territory affected by the war:

(1) territorial determination, which leads researchers to choose written media that appear on the territory of the entire country. At the same time, it is taken into account that the inhabitants of the country at war do not only read the written media and do not listen to the electronic media published in the territory of the country in which they live, but also beyond;

(2) thematic and content specificity of written and electronic media and the writings and statements in them, as well as their distribution among readers, listeners and viewers, the territorial spread and coverage of the content and form of writings and statements, and thereby their informative activity;

(3) their general orientation and value orientation in the period of the immediate outbreak of war (Danilović, Jevtić, Đurić, & Mitić-Damnjanović, 2002: 5).

Based on the above listed criteria, it is possible to select a sample of daily and periodical newspapers and electronic media while respecting the following three criteria: 1) dynamics of exposure and area of distribution; 2) variety of number, content, form and orientation of writings and statements; 3) coverage of the active readership (more than 80% of the total number of readers of written media and more than 80% of the total number of listeners and viewers of

electronic media) which satisfies the criterion of probable influence. The mentioned sample of written and electronic media would enable researchers-analysts to make adequate predictions and reliable conclusions about the relationship of the most influential part of written and electronic media towards the war.

The subject and objectives of the fundamental research of the media sphere in the war and the defined sources of data condition the necessary application of the basic method for data collection, which is the method of *document content analysis* with both its techniques, quantitative and qualitative analysis of the content of statements published in written and electronic media. The application of the quantitative technique of analysis of statements in written and electronic media requires the development of a separate stationary instrument - the *Code of Terms and Codes* and an auxiliary instrument - the *Record Form* for entering individual statements. Written and electronic media are defined as public written documents in such fundamental projects (Danilović, Jevtić, Đurić, & Mitić-Damnjanović, 2002: 5).

In researching the relationship between written and electronic media, it is necessary to apply quantitative analysis, and the actual process of analysis should take place in two stages. First, it is necessary to identify the content and form of articles in the written media and statements in the electronic media about the war using qualitative content analysis techniques, in order to then perform a classification (more precisely, a classification according to appropriate features and defined „crucial properties”); only after performing that, should we start quantification and statistical processing. However, even in the course of the qualitative analysis of the included units, quantification is also performed in order to size those units, because in determining belonging to the genre, the dimensions of the units play, along with other provisions, a significant role.

Quantitative analysis of the content of articles and statements directly relies on qualitative analysis, as well as on strict definition of units of analysis and valid classification. The nature of the units of analysis, such as newspaper articles in the written media and statements in the electronic media, is a complex quantitative-qualitative research procedure and very difficult to process due to its multidimensionality, multiplicity, possible meaning in the text and context, the number and variety of the content of the contributions (statements) and insufficiently firmly defined mutual boundaries. Analysis of the simplest unit of analysis - news about a war event, fully confirms this finding (Danilović, Jevtić, Đurić, & Mitić-Damnjanović, 2002:6).

In presenting the content of the research results, it is possible to use the modified linear principle of descending type, which is regulated by the Data Processing Plan. Accordingly, the presentation of the results can be started immediately after the events by communicating the global results to the print and electronic media published in the territory(ies) affected by the war. The order of countries and regions can be determined by the place of the initial letter in the alphabet. In presenting the results by region, the aim is to show more important differences, while what is common is understood based on the already announced results for the country as a whole.

The stated principle of presentation of results is acceptable for two important reasons: *first*, attack (aggression, intervention) and defense against aggression (intervention) are played out as a relationship between two opposite parties, and the effects of aggression (intervention) and resistance concern the country affected by war in the long term as the whole, and only in its frames and the parts that make it up; *secondly*, scientific knowledge is general and tends to include and express the properties, regularities and laws of the entire phenomenon, not only its constituents.

The experiences of the authors of this paper have confirmed that the most productive order of presentation of the results of the analysis of articles in the written media and the analysis of statements in the electronic media, within the specified framework, is according to the following content units (Danilović, Jevtić, Đurić, & Mitić-Damnjanović, 2002:12-15):

(1) *Thematic determination of articles and statements* in the written and electronic media, within which an overview of the topics (content) to which the papers and articles in them, as well as the statements in the electronic media were devoted, is presented. The review of the volume, listing of topics and subtopics, their qualitative and quantitative relationship with each other and their frequency represent a basic description of the content of the relationship of written and electronic media towards the war;

(2) *The orientation of the articles* expresses the value orientation and basic attitude of the thematically determined article or statement towards aggression and defense against aggression, and the basis of the messages addressed to the population of the country(s) affected by the war and to the international community - international organizations and foreign entities;

(3) *Emphasis on topics* in written and electronic media shows what content these media „emphasized” in various journalistic ways. It is understandable that the same importance and meaning were not given to all topics in all moments of the war even in the same newspapers, let alone in different written and electronic media.

(4) *The placement according to the rubrics* in which the article and statement were published essentially represents elaboration, concretization and argumentation for the previous part of the presentation. In written and electronic media, it is usual to have sections: political; foreign-political and internal-political; economic; cultural; sports; ads, etc., but there is no special „war column”. According to the past experience of the author of this paper, it is advisable to introduce a war column in all media. In addition, war is a phenomenon with the widest spectrum of effects on the totality of people's lives. Hence, the formation of a special war column in the written and electronic media is necessary and justified;

(5) *Genre specificity* represents an additional elaboration of the previous two parts of the text. The analysis of genre affiliation of writings on certain topics not only informs about the importance and meaning, but also about the independence of the written and electronic media in the choice of topics and attitudes about the war, as well as the general attitude towards the needs of adequate

information of all the citizens of the warring parties in the war, together with the international public. Various forms of official announcements of competent authorities published in written and electronic media in their original form have a different role and importance than „reports from the scene”, from comments, from news or transmission of broadcasts of other media;

(6) *Argumentativeness of articles* is an important factor in realizing their role and function and one of the bases of credibility and acceptability of statements in writing and statements in electronic media. It is related to the characteristics of written and electronic media, rubric and genre. The characteristics and amount of important arguments are determined by the genre (the news can for example be only a notification about a fact - an event, and also an argument in itself). The number of arguments is further conditioned on the rubric, properties and orientations of the newspaper. Arguments are at the same time the basis of direction and their explanation, as well as the basis of a certain degree of involvement of written and electronic media in the war;

(7) *Engagement and intensity of engagement* in written and electronic media, articles and statements in them is understood as the broadcasting of a certain message that affirms or discredits an attitude or act, assigns positive or negative values to an event, intention, subject, state, etc., presenting in support or against a certain argument, using certain words, tone, stylistic figures, etc. Engagement can be of different degrees and must be understood as a synthesis of synchronized various consistent value-oriented manifestations.

Articles published in written and statements announced in the electronic media can hardly be unengaged - even when they publish death certificates - simply because they are addressed to the public. In the report on the results of reporting by written and electronic media in the war, it is necessary to announce the objective results of the analysis of the engagement of written and electronic media - articles and statements in support of aggression (intervention), that is, in support of the defense, cessation and condemnation of aggression (intervention);

(8) *Language and style* are an essential condition for establishing a relationship between real events and articles and statements in written and electronic media about those events, and because of this, they are an essential basis for establishing and maintaining relationships between readers - the public - and written and electronic media. The language and style in written and electronic media cannot simply be equated with the language and style of articles and statements, because they are derived as a complex resultant of the whole as such. The general usual provisions on comprehensibility, clarity, precision and other requirements for language cannot be denied, but the fact cannot be ignored that even in war it is necessary to respect the standards of journalistic functional language, the language of the topic, situation, orientation and engagement. The laws of instrumentality in language communicability cannot and should not be avoided in war reporting, especially not in reports on the results of fundamental research on the reporting of written and electronic media in war.

The task of this part of the report on the results of fundamental research is to show the results of the research on the style and language of writing in written and spoken statements and electronic media, noting that the researchers who perform the analysis also have the role of evaluators based on the formed scale and instructions that are made for the realization of fundamental (basic) research;

(9) *Language and style* are an important factor in the readability of texts in written media and the comprehensibility of statements in electronic media.

The readability of articles (and indirectly of written media) and the comprehensibility of statements in electronic media is a significant subject of the Report on the results of research on written and electronic media in the war, the task of which is to show whether there were linguistic difficulties and obstacles, i.e. incentives and attractions for readers of written media and viewer or listener of electronic media. This is an important moment in the war because of the time dimension, the variety of characteristics of possible readers, listeners and viewers and the various conditions of using written and electronic media;

(10) *The acceptability of articles and statements* should express an assessment of the communicability of written and electronic media and the articles and statements in them. It depends on the content, orientation and engagement, argumentation, language and style. In this part of the report on the results of the research, it is necessary to communicate in an objective way the estimated acceptance of the articles and statements as a whole by readers, viewers and listeners;

(11) *The impression of the credibility* of articles and statements (and thereby the credibility of written and electronic media) is the goal of every written and electronic media and the articles and statements in them. The trust of readers, listeners and viewers in the truthfulness of articles and statements is the basis for accepting newspaper articles and statements in electronic media as one of the guidelines in behavior, and thus represents an integral part of acceptability.

* * *

The above-presented epistemological-methodological systematization in the research of the media sphere of war agrees with the principle of gradualness and the movement of knowledge from the most basic to the more complex. That's why we should start by presenting *what and where* war is written and talked about in a certain time and space, in order to then explain *how the war is written about* in the written media and talked about in the electronic media. Based on that, we can assess how it could relate to *readers, listeners and viewers* (Danilović, Jevtić, Đurić, & Mitić-Damnjanović, 2002: 15).

The third important structural factor of the possible subject of war research, which can also be a separate macro project or sub-project within a broader fundamental macro research project, is certainly the attitudes and beliefs of citizens and members of the armed forces of the warring parties about the social, moral and psychological factors of war.

The main goal of researching this structural factor of war can be to discover and scientifically explain the social, moral and psychological factors of success or failure of aggression (intervention) and defense against aggression (intervention)) in the war, on the basis of which the decision-makers could reasonably predict further moves that would entail either finding peace solutions or the continuation of the war, ie general resistance and defense in the war.

Set in this way, the general scientific goal of researching the social, moral and psychological factors of war would also include several special scientific goals, primarily the following:

(1) determining the forms and manifestations of attack and defense, which are based on the social, moral and psychological components of attackers and defenders;

(2) identifying political, social-demographic, moral and psychological factors of the unity of citizens, the army and the state leadership as significant indicators of the continuation or cessation of war;

(3) discovering the factors of actions and behaviors that encouraged or hindered the establishment and maintenance of success or failure in aggression (intervention) and defense against aggression (intervention).

In the conceptualization of this structural factor of the subject of fundamental research on war, it is epistemologically most important to establish a good and reliable hypothetical framework that involves formulating hypotheses and identifying a set of predictor and criterion variables, with precise operationalization of research indicators.

According to previous experiences from war research and confirmed findings in conducted empirical research, depending on the nature of the war, it is necessary to include the following variables in the set of *predictor variables*:

(1) attitudes towards the country(s) of the aggressors, that is, those who carried out military aggression or intervention and their helpers and countries opposing the aggression (intervention);

(2) the perception of the political, economic and military power of the countries participating in the war and their supporters;

(3) the role of political factors in war-torn countries in the preparation and execution of aggression and military intervention and defense against aggression and military intervention as well as the further development of the country;

(4) the role of state institutions in aggression (military intervention) and resistance to aggression and military intervention;

(5) importance of basic values for performing aggression and intervention and defense against aggression and intervention;

(6) emotional reactions of the population of the parties to the conflict during the duration of the aggression and intervention;

(7) sources and symptoms of fear during aggression and intervention and defense against aggression and military intervention;

(8) socio-demographic characteristics of the respondents.

The attitudes towards the aggressor country(s) and friendly countries can be examined most objectively by using indicators, such as: attitudes towards influential countries, developed countries and neighboring countries.

The perception of political, economic and military power can greatly influence respondents' attitudes about their role in the course of aggression and military intervention. In this connection, it is possible and desirable to examine the assessment of those types of power for countries that are directly and indirectly involved in war.

Attitudes towards political parties and political figures in the warring parties can be examined through a larger number of items, given that various political parties have different attitudes towards aggression and intervention and resistance to the aggressor and intervention.

The contribution of certain institutions of the state to providing support to aggression and intervention and successful resistance to aggression and intervention and to the reconstruction of a war-torn country can be examined through the following indicators: the attitude towards the parliament, the President of the State, the government, the academy of sciences and the church towards the warring parties, and in complex countries, the attitude towards the Parliament and government of the republic, entity, province, region; attitude towards the Army and attitude towards the police.

Starting from the point of view that different things are important for different people, in fundamental research it is possible to examine the importance of basic values for aggression (non-intervention) and defense against aggression and intervention by evaluating the following indicators: interest, democracy, human rights, freedom, independence, patriotism, pride, honor, people, justice, tradition, state, survival of the nation, courage, comfortable life, personal peace, self-respect, wisdom, security of the country, faith in God, peace in the world, equality of people, family security, obedience, responsibility, conciliation, philanthropy, prudence, masculinity, enduring hardship, order and discipline, success in life, exciting life, happiness, contentment, cleverness and solidarity.

Research experiences have shown that emotional reactions during aggression and intervention and defense against aggression and intervention can be examined through the following indicators: anger, contempt, ridicule, defiance, spite, disgust, fear, anxiety, uncertainty, uncertainty, sadness, disappointment, hatred, affection, concern and indifference.

The following indicators can be used to test fearfulness: modern airplanes, helicopters, drones, long-range missiles, bombs, explosions of bombs and rockets, mines, snipers, capture, wounding, death, burial in rubble, wounding or death of one's relatives, capture of one's relatives, encirclement, intervention from a distance, wanton destruction of property, hunger, shortage of oil, gas, electricity and water, partial and complete mobilization, mental disorders in oneself and one's relatives, etc.

The set of predictor variables also includes symptoms of fear that can be examined by evaluating the following indicators: tremors, pallor, difficulty speaking

or loss of speech, dry mouth, rapid heartbeat, difficulty or rapid breathing, loss of appetite, stomach rumblings, diarrhea, frequent urination, insomnia, constant hunger, constant thirst and uncontrolled movements.

The socio-demographic characteristics of respondents in the fundamental research of this structural factor should include: educational, residential and economic status, nationality, religion, and religiosity.

Depending on the character of the war, it is necessary to include the following in the set of *criteria variables* for examining the social, moral and psychological factors of the subject of war: attitudes towards aggression (intervention) and attitudes towards defense against aggression and intervention, attitudes towards the way aggression (intervention) is carried out and ways defense against aggression and intervention and the way of bearing hardships in war, attitudes towards the direct participants in the execution of aggression (intervention) and resistance to the aggressor, attitudes towards the outcome of the war, as well as attitudes towards the future of the countries that participated in the war.

Attitudes towards aggression and intervention and resistance to aggression and intervention can be assessed by evaluating the following groups of indicators: willingness to engage in aggression (intervention) and willingness to resist the aggressor; willingness to actively engage in aggression or to actively engage in resistance to an aggressor; willingness to re-engage in the performance of aggression (intervention) or to re-engage in resisting the aggressor in case of military necessity; value attitudes towards aggression (intervention) and value attitudes towards resistance to aggression; attitudes towards those who support capitulation or surrender and attitudes towards those who are ready to betray a country at war.

Attitudes towards the method of aggression (intervention) and attitudes towards resistance to aggression (intervention) can be examined through a number of indicators such as: participation in coalition forces, armed or police forces of the country(s) in the war; participation in protests, rallies and demonstrations for aggression (intervention) or against aggression (intervention); physical participation (human shield) in the defense of important infrastructure facilities; work in bodies or organizations that help aggression (intervention) or that help to reduce the consequences of aggression (intervention), involvement in professional or other associations that fight for the continuation of aggression (intervention) or against aggression (intervention) and other indicators.

The variable on the way of coping with difficulties in aggression (intervention) and the way of coping with difficulties in defense against aggression (intervention) can be examined through the following indicators: constant combat readiness, wanton killing of civilians and destruction of civil infrastructure facilities, willingness to sacrifice, going to shelters; participation in protests, demonstrations, rallies, guarding infrastructure facilities; work obligation; shortage of goods; shortage of energy, water and electricity; mobilization; immediate participation in war units; bombs and rockets; the sound of airplanes and rockets; possibility of injury and death and other indicators.

The perception of the importance and role of coalition and armed forces of warring countries in possible further conflicts can be examined through the following indicators: attitude towards the role of coalition and armed forces in a possible new conflict between warring countries or in some other part of the territory; confidence in coalition and armed forces in a possible new conflict; attitude towards strengthening the offensive and defensive capabilities of countries at war; attitude towards the allocation (increase) of funds for modern weapons and other indicators.

The perception of the outcome of the war as a criterion variable can be treated through the following indicators: attitude about the conquered territory; position on preserved territorial integrity; position on the violated sovereignty of the attacked country; position on preserved sovereignty; position on the defeat of the coalition and armed forces; attitude towards the losses of the victim of aggression; position on the aggressor's losses; attitude towards own losses; attitude towards material destruction; attitude towards signed agreements on ceasefires, cessation of hostilities and cessation of war; attitude towards the role of international organizations in solving the problems that caused the war and other indicators.

For aggression (intervention) and resistance to the aggressor, attitudes towards the importance, state and future of states at war are of crucial importance. Those attitudes can be evaluated through the following indicators: assessment of the country's importance in the region and the international community; assessment of the situation in war-torn countries; a position on what should be the future status of countries that have been at war.

Examination of the attitudes and beliefs of the population during the war is a very complex research procedure, for the realization of which the valid construction of the sample of respondents and the creation of reliable measuring instruments are of significance.

Since a field investigation is necessary for a fundamental research project of this type, it is not possible to implement it on the entire population of citizens of warring countries, but on a properly selected and composed representative sample that will faithfully reflect all important characteristics of the population as a whole. Creating a valid sample is a very demanding research task. The sample should be designed by the greatest experts for sample production. There are several possible types of samples for such research, but the research practice of the author of this paper suggests the use of a *three-stage sample* that would include all adult citizens of warring countries aged 18 to 100.

Apart from a good and representative sample, for the successful implementation of fundamental research on the moral and social psychological factors of war, it is of great importance to construct valid and reliable measuring instruments for recording and processing data.

The most suitable measuring instrument for this type of fundamental research is the Survey Questionnaire on aggression (intervention) and defense against aggression and intervention. This measuring instrument should

contain specially constructed scales that collect information on a large number of dependent and independent variables. Such an instrument, first of all, must have the required metric characteristics in order to obtain reliable, objective and true results.

Previous research practice has confirmed that in order to collect basic data about respondents, it is necessary to construct one general questionnaire that would contain the required number of questions of a general nature that seek to obtain personal data and information about whether the respondents or any of their immediate or extended family members are participated in the war.

In addition to personal data, the Questionnaire as an instrument for data collection should be constructed from several measuring scales. The research experience of the author of this paper, who has carried out several empirical fundamental researches in war on the same topic, indicates that some of the following scales could be applied in the research of moral and social psychological factors of war, as follows:

1) A scale about personal behavior and actions during the war, which would consist of several statements about different types of behavior or actions of people during the war with alternative answers of the „YES” or „NO” type offered, as well as the possibility to write down the activities by which they were engaged in by the respondents during the war, which is not included in the intended claims.

2) A scale on the way of enduring hardships during the war, which would contain several types of hardships endured by the inhabitants of the warring states during the war, with the possibility of adding some other hardships, with answers offered according to the principle of a four-point Likert-type scale („very difficult”, „difficult”, „easy” and „he didn't feel it” or „he didn't do (something)”).

3) A scale on the intensity of emotions aroused by the aggression (intervention) against the country(s) at war, which would contain several different types of emotions with answers offered on a five-point Likert type scale on the intensity of certain types of emotions („very weak”, „weak”, „moderate”, „strong” and „very strong”).

4) A five-stage Likert-type scale on the presence of sources of fear among the population during the war, on which respondents would state to what extent they were afraid of certain sources of fear („not at all”, „little”, „moderate”, „a lot” and very much”).

5) A five-stage Likert-type scale on the presence of fear symptoms among the population during the war, which could consist of several different fear symptoms with the answers offered, e.g. („yes often”, „yes, sometimes”, „yes, rarely”, „I didn't have it” and „I didn't feel fear”).

6) Scale of attitudes about the country(s) of the aggressor(s) and their helpers, as well as about the country(s) opposing the aggression (intervention). This scale could be made up of several countries in relation to which respondents should express their attitude („positive”, „negative” or none) before, during and after the war (aggressions and interventions).

7) A scale of attitudes towards the armed forces, the army and the police, which would contain the answers offered on a five-point Likert-type scale about the attitude towards the armed forces, the army and the police of countries at war („very positive”, „positive”, „I didn't think about it”, „negative “ and „very negative”) before, during and after the aggression (intervention).

8) Scale of attitudes about aggression (intervention) and scale of attitudes about resistance to aggression and intervention. These scales could contain several statements about the way of prolonging aggression (intervention) and the way of resisting aggression and intervention, to which respondents would answer with „true”, „not sure” and „false”.

9) A scale of attitudes on the preference of value orientations, which would contain several dozen standard value orientations with answers offered on a five-stage Likert-type scale („very important”, „ important”, „doesn't matter”, „unimportant” and „completely unimportant”).

10) A scale for assessing the economic power of states at war and their supporters, on which several states are offered, the economic power of which respondents choose on a five-point Likert-type scale („very large”, „large”, „average”, „weak” or „very weak”).

11) A scale for assessing the political power of states at war and their supporters, which contains several types of states whose political power respondents choose on a five-point Likert-type scale („very large”, „large”, „average”, „weak” or „very weak “).

12) A scale for assessing the military power of states at war and their helpers, on which several states are offered whose military power the respondents choose on a five-point Likert-type scale („very large”, „large”, „average”, „weak” or „very weak”).

13) Scale of assessment of the possibility of avoiding aggression depending on the activities of the leading political forces in the country. The scale contains as many types of parties that passed the electoral census in the previous legal elections and make up the composition of the national parliament (with the possibility of adding another relevant party), whereby respondents decide on a three-point scale („yes”, „maybe” and „no”) whether the aggression could have been avoided and the crisis resolved by political means if the aforementioned parties had followed a different policy.

14) Scale of assessment of the efforts of political parties in power and opposition to carry out aggression (intervention) or provide general resistance to aggression (intervention) in countries at war. The scale could contain all types of parties that have entered the national parliament (with the possibility of adding some others) for which respondents on a five-point Likert-type scale („very little”, „little”, „moderate”, „a lot” and „very many”) determine the level of commitment of those parties to carry out aggression (intervention) or provide general resistance to aggression (intervention).

15) Scale of assessment of the efforts of state institutions in countries at war to carry out aggression (intervention), i.e. provide general resistance to

aggression (intervention). The scale should contain the most important state institutions for which respondents would decide on a five-point Likert-type scale what their support was for aggression (intervention) or to resist aggression (intervention), eg. („very little”, „little”, „don't know”, „much” and „very much”).

16) Scale for assessing the contribution of state institutions to successful aggression (intervention) or successful development and reconstruction of a country devastated by war. This scale could contain the most important state institutions for which respondents would decide on a five-point Likert-type scale („completely false”, „mostly false”, „not sure”, „mostly true” and „completely true”) how much they trust them when it is a question of successful aggression (intervention) or successful reconstruction and development of a country destroyed in the war after the aggression (intervention) was carried out.

17) Scale of assessment of the degree of unity of the people, the armed forces and the leadership of the state during the war during aggression (intervention), i.e. defense against aggression and intervention. On this scale, respondents can be given the opportunity to choose one of four possible answers („very little unity”, „little unity”, „great unity” and „very great unity”).

18) Five-stage Likert-type assessment scale on the success of the state leadership and the armed forces in carrying out aggression (intervention), i.e. the success of opposing aggression (intervention), e.g. („very successful”, „mostly successful”, „can't rate”, „mostly unsuccessful” and „completely unsuccessful”).

19) Scale of assessment of the success of preserving the territorial integrity, independence and autonomy of the state. On this type of scale, respondents could declare themselves on a three-point scale („unsuccessful”, „not sure”, and „successful”).

20) Rating scale about who won the last war. In this section, respondents should be offered answers such as: „she won ___”, “there was no winner in this war” and „she lost ___”.

21) Scale of assessment of losses of aggressors and defenders in the past war (military and civilian losses). Respondents should be allowed to give answers on a three-stage scale: „negligible”, „small” and “large”.

22) An evaluation scale of the agreement on the cessation of aggression (intervention), on which the respondents should be given the opportunity to state whether the agreement should have been accepted (three-level scale), then about the character of that agreement (four-level scale), whether it is more favorable than some similar agreements (three-stage scale) and whether it is better for a country at war if the United Nations, instead of other international organizations, takes responsibility for solving the problems of countries at war (four-stage scale).

23) Scale of assessment of the importance of a part of the territory of the belligerent states over which the war is being waged. In this scale, the respondents should be able to express themselves on a five-point Likert-type scale about the importance of that part of the territory for the country („very small”, „small”, „I don't know”, „big” and „very big”).

24) A scale for assessing the situation in that part of the territory that caused the war, on which the respondents, on a five-point Likert-type scale, could state what the current situation is in that part of the state's territory („very bad”, „bad”, „I don't know”, „it's good” and „it's very good”).

25) A scale for assessing the future status of a part of the state territory due to which the war broke out, on which the respondents should be able to choose one of several answers with different variants of the status of that part of the territory.

26) The assessment scale of the state and capabilities of the armed forces of countries at war, which could contain several statements about the state and capabilities of the armed forces of countries at war, as well as multiple answers offered for each statement „I do not agree”, „I am not sure” and „I agree”.

A properly made research sample and constructed reliable measuring instruments for data collection are prerequisites for conducting field empirical research in warring countries. The field survey, with prior preparation of the interviewers, should be conducted by well-trained interviewers, with the provision of double control of the implementation of the survey on a selected sample of citizens and members of the armed forces. Ideally, such research should be carried out by authorized scientific institutes and marketing agencies, through their network of interviewers and controllers in warring countries, or by a neutral specialized agency for social-psychological research and public opinion research of the UN and other credible international organizations, with mandatory approval for conducting research and power of attorney to be issued by the highest level of management in coalition forces and the armed forces of countries at war.

It is necessary to enter data from surveys into software statistical packages for data processing by licensed statistical institutes or other representative and specialized institutions for this type of data entry into software programs. Logical control of entered data and statistical processing of data should be carried out by expert psychologists and other scientists who have excellent knowledge of the general scientific statistical method and all its techniques and procedures.

Statistical processing of collected data on moral and social psychological factors of war is performed using techniques for analyzing numerical and non-numerical data, including assessment of their reliability, recoding of variables, parameter estimation and standardization of variables, analysis of latent structures, analysis of grouping and analysis of correspondence between different variables or sets of variables.

Depending on the nature of the examined variables, first of all, in such situations, it is necessary to determine the frequency of certain modalities (frequencies and percentages), then carry out exploratory, informational and component analysis of nominal variables, entropy and canonical analysis of the association of nominal variables, quasi-canonical and controlled quasi-canonical analysis relation of nominal variables and analysis of homogeneity and component analysis of optimally scaled variables.

Furthermore, from the collected data on the moral and social-psychological factors of war, it is possible to perform analysis of contingency tables (canonical and informational analysis), analysis of variance (multivariate and canonical analysis of variance) and grouping analysis (hierarchical grouping by Ward's method and grouping by the method of moving clouds).

The relationship between individual variables (indicators) can be examined by factor analysis (factor analysis in image and real space, factor analysis with partialization of nominal variables, factor analysis of structural changes and interbattery factor analysis) and component analysis. In this way, it is possible to determine the latent dimensions that should be treated as predictor and criterion variables in the further procedure. The connection between predictor and criterion variables can be examined by correlation, canonical and quasi-canonical correlation and regression analysis, as well as by performing nonlinear and multivariate regression analysis.

The difference between individual categories of respondents in relation to individual latent dimensions can be examined by discriminant analysis, primarily canonical discriminant analysis in Mahalanobis space and canonical discriminant analysis of quantitative changes. Apart from that, from the collected data, it is possible to perform analysis of spilled taxa and spilled types (with partialization of control variables and with partialization of nominal variable), as well as metric and non-metric multidimensional scaling.

The bearers of the preparation of the scientific Report on the conducted research and the Report on the results of research into moral-psychological and other factors of war should be special research organizational units of the highest management, leadership and command bodies in cooperation with licensed institutes for sociological and psychological studies and research in warring countries or international organizations. Due to the nature of the data, the sensitivity and complexity of the research procedure, they can hire other experts from specialized institutions, recognized and already established scientific workers in the field of social-psychological research.

Since basic research on international law, information-propaganda, moral, socio-psychological and other factors of war is very complex and multidisciplinary, the obtained results are of fundamental importance for several scientific fields, above all, for polemology, political science, sociology, psychology, social psychology, political theory, law, communication, management sciences and other scientific fields of social and humanistic sciences.

Without fundamental research into the various structural factors of the subject of modern wars as a complex social reality, it is not possible to arrive at new scientific knowledge, new data, facts, categories and, based on their knowledge, to new axioms, postulates, principles, laws and theories which, in modern conditions of technical-technological achievements, proved the pointlessness of every war and every conflict between people, social groups, ethnic and religious communities, peoples, states and military-political alliances, blocs and coalitions.

4 CONCLUSION

So far, course of development of human civilization has shown that the world has not learned how to overcome political, economic, military and other conflicts and wars of extermination. Furthermore, the world has not found adequate ways and methods to overcome conflicts and wars, as well as ways to mitigate contradictions between people, different social groups, ethnic and religious communities, peoples, economic and military-political alliances. This indicates that there has not been enough objective and systematic fundamental research in this area, and that the results of this research were not applied and observed. Even today, many believe that fundamental research is not necessary in this area, which is a wrong point of view that has no basis in science.

Without going deeper into the epistemological discussion of whether or not there has been sufficient fundamental research into previous conflicts and wars, the methodological experiences of research into various structural and functional factors of war are very modest. They have not been synthesized, collected, described and theoretically formed and as such do not provide sufficient insight into the achieved level of methodological development of the science of war and other scientific areas and disciplines that are legitimately intertwined in war, as well as into the development of their particular scientific methods for researching this complex social phenomenon. There have certainly been partial attempts to research those experiences, but not fundamental research with strict epistemological and methodological requirements.

Starting from this knowledge and current events on a global and regional level, there is evident theoretical and practical justification for the fundamental research of war as a social phenomenon in general. There is also the need for examination of each of its concrete forms, especially military and humanitarian interventions under various pretexts, military aggressions, armed incursions into the territories of others, is expressed. countries, special military operations, armed humanitarian interventions, psychological propaganda operations to replace legal and legitimately elected political regimes in power, special interventions to cause “pink revolutions”, etc.

Without fundamental research of these and other forms of wars as complex social phenomena, it is not possible to arrive at new scientific knowledge, new axioms, postulates, principles, laws and theories that would prove, on scientific grounds, the senselessness of every war and conflicts between people, social groups, ethnic and religious communities, nations, states and military-political alliances and blocs.

With the aim of encouraging basic (fundamental) research into complex and multi-disciplinary social realities such as wars and conflicts, this paper identifies, from the point of view of social sciences, the main subjects of fundamental research into modern wars. These include a different range of research questions starting from the research into internal and international relations in which there have been conflicts and wars between ethnic and religious communities, sovereign states and military alliances and blocs, through the research of the

causes, goals, courses and consequences of wars, to the research of international law, political, economic, social, moral, social-psychological, ecological, informative -propaganda and other factors or aspects of modern wars and conflicts.

Accordingly, this paper offers a proven methodological theoretical framework for the research of the most important structural factors of war, with an indication of goals, hypotheses, methods, techniques and instruments that can be applied in the research of selected structural factors in every current and future global, regional and local war and conflict.

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Неђо С. ДАНИЛОВИЋ

ФУНДАМЕНТАЛНА ИСТРАЖИВАЊА РАТА И ЊИХОВ ЗНАЧАЈ
ЗА ПРОГРЕСС ГЛОБАЛНЕ ЗАЈЕДНИЦЕ И ПРОСПЕРИТЕТНИ
РАЗВОЈ САВРЕМЕНИХ ДРЖАВА

Резиме

Предмет рада су фундаментална истраживања рата и њихов значај за прогресс глобалне заједнице и просперитетни развој националних држава. Циљ рада јесте да се, на основу дескрипције и класификације међународноправних, политичких, економских, социопсихолошких, информативно-пропагандних и других последица бројних ратова савременог доба, открију и научно објасне нужности, правилности и закономерности не уласка у ратне авантуре у будућности, нарочито у уралгичним и историјом оптерећеним регионима. У раду су коришћене готово све основне аналитичке и синтетичке методе сазнања с тежиштем на анализи, синтези, класификацији, апстракцији и индуктивно-дедуктивној методи. Од општенаучних метода примењене су хипотетичко-дедуктивна, статистичка и компаративна метода, а од метода за прикупљање података коришћена је метода испитивања, пре свега њене технике анкетног испитивања, као и оперативна метода анализе садржаја докумената са квалитативним и квантитативним техником анализе.

Резултати свих до сада проведених истраживања су потврдили полазну хипотезу да се перманентном применом основних (базних) истраживањима различитих аспеката савремених ратова унапређују фундаментална знања у области полемологије - науке о рату, као и у других научних области које се на директан и индиректни начин преплићу у рату. Фундаментална истраживања рата и других савремених облика ратовања тежишно су усмерена на креирање, побијање и подржавање теорија које објашњавају фундаменталне природне, техникотехнолошке, биомедицинске и друштвене ралитетете који су саставни део рата и других изведених облика ратовања. Ова истраживања генеришу нове научне идеје, које ако се усмере у правцу превазилажења рата као средства решавања сукоба и спорова између војнополитичких блокова, суверених држава, народа, етничких и верских заједница и гругих друштвених група, представљају основу развоја, прогреса и напретка савремених држава, региона и глобалне заједнице у целину.

Главни резултат овога рада јесте сазнање да без фундаменталних истраживања рата као сложене друштвених појава није могуће доћи до нових научних сазнања, нових аксиома, постулата, принципа, закона и теорија којима ће се у савременим условима техничко-технолошких достигнућа оповргавати ратови и доказивати бесмисао сваког сукобљавања између људи, друштвених група, етничких и верских заједница, народа, суверених држава и војнополитићких савеза.

Кључне речи: наука, научна сазнања, научна истраживања, фундаментална истраживања рата, методологија и методе истраживања рата.

*Dževad R. TERMIZ**

Faculty of Political Sciences, University of Sarajevo

SPECIFICITY OF MODELING THE SUBJECT OF JOURNALISM SCIENCE RESEARCH AS A RESULT OF ITS FUNDAMENTAL RESEARCH

Abstract: The fundamental postulate from which we start this research is that every science or scientific discipline has its own fundamental analysis. An important development of the modern methodology of social sciences was achieved by the construction and constitution of three models: the model of the research project (simple and complex), the model of the research subject, and the model of inference. In this text, starting from the basic postulate and fundamental research in the contemporary methodology of social sciences, as well as relying on the most reliable scientific and other knowledge, he constructs the idea of the whole phenomenon of journalism as a specific social phenomenon - the subject of research. It includes all essential provisions of the issue, its structural factors, properties, relationships and connections, functions and roles in the phenomenon - process, directions and effects of actions, and responses to them. In this way, a model of the subject of research in the science of journalism was formed. The presented thought model (idea) of the phenomenon - the subject of study is an essential factor of the thought model of the research process - creating a research project in the science of journalism, which actually demonstrates the fundamental research in one scientific discipline (the science of journalism) of social sciences.

Key words: Science-scientific discipline, social sciences, journalism, the science of journalism, research, scientific research, fundamental scientific research, model, research object model, research project

INTRODUCTION

Journalism is just one of many contemporary social phenomena whose importance in modern society is growing and which is expanding and becoming more complex. Its structure, function, and roles are conditioned and are a consequence of the development of society, especially the increasing emphasis

* Academic, full professor, dzevad.termiz@fpn.unsa.ba

on the ever-increasing need for more and more diverse information and communication in society (world and global societies) in which two opposite processes are simultaneously taking place: the process of ever-increasing integration encouraged by social (technological, economic, civilizational) and other interdependence, and, on the other hand, the ever-increasing number of roles that man has to fulfill in conditions that, at least in detail, are changing more and more rapidly. In the relationships of the described processes, the essential role of journalism is mediating and connecting. It, as a phenomenon, is neither static nor independent but developmental and adaptable; it is a stimulating and stimulated agent; it is an integral part of the whole of information and communication in society but unique in its essential features.

1. THE CONCEPT OF JOURNALISM

Observing and understanding journalism can be approached from the starting point of various sciences and various theoretical-methodological approaches (such as sociology, psychology, political science, linguistics, communication science, ergonomics, law, etc.). Respecting all the mentioned and other sciences and various possible approaches (especially cybernetic, psychological, sociological, and linguistic) in our consideration, we cannot give an absolute advantage to anyone, and we opt for an integral approach when ascertaining the essential provisions of journalism.

First, journalism is a relatively independent phenomenon and, as such, can be empirically and theoretically stated and understood (Termiz, Dž., 2001, pp. 44-46). Between it and all other phenomena (natural and social), including the most related ones (information and communication), clear boundaries can be established based on an essential characteristic called "crucial" (Termiz, Dž., Milosavljević, S., 1999, p. 497.) and express the so-called specific difference.

Second, journalism is a dynamic phenomenon with all the essential provisions of procedural variability, development, and adaptability. In the history of journalism so far and in the foreseeable future, the manifestations of the phenomenon's growth and its strengthening in various directions can be observed in high agreement with social development and in a relationship of mutual dependence.

Thirdly, journalism was created at a certain level of social development, especially civilizational (literacy), political (state and political rights and freedoms), technological (writing material and reproduction techniques), economic, etc. Although certain beginnings of journalism are linked to ancient Egypt (the time of Thutmose III), to ACTA DIURNA in ancient Rome, and to FOGLI D'AVISI in medieval Venice, the actual origin of journalism can only be located in the 18th century (century) or even closer to the 19th century (1845) when Reuter forms the first news agency. (Savković, D., 1981, pp. 5 and 7.)

Fourth, journalism (Termiz, Dž., et al., 2010, p. 8) is really based on and initially developed in the press, daily, and periodical. It is wrong to connect journalism to all forms of the media (e.g., books of various types and most do not belong to "journalism" but belong to the press. Therefore, journalism is preceded by information (Termiz, Dž., Arežina, V., 2015, p. 47 -52.) and communication (Termiz, Dž., Arežina, V., 2015, pp. 52-59, see also pp. 9-27); they can also be interpersonal. However, journalism is not primarily focused on the individual (interpersonal) but on a mass basis (Đurić, Ž., Subotić, D., 2009, p. 9), "media" informing the public and news (Termiz, Dž., Arežina, V., 2015, p. 61-70) - events of interest to society and for which it shows interest.

Fifth, journalism appears as an activity, organized, authorized, and responsible, as a profession, as economic, political, educational, etc., an activity in which the "newspaper" is a material, spiritual-intellectual and psychological "thing" and a commodity on the market. (Životić, R., 1993, p. 7.; Mitrović, Ž., 1980, p. 9, 11 and 18.)

Sixth, journalism, no matter how much it has changed, has its relatively standard structure: subject-owner of the media, subject-journalist who collects the original "raw information," processes it and prepares it for broadcast to the public, subjects who technically broadcast information to the public (that is, through which "the subject-recipient receives notifications) and, of course, the "public," more precisely the multitude of "masses" of buyers, readers, viewers, listeners - "audience," "auditorium." It is understandable that these subjects fulfill their roles (the roles of collectors, processors, eminent, and users) in certain diverse social (but also natural) conditions, that they create various media, i.e., use multiple media, that they perform a variety of work, jobs, and tasks. Diverse relationships and achieve the most varied effects. (Savković, D., 1981, pp. 6 and 7; Milosavljević, S., 1974, p. 24; Termiz, Dž. et al., 2010, pp. 57-63.)

Seventh, in journalism, the most significant and widespread tool and journalistic creation is the statement (Termiz, Dž., Milosavljević, S., 2008, pp. 45-50), which can be verbal (oral and written), acoustic (sound-musical, noise, bang, etc.), visual (image - from photography, drawing, film footage to artistic vision and electronic creation) or combined. Given that there are various media, and the only media is organized journalism, its essential component and their devices are the technical and technological means of their research; we can divide the media into written and printed - various newspapers and the like; to auditory (radio and similar) and to visual and audio-visual means, that is, combined means (television, computers and computer systems "internet," film, etc.). According to the properties of the media, we can distinguish various types of journalism: written (verbal), visual (photos, reports, etc.), auditory, audio-visual, or combined. It can be noted here that we did not mention universal or total journalism. The reason for this is that every journalism known so far is primarily one of the most numerous, and the rest is auxiliary, illustrative, etc. Hereby, we do not dispute the possibility of simultaneously connecting and combining various types of journalism as well as various journalistic accomplishments.

Eighth, there are two essential products of journalism:

a) messages (Termiz, Dž., Milosavljević, S., 2008, pp. 47-48) within the framework of notifications broadcast in various forms and with different contents; b) a specific type of relationship between, on the one hand, journalism in general, media, broadcast messages and, on the other hand, the mass of the population, "audience," "auditorium," "public." To understand and research this relationship, or rather a conglomerate of relationships, it is necessary to clearly distinguish "broadcast messages" from "broadcast notifications," "public" from "media audience," and "audience-auditorium" of certain media, as well as the relationships between them. Public, customers, audience, etc., are very complex and dynamic structures, and the range of their relationships is extensive - ranging from "unreserved trust" and "unbreakable attachment" to complete ignoring or even negation of the media as a whole - whether only messages of a particular type or only messages of specific authors.

Ninth, at the current level of social development, journalism is always a vital and influential factor in political, economic, ideological, and overall cultural development. Journalism is when it appears in the relationship and position of an instrument of government and when it appears as an instrument of the "government of the people" - democracy. In the last decade of the 20th century, from the idea of the "seventh force," declarations about "service for citizens," "independent journalism," and its particular "free" status became more and more frequent. All social knowledge and previous experiences about society and journalism suggest to us: do not accept any idealizations! Namely, in a complex community, there are various interests, as well as multiple advocates, promoters, and opponents of them. Media owners, journalists, audience(s), etc., are also in various positions and have and represent different interests. In this sense, the independence of the media does not mean the freedom of journalists and especially does not mean their objectivity. Like it or not, "citizen service" and "independent media" provide their existence on the value market and, in this sense, depending on the buyer and the owner. Thus, "servicing citizens" and "independence" become very complex and challenging to fulfill requirements and expectations.

Tenth, journalism is actually realized at and according to very different levels: a) internationally; b) at the level of a global state union; c) at the level of a region of a country (federal unit, entity, canton-region, etc.); d) at the level of local self-government; e) at the level of an enterprise-institution, that is, a part of an enterprise-institution; f) at the level of a specific organization (political parties, interest organizations, denominations, etc.). (Termiz, Dž., et al., 2010, p. 57-58.) The goals, purpose, and orientation of the media are thereby given, and "independence" can move within it. However, journalism's pursuit of independence and truthfulness remains enduring despite its limitations.

The ten presented items give us the basis to start formulating a synthetic definition of the term journalism. It could read: "Journalism is a real, dynamic, developing social phenomenon of great complexity, created at a relatively high

level of civilizational development and with a relatively stable structure consisting of subjects, their interests, and actions. Spiritual-psychic character with the effects of various properties and characteristics. Their specificity is in the emphasized orientation towards the presentation of notifications and messages, primarily of wider and general interest and interest, directed towards the mass user - the public - through the media. Accordingly, journalism is an intermediary and an instrument of direction and flow of mass information in the process of public mass media communication". This synthetic, working definition opens up opportunities for us to define journalism as a specific subject of research.

2. JOURNALISM AS A SPECIFIC SUBJECT OF RESEARCH

In social reality, there is not a single social phenomenon that is completely independent and isolated from all other social phenomena because they are all manifestations of existence, actions, behavior, relationships, consciousness, and other properties, characteristics, characteristics, and activities of people. This is an important reason why completely independent subjects of research cannot appear in the social sciences, but each of them, no matter how strictly demarcated from the others, is still connected with them, and with some, it even permeates or is just a "special case" of a wider one of research subjects.

Journalism is a social reality whose uniqueness is realistically expressed and recognizable. Therefore, journalism can be a particular subject of science, that is, a scientific discipline and a specific topic of scientific research. It is a socially significant enough phenomenon, comprehensive and complex enough, and specific enough that a particular science or scientific discipline can be affirmed about it, but that does not mean that journalism cannot be defined as a segment of the subject of another science or scientific discipline. Thus, journalism ("journalism") can be the subject of a particular science of journalism that will study it comprehensively and deeply, discovering certain axioms and theoretical ones, regularities, legalities, laws, scientific explanations, etc. The nature of such a specific subject also requires the development of the methods of that science. These are, in principle, methods of social sciences, but not exclusively social, adapted to the requirements of the subject of science. This will be more fully seen when considering the characteristics of subjects-participants in the processes marked by the term journalism.

Journalism can also be defined as a segment - part of the subject of science - the scientific discipline of information or the subject of an even broader science - the scientific field of communication in society - communication studies. (Šešić, B., 1974, p. 24.; Termiz, Dž., Milosavljević, S., 1999, p. 89-90.) We tend to view journalism as a particular subject of a unique scientific discipline that belongs to communication science, and, therefore, it is a specialized - specific segment of the issue of communication "communicating." But communication - communication between people - takes place as a necessary process and

factor of connections and relationships in all situations in which a person does not appear as an isolated, self-sufficient individual. Thus, communication - communication (Termiz, Dž., Areživa, V., 2015, p. 9-26) is in whole or in part the subject of sociology, psychology, economics, political science, social work, linguistics, etc., all the way to philosophy.

Highlighting journalism as a subject of a particular scientific discipline while respecting the above, we undertake to determine more closely which contents and forms can appear within the matter of science as subjects of research. In the most general terms, the role of the issue of research can occur as a whole of journalism as a phenomenon. It can be investigated as a process, as a system, and as a structure, but all the mentioned provisions can be analyzed as a whole at the same time. In the practice of research, it is common to divide the research subject into specificities of structure, system, and process. Thinking about the issue and formulating it most often starts from the form (part of the structure) and moves towards functions and actions in order to reach relationships and connections. This actually allows us to claim that it is possible and expedient to apply the structural-functional type general subject of research in political and social sciences (Termiz, Dž, 2022, pp. 347-350), suitable for journalism. It is the central, basic model of the research subject, while the process model and the system model of the research subject are additional and specifying. In journalism research, that typical subject would look like this:

(I) CONDITIONS. This segment of the subject must be viewed in two interconnected yet separate layers. The first layer consists of various conditions for the creation and actions of the issues of journalism and the performance of journalism as a process, starting from the most general social conditions through economic, technological, political, educational, and organizational to orientation-value, confessional and traditional.

The second layer consists of conditions as the subject of journalism processing. These are conditions that, as their content, are treated by the media in various forms of broadcasting - broadcast material. As a rule, these are the same conditions as in the previous layer, but the media gave them a certain particular importance.

(II) SUBJECTS. Subjects are an essential determining factor in journalism. The criteria for defining and distinguishing them can be various, but for us, two complex criteria are essential: (1) role, function, and place in the process of performing journalism, and (2) personal properties, characteristics, and characteristics of the subjects. We view both as individual and group, i.e., collective and unofficial, official and official.

Thus, according to the first criterion, we state a) subjects - sources of notification, including subjects - actors that are the subject of the processing; b) collectors of "raw" notifications, their processors and issuers; c) recipients and users of notifications and messages. Group d) owners of journalism institutions should be added, or owners should be introduced as a subgroup within the group marked with b). It is understandable that the same institutions (e.g., media)

and the same individuals can combine multiple roles. According to the second criterion for individuals, standard socio-demographic characteristics are taken into account with appropriate additions and adjustments.

(III) MOTIVES, INTERESTS, GOALS. Each subject who participated in the process of public mass-media - information or communication has his own reason for the activity, action, and participation in that process and in a certain way. Motives, interests, and goals are diverse and layered according to their definitions. The first difference arises from the place, position, and role of the subject in the process, the second from his position in society, and the third from his properties, characteristics, and characteristics. Hence, as in all other research, it is necessary to first determine the motives, interests, and goals that arise from the social position and the relationship between personal aspirations and the real possibilities of the subjects, and only then investigate the relationship in the process, information and the relationship with the media. Regardless of the democratic organization of society, not only cannot everyone be a journalist, especially not of the same rank and profile in every media but not every resident, or citizen, can equally be a user of every media. The research of the auditorium and the realized program (Termiz, Dž., et al., 2010, pp. 99-170.) - published journalistic creations of various forms and their mutual relationship are, therefore, the constant and most common subject of individual research.

In this part of the presentation, we will only focus on the goals of the media. All media have different plans, even if their most general purpose, to put it succinctly, is to inform the public and influence it. Reporting here is understood in the broadest sense of the word and meaning - from true, accurate, timely, complete, clear and comprehensible, reasoned and objective, unbiased, to misinformation and unconscionable total propaganda. In the described framework range, the goals are determined first by the profile of the media; second, the situation in which they act; third, by the ruling system of values; fourth, by the orientation of the owner, etc.

For an easier understanding of this problem, we will divide all media into profitable and unprofitable. For beneficial media, which exist on the basis of funds acquired on the market, the first priority must be the acquisition of these funds. Of course, in this, they cannot act arbitrarily but in accordance with norms and customs - interpreting them quite elastically. Other goals, in accordance with the general functions of the media (informative, political, economic, educational, cultural, entertainment-recreational, etc.), are formulated in accordance with the primary goal. It is characteristic of profitable media that they are primarily a "business" and that their primary goal is profit, and the realization of media functions is a way of achieving profit. All other goals - initially journalistic - are instrumental sub-goals.

Unprofitable media can be stated (and we include all those whose work is financed by the authorities at any level of the state organization) as functional and sponsored media. Their goals derive from a) the attitude of the state towards

public mass communication; b) functional reasons of the media financier (e.g., a company); c) needs and reasons of sponsors (e.g., political movements and parties, associations, etc.).

General goals are operationalized according to the properties of the media and the actual media situation. The general purposes of all media are the complete coverage of the potential "audience" (readers, listeners, viewers), the most intense and stable relations with them, and the most decisive influence on them. All these goals are achieved in the conditions of fierce competition of many media in regard to a very complex phenomenon called "audience."

Interests, motives, and goals of the media, due to their nature, complexity, and way of manifestation, as well as due to the existence of manifested and latent dreams, historical, strategic, tactical, and operational; current and deferred, etc. they cannot research completely independently, nor is it possible to use only one method. In this way, it is possible to explore only the declared goals. This gives us the right to apply the structural-functional type general subject of research in political sciences.

(IV) ACTIVITIES. It is indisputable that subjects realize their aspirations, successfully or unsuccessfully, through their own behavior, activities, actions, doings, etc. The subject of our research can therefore be: (1) activities, actions, actions, actions, acts of subjects to a) provide economic-financial and organizational-technical conditions for the realization of the process of journalism, i.e., journalistic work; b) collection of original ("raw") notifications, in which three possible basic activities take place: ba) source, information provides basic notifications of specific content in some form; bb) the subject directly perceives the event; attends it or participates in it and records it; bc) the entity records data on the subject of notification; c) study, selection, processing of data, selection of content, message and form of journalistic (media) notification (presentation) and formation of form and manner of presentation; d) the very concrete act of presentation as the final product of journalistic work; e) broadcasting. (2) activities and actions of the audience, audience, media users, etc. Previous research has revealed the following activities and actions, behaviors and activities of the audience, audience, and users: a) establishing or refusing contact with a certain type of media and with particular (specific) media for various reasons; b) building relations with specific media in the form of monitoring the broadcast material (notifications, messages, etc.) and taking an attitude towards them. Broadcast monitoring has its own temporal, quantitative, qualitative, and substantive determination, and attitudes have their direction, intensity and durability; c) reaction to the broadcast material, which can be: (ca) predominantly passive, indifferent, without special reactions; (CB) expressing attitudes, positive or negative in the virtual environment; (cc) addressing the media; (cd) addressing the public. It is understandable that we have to qualify all addresses as suggestions - suggestions, requests, and criticisms of a certain intensity; d) accepting broadcast messages and notifications and harmonizing one's own attitudes and behavior with them (relationship of trust). The type and type of broadcast

material should be distinguished here because, for example, service information and various practical advice can be accepted and practiced, but trust in relation to political broadcasts and alignment of attitudes and behavior has a different meaning. It means to trust that the media will inform truthfully and sufficiently wholly and that the broadcasted notifications are sufficient and valid enough for taking one's own position and choosing one's own behavior.

It is clear that each of these activities can be developed in detail, which is done when determining the specific subject of research.

From behavior, activity, etc., various relations of cooperation and conflict, agreement and disagreement, trust and distrust, etc. arise. In many nuances, which leads to the specification of the audience-media-journalism relationship from trust and loyalty to breaking up and hostility.

(V) METHODS AND MEANS. In general, all media use methods and means to attract the audience - the audience to expand and consolidate it. Some techniques and standards cannot be considered journalistic, even if they are in the function of journalism. Thus, various prize games, crosswords, and the like do not belong to strictly journalistic methods and means, nor do comic books and the like. Exactly journalistic ways and standards can be considered:

(1) for sheets: a) existence and dimensions of rubrics; b) genres of writing; c) the acceptability of the writing, that is; thematic choice, timeliness, persuasiveness-argumentativeness, language and style, clarity of writing; d) schedule of rubrics and articles; e) titles, supertitles, subtitles, intertitles, interfiles, vignettes; f) technical editing - font, letters, format, color, etc.; g) economic-technical aspect - price and distribution - availability of sheets; h) focus on a particular social side;

(2) for television: A) technical assumptions and factors: a) possession of a television and b) its technical qualities as a receiver; c) antennas; d) general conditions of admission to the program; e) technical conditions of broadcasting and program availability; f) other technical characteristics of program broadcasting and reception; B) characteristics of the broadcast program: a) a number of programs and their types; b) existing sections and shows; c) speech; d) image; e) music; f) noises; g) content and its characteristics; h) broadcasting time and discipline, etc. For a TV program, it is essential to avoid overlapping programs, overloading the program with advertising and propaganda content, consistency of text, images, and sound accompaniment, speech, subtitles and language, the appearance of presenters, journalists, and other participants, desirable proportions in program forms and contents, time and general program discipline, measure in repeating and avoiding favoring the same persons without a real reason. The general requirements of journalism for truthfulness, timeliness, clarity, comprehensibility, acceptability, and persuasiveness are methods and means of lasting value.

Sensationalism is one of the many criticized means, but at the same time unavoidable until now. A certain amount of drama increases the attention and sensitivity of the audience. Like any other method or tool in journalism in which EXPRESSION is a crucial tool, sensationalism is also a subject of research.

(VI) EFFECTS. In previous presentations, we have already mentioned several layers of the effects of journalism - the media. It is justified to adopt several criteria for the classification of effects, and the most important are: a) relation to the purpose of broadcasting; b) the environment in which the effect is achieved.

According to the first criterion, we can distinguish: a) achieving the intended results in accordance with the provisions of the goal; b) consequences that are not determined by the goal but are consistent with the goal; c) neutral consequences; and d) "counter-effects" - consequences contrary to the provisions of the goal.

According to the second criterion, we have to distinguish two sub-criteria: (a) the sub-criterion of the social area; (b) the social environment sub-criterion. According to the first sub-criterion, we can distinguish: a) the material-financial sphere, b) the political sphere, c) the journalistic sphere, and d) other spheres. For example, revenues and profits of the media may increase in spite of a decline in broadcast quality or in spite of audience decline, just as there may be a significant increase in broadcast quality and audience growth or a decrease in profits.

According to the second sub-criterion, we can observe the effects as a) in the global social community; b) in the international community; c) in the media community; d) in professional journalistic circles; e) in the potential and authentic audience.

The most common elemental manifestations of the effects are: (1) increased number of customers; (2) increased income; (3) increased number of audience members; (4) increased satisfaction and agreement with the broadcast material; (5) improved the quality of journalistic creations; (6) improvement of technical and organizational working conditions; (7) increased competitiveness – or, in the case of adverse effects, the opposite to some extent starting from stagnation.

The specifics of the model of the typical subject of journalism research are the result of fundamental methodological research - general and specialist, in the field of sciences and scientific disciplines of social sciences, where the model has a unique role and importance. The presented model of a typical research subject is only indicative. (Termiz, Dž., Milosavljević, S., 2018, pp. 169-176.) And not a single segment or element of it can be researched independently of other components and parts, even if it can be emphasized. A specific exception is made by strictly quantitative empirical research (e.g., measurement of listenership, viewership, reading, and purchasing), but such research is very rare. This model is suitable for theoretical and empirical research (Termiz, Dž, 2022, pp. 262-272), as well as used in setting up a model experiment (Termiz, Dž, 2022, 167-168).

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Џевад Р. ТЕРМИЗ

СПЕЦИФИЧНОСТ МОДЕЛИРАЊА ПРЕДМЕТА
НАУЧНОГ ИСТРАЖИВАЊА НОВИНАРСТВА КАО РЕЗУЛТАТ
ФУНДАМЕНТАЛНИХ ИСТРАЖИВАЊА

Резиме

Основни постулат од кога полазимо у овом истраживању је да свака наука односно научна дисциплина има своја фундаментална истраживања. Битан развој савремене методологије друштвених наука је остварен изградњом и конституисањем три модела: модела пројекта истраживања (једноставних и сложених), модела предмета истраживања и модела закључивања. У овом тексту, полазећи од основног постулата и фундаменталних истраживања у савременој методологији друштвених наука, као и с ослоном на најпоузданија научна и друга сазнања конструисана је замисао цјелине предмета истраживања новинарства као специфичне друштвене појаве. Она обухвата све битне одредбе предмета истраживања, његове структурне чиниоце, својства, односе и везе, функције и улоге у појави – процесу, смјерове и ефекте дјеловања и одговоре на њих. На тај начин је формиран модел предмета истраживања у науци о новинарству. Презентирани модел (замисао) појаве – предмета истраживања је битан чинилац мисаоног модела процеса истраживања – израде пројекта истраживања у науци о новинарству којим се фактички остварује демонстрација фундаменталних истраживања у једној научној дисциплини друштвених наука, као што је наука о новинарству).

Кључне ријечи: Наука дисциплина, друштвене науке, новинарство, наука о новинарству, истраживање, научно истраживање, фундаментална научна истраживања, моделовање-модел, модел предмета истраживања, пројект истраживања.

*Aleksandar A. HALMI**

Department of informatology and communicology University of Zadar

SOCIOCYBERNETIC AND CHAOS THEORY: A NEW POSSIBILITIES FOR FUNDAMENTAL RESEARCH

Apstract: This paper gives us grounds for examining the emergence of general systems theory - or her twin sister, cybernetics - and the attempts to apply concepts and ideas to the study of chaos and nonlinear dynamics in fundamental research. Some basic terms in sociocybernetic and chaos theory are reviewed and some of their broad possible implications for Galilean science are briefly discussed. The main conclusion is that sociocybernetic provides a new possibilities for controlling chaotic process in fundamental research. Some consequences are explored, notably that reconceptualization of the logic of social chaos regulated by the paradigms of nonlinear dynamics and sociocybernetics which strongly implicate in realization of fundamental science and research.

Key words: Sociocybernetic, chaos theory, nonlinear dynamics, complexity theory, model building, new taxonomy, fundamental research.

1. INTRODUCTION

Even though „Sociocybernetic“ is no longer neologism, it is still useful to note that „socio“ indicates a concern for the structure and development of human relationships and that most of the author presented in this collection were trained and teach in the social sciences and fundamental research but significantly, however, not all have found their departmental homes in the fundamental research. Indeed, the disciplinary heterogeneity of this group authors reflects the ways in which the organizational structure of the disciplines of knowledge formation and their expression in academic departments is at present heavily contested, both in terms of the actual practice of scholars and the theoretical and methodological justification for the autonomy claimed for the disciplines (Lee 2002).

Looking to our century, just rising above the horizon of the new millenium, we become awar that the proces of globalization will confront us with a growing number of serious social problems. It is not only because we can observe,

* Full professor, aleksandar.halmi@gmail.com

thanks to the modern mass media, much more of our world than we ever dreamed of, but also because our different societies and cultures become more and more entangled, and hopes and problems more and more interrelated. It is the new nature of postmodern fundamental research. However, besides the physical and biological forces we have so successfully analysed in the modern natural sciences, do we also understand, describe and explain, the social forces that influence our human world in an overwhelming way? Do we understand, in terms of preventing, wars or the needless deaths of millions of people from hunger and avoidable diseases? One would look for hope and knowledge from the social sciences and expect that the project in the past century of system theorist, such as Bertalanffy (1932-1942), of comprehending social forces in a systematic way is already underway and well developed and will eventually provide us with knowledge and tools to control social forces and prevent social disasters. It is true that the social sciences and its fundamental research offer us powerful means for observing and describing a multitude of social problems. However, with that knowledge, do we really understand those problems, the many factor through which they are constituted, the way they are related to other problems, and logic of their causes and effects (Dijkum 2002). We deal first with some theoretical and methodological issues facing the diciplines today and than we try to give a new way of recognition the qualitative dimension in the analysis of quantitative nonlinear data in fundamental research.

2. THE NEED FOR A NEW LOGIC OF THE SOCIAL SCIENCES AND METHODOLOGY

Looking at the original goals of the social sciences and evaluating their practice, one can wonder about the gap between those goals and that practice in fundamental research. It is also amazing that the efforts of system scientists to understand and to describe the world in a systematic way have not found resonance in the trials and errors of early social scientists in defining the logic of their enterprise. One of the reason is perhaps to be located in the way the social sciences were themselves influenced by social forces. Moreover, the concepts of causes and effect could not be explored in a systematic and adequate way (Maruyama 1963; Dijkum, 2002). The idea that there was a mutual interaction between causes and effects, which can be formulated in the logical follow-up system theory, that is, cybernetics, and the associated idea of feedback cycles, was not accepted as valid for the logic of the social sciences and fundamental researchs. When such elementary logic is not accepted one no longer needs to wonder about the shortcomings of the social sciences in understanding and controlling the dynamics of social problems. This conclusion gives us grounds for examining the emergence of general systems theory and cybernetics and the attempts to apply concepts and ideas to the study of chaos and nonlinear dymanics in the field of fundamental researchs.

3. THE CHAOS THEORY PARADIGM

How does the emergence of sociocybernetics, chaos theory and nonlinear dynamics which underpin its mathematics - represent a new paradigm in the systematic rather than metaphisic or simply journalistic meaning of the term? Three conditions must be met. First, a new taxonomy must be identified. Second, the resolution of previously unfathomable puzzles must be present. Third, new difficulties (often conceptual) must emerge in the field of foundamental research.

3.1. The New Taxonomy

A new taxonomy does two main things: it gives new meanings for old terms and it introduces totally new terms into the formal theoretical language itself. The advent of sociocybernetics and chaos theory into the scientific world brought with it the need to introduce new terms and new meanings (Smith 2004).

Very briefly, some key terms and distinctions chaos theory are:

Chaos - Chaos exist when the long-term prediction of system is imposible. Chaos occurs when the uncertainty of a system's initial state grows exponentially fast.

Nonlinear dynamics - Chaos is a trem used to describe the apparently complex behavior. The key element in understanding is the notion of nonlinearity. The study of nonlinear behavior is called nonlinear dynamics.

Nonlinear system - A nonlinear system is a system whose time evolution equations are nonlinear, that is, the dynamical variables describing the properties of the system appear in the equations in a nonlinear form.

Chaotic motion - By the broadest definition, every motion more complicated than fixed motion or periodic motion is considered chaotic.

Complexity theory - is a new science of complex systems. It studies „life at the edge of chaos“ and explores the properties of complex systems at the state.

Bifurcation theory - attempts to provide a systematic classification of the sudden changes in the qualitative behavior of dynamical systems.

Dissipative systems - are materially and thermodynamically constituted entities. This means their internal structuration and development are regulated by transfers of energy from their environment. The most important feature is their negentropic potentiality.

3.2. Some old puzzles resolved

Such is the pace of scientific advance that the puzzles or contradictions derived from “old” paradigm, the identification of a crisis and the emergence a new paradigm have all taken place in the years since 1965. The puzzles were identified as such by Lorenz and Feigenbaum who independently (and with different functions) realized that some iterative functions (now generally classified as Verhulst Functions) exhibit chaotic behavior. There were extremely sensitive

to initial conditions. This observation violated an almost universally accepted axiom: changing the initial conditions will lead to changes in the outcome which are similar proportions. This assumption plays an essential role in the refining or tweaking of models. If the predicted and observed values differ only slightly the response is either to assume a small measurement error of the initial conditions exist or, if this must be diccounted, small modifications to the model's parameters are in order.

3.3. New difficulties and puzzle-sources

Systems which exhibit the „Butterfly effect“ do not exhibit proportional sensitivity to changes in the initial conditions. As such, since our intellectual technology lacked the ability to deal eith them, they have been shunned and avoided. One possible (as yet unverified) reason of this is Verhulst population model. If this model is accurate then one of its features is a tendency to exhibit either linear-like or chaos-like behavior depending on the values of certain parameters. Many chaotic functions appear very „well behaved“ over a range of conditions. Outside this range, however, thir chaotic (or pathological) nature asserts itself. The most obvious new problems are: what functions have chaotic tendencies and when will these tendencies appear? The class of function is-with respect to life on earth-potentially huge since all ecological, biological, sociological and psychological processes involve feedback (Smith 2004).

4. THE COMPLEXITY THEORY PARDIGM

There is some debate about the technical meanings of the terms *chaos* and *comlexity*, and about their respective fields of influence in foundational research (Goldstein, 1995). Many argue that chaos theory is a general theory of nonlinear dynamics and complexity theory is a subset of chaos. Some would argue just the opposite, and yet others see little to distinguish the two. Another school of thought maintains that chaos and complexity are two sides of the same issue. Lorenz (1993) argues that the term complexity is often used interchangeably with chaos, but that is sometimes used in a specialized sense to refer to irregularity in space while chaos refers to irregularity in time. Alternatively, complexity may refer to the length of a set of instructions required to depict a system. I argue, however, that complexity, while exhibiting characteristics of chaos, is nonetheless distinct from it. Both chaos and complexity theorist propose that a system's dynamics involve more than „if X, then Y“ relationships in which outcome is the simple function of inputs. They argue instead that system behavior more often results from complex, nonlinear interactions among constituent parts that, because of this nonlinearity, behavior is difficult or impossible to predict. Nonlinearity - a central concept in chaos and complexity theories - means that response is disjointed with cause.

That is, a change in a causal agent does not necessarily elicit a proportional change in some variable it affects, rather it may elicit no response, dramatic response, or response only at certain levels of cause. Chaos theory itself tends to focus on systems in which nonlinearity is intense and mechanical - weather systems, for example, or fluid turbulence or soil percolation. Such systems respond sensitively to, and magnify, minute differences in initial conditions, thus they are unpredictable. Chaotic systems are mathematically deterministic but their descriptive equations cannot be solved in data analysis of foundational research. Despite the potential applications, however, something is amiss when chaos theory is used to describe social systems in foundational research. Chaos theory is a bit too mechanical, although there certainly is an element of the mechanical in social behavior. It seems more appropriate for describing physical systems such as weather and fluid turbulence than for describing human behavior. There is an element of life missing in chaos theory which is applicable in the field of foundational research. Where it has been applied to foundational research, it has tended to deal either with the „physics“ of those systems or with generalized dynamics such as social systemic stability and change (Marion 1999). A complex social system is more stable and predictable than are chaotic systems. Complexity theory is useful for describing biological phenomena such as evolution, ecological niches, and even social processes (transactional systems, interaction, media discourse, etc.). There are another difference between complexity theory and the traditional systems approach. Traditional systems theory (Bertalanffy 1968) suggest that social systems are quite orderly, rational, and stable. Authors elaborated on theoretical constructs such as boundaries, homeostasis, and equilibrium that in various ways served to indicate the stability of social systems. Complexity theorists, on the other hand, see systems as constantly changing because nonlinear processes tend to build on themselves and thus cause change from within. Complex systems tend to become more complex (Kauffman 1995). Also, whereas traditional systems theory has often emphasized equifinality - the idea that systems that start at different states will end up in the same state - complexity theorists emphasize path dependence. *Path dependence* is a result of the sensitivity that nonlinear systems show to initial condition.

It implies that systems that start in a nearly identical state can develop in completely opposite directions as the systems amplifies initially minor differences. To put this in methodological terms, complexity theorists privilege multifinality over equifinality. Moreover, once a social system has developed along a given path, it cannot simply go back again; the changes in the interrelationship among the various individual components of the system are far too complicated and interwoven simply to reverse (Arthur, Cowan & Gunby 1996). However, complexity theory, based as it is on the mathematics of nonlinear dynamics, seeks a more detailed explanation of the manner in which sudden change in complex systems occurs (Thelen & Smith, 1994). Disorder, instability, and change are far from the entire story of complex systems, of course. Such systems also exhibit

a degree of order that at least as salient as their potential for chaos. Complexity theorists at the Santa Fe Institute in New Mexico have described this situation as „the edge of chaos“ (Kauffman 1993). Complexity theory is the third wave of ideas introduced into a wider setting from mathematics in recent years - its predecessors were catastrophe theory and chaos theory. A number of attempts have been made to relate these new ideas to management, strategy and organisations. Here we review several such contributions and consider their implications. Critically, the argument will be that complexity theory does have promise and offers exciting new ways of thinking in fundamental research. The language of complexity is illustrated in Table 1.

Table 1. Central concepts compared

Cartesian-Newtonian paradigm	The Complexity theory paradigm
Certainty	Chaos and complexity
Structure preserving systems	Dissipative systems and complex systems
Independent existence	Codependent existence and autopoiesis
Equilibrium	Far from equilibrium; at the edge of chaos
Reduction	Emergence
Command and control	Self-organisation
Linear thinking	Systems thinking
Competition	Mutualism and coevolution

5. COMPLEX DISSIPATIVE SYSTEMS

Perhaps the central concept that allows us to explore the implication of complexity theory is the *complex or dissipative system (CDS)*. One of the reasons why the theory of *complex or dissipative (autopoietic) systems* attracted so much attention when it first appeared is that it was immediately recognized as a new type of synthetic theory in fundamental research. It has been regarded as being simultaneously biological, psychological, philosophical, cybernetic, and epistemological, but it supposedly is not „merely interdisciplinary“. It offers more than what is usually understood by an „interdisciplinary“ perspective in that it has not been created by a group of disciplinarians holding hands in a ring for mutual comfort but rather offers a perspective that is „metasystemic“ (Beer 1980; Misheva 2002).

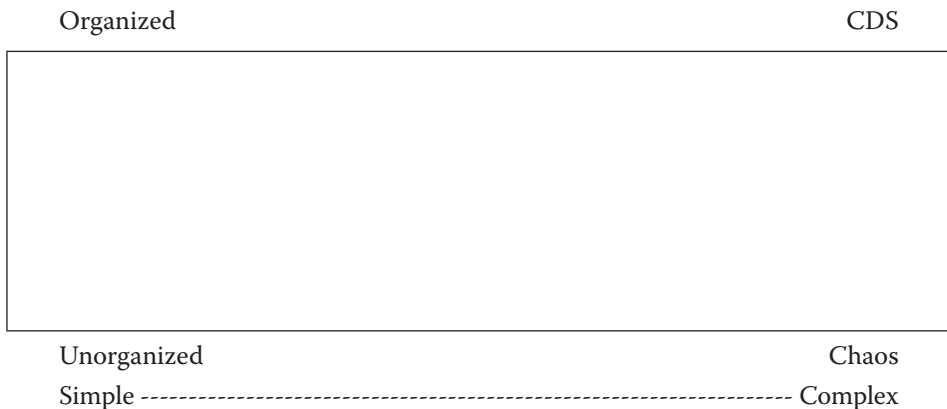
The main aim of the theory of dissipative or autopoietic systems, as originally developed by the Chilean scientists Maturana and Varela (1980) was to „disclose the nature of the living organization“. Living systems in this theoretical perspective are machines that themselves continuously generate and specify their own organization. Autopoietic machines are „relation-static“, or homeostatic, machines organized as a network of processes of production (transformation

and destruction) of components. This network of processes (relations) is continuously realized and regenerated through the interactions among the components that constitute the system as a unity in the existing space.

CDS, first and foremost, are natural systems. They are materially and thermodynamically constituted entities. This means their internal structuration and development, as well as processes by which they are born, evolve, and die, are regulated by transfers of energy from their immediate environment. The most important feature of the thermodynamic composition of dissipative systems is their *negentropic potentiality*. Negentropy, or negative entropy, and its opposite, positive entropy, are irreversible thermodynamic processes. Positive entropy refers to the universal tendency of thermodynamic structures to evolve irreversibly toward a stage of maximum disorder called *thermodynamic equilibrium*. The most effective measure of this increasing disorder is the progressive degradation of the system's internal structure. The theory of CDS thereby breaks away of describing systems as sums of components and focuses attention on „processes and relations between processes realized through components“ (Maturana & Varela 1980).

A CDS has many ontological levels of organizations (micro, mezzo, macro, mega), with agents at any one level serving as the building blocks for agents at a higher level (multimedia, for example). CDS are constantly revising and rearranging their components. Examples are to be found in information revolutions (computer technology). Their homeostatic systems are open and negentropic, maintaining a moderate energy level within controlled limits. Their main characteristic is that they function to maintain the given structure of the system within pre-established limits, using negative feedback loops with the environment to achieve this. The CDS is also open and negentropic, but is open „internally“ as well as externally in that the interchanges among its components themselves eith important consequences foe the system as whole. In Figure 1. it is shown in relationship to the two areas by Darwin and Johnson (2002).

Figure 1. Control, chaos and complexity



A CDS is a network of many „agents“ acting in parallel. The CDS is not a single entity - like an organization, it has many „agents“; but these are not in hierarchical system of command and control - they form an interconnecting network. This idea parallels one that has become very popular in discussion of new forms of organization, the network or cluster, which is seen to offer an alternative to the hierarchy/market dichotomy.

6. SOCIOCYBERNETIC APPROACHES AND MODELS FOR FOUNDAMENTAL RESEARCH

Sociocybernetics has attracted a broad range of scholars whose departmental affiliations represent the entire spectrum of the disciplines, and I mean by that, from the humanities and the social sciences through the sciences, mathematics and engineering. Furthermore, the many countries of origin of these scholars attest to the wide international appeal of sociocybernetic approaches. Despite the diversity of this community, there is wide agreement on some fundamental issues, for instance, on developing strategies for the study of human reality that avoid reification, that are cognizant of the pitfalls of reductionism and dualism, and that generally eschew linear or homeostatic models. Not surprisingly, however, there are also wide divergences in subject matter, theoretical frameworks and methodological practices in fundamental research. The institutional history of the organization that eventually became Sociocybernetics and the Research Committee on Sociocybernetics (RC51) of the International Sociological Association began in 1980 with the founding of an Ad Hoc Group by Professor Francisco Parra-Luna and proceeded with the organization of sessions at succeeding quadrennial World Congresses of Sociology. In recognition of its extraordinary growth, the group was promoted to the status of Research Committee at the 1998 World Congress of Sociology in Montreal, due primarily to the indefatigable organizational efforts of then-Secretary Felix Geyer. Since June 1998 RC51 has had its own website, managed by Chaime Marcuello, at the University of Zaragoza. RC51 also publishes an electronic journal, the *Journal of Sociocybernetics*, that has become the official organ of the group (Lee 2002).

These are all notable accomplishments; however, the past two decades of successful organizational activities should not distract from the deeper intellectual roots of sociocybernetics that reach back to the rise of a wide range of new approaches to scientific inquiry beginning in earnest in the 1940s. Here I would include, General System Theory (GST), cybernetics and information theory, game theory and automata, among others. Each, in one way or another, was a strategy deemed appropriate to the study of some aspect of *organized complexity* in which problem solving would have to depend on analysing systems as organic wholes.

This was that frontier of the next great advance of science that Weaver (1948) observed lay between the simple problems of classical physics with

few variables, the realm of necessity, and disorganized complexity with many variables amenable to description by statistical methods, the dominion of chance. Although today RC51 casts a wide net in terms of suitable subject matters, pertinent theoretical frameworks and applicable methodologies, the range of approaches deployed by scholars associated with RC51 reflects the maturation of these developments. Here we find, again, GST and first- and second-order cybernetics; building on these lines, we also find widespread sensitivity to the issues raised by *complexity studies*, especially in work conceptualizing systems as self-organizing, autocatalytic or autopoietic.

The paradigmatic method of sociocybernetics and systems science is modeling and computer simulation. An essential part in this is the use of systems diagrams, flowcharts, etc. Moreover, simulation is the method of choice in arriving at controllable prognoses and planning. Foundational systems research, for a long time characterized by the systems dynamics method, has suffered from serious theoretical deficits. Difficulties are, for instance, to determine the appropriate detail or granularity to be mapped and the mapping of implicit knowledge. The scenario method, which is another quantitative approach to simulation, overcomes some of these deficits but cannot grasp the so-called „soft“, qualitative aspects which are so important in the sociocultural field. Qualitative methods of simulation, like DEDUC (Bossel et al. 1989), but also other knowledge-based techniques, such as expert systems, are hard to structure as soon as problems typical of the social sciences are to be dealt with, rather than clearly circumscribed technical problems. One consequence of this is that meanwhile the development of ontologies, as tools for structuring real-world problems in a computer-compatible way, has become an area of its own within artificial intelligence (AI). Apart from this, the entire field of knowledge-based systems has to struggle with a chronic data problem when trying to map real-world problems into algorithms. Generative techniques and neural networks on the other hand create additional problems of controllability and reproducibility as well as problems of „communication“ between model and researcher, not to mention at all the final user and the client of the researcher.

Such problems arise because this kind of system produces novelties by internal learning process which are not easily reproducible by the external user and even depend on the particular history of the particular software system. Another important reason for the non-proliferation of the modeling of social systems outside the scientific community, which is common to all techniques, is the substantial effort and time required for modeling itself as well as for validation and for the communication and explanation of results. Regarding applications, *chaos control by sociocybernetic models and methods* is surely one of the most exciting outcomes of the theory of dynamical systems. There exists an impressive list of experiments where chaos control has been applied successfully. Chaos control in foundational research can help to re-establish at least a regularly oscillating output at a higher rate, with judiciously applied minimal perturbations. The idea of all the control methods in sociocybernetic

is to identify *unstable periodic orbits* inside the chaotic attractor and to stabilise them by slightly modifying some control parameters.

6.1. Unstable periodic orbits

Chaotic systems have the outstanding property that the attractor possesses a skeleton of unstable periodic orbits. In strongly chaotic systems they are even dense. Superficially, this only seems of interest from a theoretical point of view. If a trajectory approaches a periodic orbit by chance, it will remain close for a while, until it is repelled by the instability and disappears in the chaotic sea. But where does it disappear to and what is the meaning of it approaching by chance? If periodic orbits are dense on the attractor, a trajectory is always close to one of them. So one can model the chaotic dynamics by a sequence of concatenated periodic orbits. The orbits we are speaking about are the saddle type: they possess a stable manifold and an unstable one. Trajectories are attracted towards them along the first direction and are repelled along the second. Since a trajectory is repelled the faster the less stable an orbit is, it is natural to assume that the contribution on each orbit is proportional to its stability.

6.2. Methods for locating chaotic orbits

For a systematic approach of a control problem, the first step is to find the location of the chaotic orbits from experimental time series. There are few methods for identification chaos in longitudinal time series in fundamental research. The graphical approach is the preferred starting point for several reasons. When the independent variable is graphed versus time, it is readily apparent if there is any periodicity present. Lack of periodicity suggest a system either whose underlying process is stochastic in nature or that is mathematically deterministic and thus productive of chaos. The next test is to confirm the graphical findings. One method is to transform data using a Fourier power spectrum (Berge, Vidal 1984). The spectrum will show peaks at the frequencies of any periodic parts of the converted data. A limit point will show one spike, or peak. Limit cycles will show up as multiple peaks. Last, chaos will be exhibited as a broad band of spikes. The researcher should receive relative confirmation of the graphical analysis. It is relative because the graphical analysis is inexact and subject to perceptual error. The next test is called the spatial correlation test. To provide a computationally simpler dimension for an attractor, Grassberger and Procaccia (1983) introduced a dimension based on the behavior of so-called correlation sum (correlation integral). This dimension is called the correlation dimension D and has been widely used to characterize chaotic attractors. A second measure of chaos is K entropy. K entropy is also referred to as the Kolmogorov-Sinai entropy. Entropy measures the rate of information production and the growth of uncertainty. In a system increasing in entropy, the number of possible system states that evolve from some initial distribution over time also increases. In a chaotic system, information about system decreases over time when measured against the initial state. The Liapunov

characteristic exponents (λ) of dynamical systems measure the average rate by which the distance between close points becomes stretched or compressed after one iteration. Liapunovs are generalized eigenvalues over an entire attractor in that they give average rate of contraction or expansion of trajectories on an attractor. In a one-dimensional system there are three alternative variations of the Liapunov: 1) $\lambda < 0$, orbit is stable and periodic; 2) $\lambda = 0$, orbit is marginally stable; 3) $\lambda > 0$ orbit is chaotic. A Liapunov-positive system is by definition chaotic. The positive value of the Liapunov exponents indicates orbital divergence and a time scale on which state prediction is impossible. Negative Liapunov exponents indicate a periodic orbit. A zero Liapunov indicates a marginally or neutrally stable orbit. This often occurs near a point of bifurcation.

7. CONCLUSION

As we've seen, sociocybernetic and dynamical systems of fundamental research is providing the foundations for a reconceptualization of the world as one of instability, complexity and self-organization. It is a world that is both determined and unpredictable. Although shaped by traditional concerns of different disciplines, what we are calling collectively *complexity studies* have explored embedded order underlying the chaotic dynamics of some iterative, non-linear dynamical systems or the emergence of order at higher level of complexity in some such systems as they are driven far from equilibrium (Lee 1992). Chaos theory offers the possibility of applying deterministic models, formerly restricted to completely predictable systems, rather than stochastic models, to systems that behave randomly. Even though deterministic, the evolutions of chaotic systems exhibit extreme sensitivity to initial conditions and rapidly magnify small perturbations. Despite this, such systems display long-term order and stability by falling into a „basin of attraction“ or „strange attractor“, which limits the set of possible states a system may assume as it evolves. The irreversibility of the evolution of far-from-equilibrium, non-linear systems, characterized by self-organizing processes and dissipative structures, determines an arrow of time (Prigogine, Stengers 1984). According to Ilya Prigogine, in the light of instability and chaos, the laws of nature now express „possibilities instead of certainties“. Chance and necessity are interconnected and being and becoming reconciled. Chaos is not the opposite but the source and confederate of order. Compared with the ordered mathematical world of Newton and Descartes, the world of Cantor's sets and Peano's space-filling curves seemed arcane and counter-intuitive. However, Benoit Mandelbrot (1983) has shown how the structures these late 19th-century mathematicians conceptualized are inherent in the everyday world around us. His fractal geometry describes physical and temporal phenomena, snowflakes and coastlines, vascular and pulmonary systems, sleep cycles and heart fibrillations, which do not fit into the Euclidean categories of points, lines, planes, and solids - but somewhere in between. In sum, as Lee suggests, complexity studies „takes up where yesterday's General Systems Theory left off“.

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Александар А. ХАЛМИ

СОЦИЈАЛНА КИБЕРНЕТИКА И ТЕОРИЈА КАОСА: НОВЕ МОГУЋНОСТИ ЗА ФУНДАМЕНТАЛНА ИСТРАЖИВАЊА

Резиме

Овај чланак поставља темеље за проучавање важности опће теорије сустава и њене „сестре близанке“ кибернетике те показује покушаје приказивања концепата и идеја за проучавање теорије каоса у подручју фундаменталних истраживања. Ревидирају се неки од основних појмова у подручју кибернетике и теорије каоса, те се расправља о њиховим најзначајнијим импликацијама за Галилејску знаност. На основи бројних поставки закључује се да социјална кибернетика пружа нове могућности за контролу каотичних процеса. Уједно се истражују неке од посљедица, особито оне које се односе на поновну концептуализацију логике социјалног/друштвеног каоса која је уређена/руковођена парадигмом нелинеарне динамике и социјалне кибернетике што има велики значај за фундаментална истраживања.

Кључне ријечи: социјална кибернетика, теорија каоса, нелинеарна динамика, теорија комплекситета, нова таксономија, фундаментална истраживања.

*Boris Đ. KRIVOKAPIĆ**

Univerzitet MB, Poslovni i pravni fakultat, Beograd

FUNDAMENTAL RESEARCH IN THE SCIENCE OF INTERNATIONAL LAW

Abstract: After reviewing what international law is, the paper points out the specifics of legal science and, in particular, the science of international law. Relying on his narrow view of fundamental research in the field of the mentioned science in the sense that he considers as such only the efforts of a team of researchers within a planned scientific research project, the author deals with the problems of fundamental research in international law, research that in his opinion is not fundamental, although it seems so, and specific issues that may be the subject of fundamental research. In his concluding remarks, he points out that in modern conditions only teams of narrow specialists can conduct fundamental research quickly and offer really good results, and that as a work of a larger number of experts, especially when they are from several countries, such results have a much better chance to be noticed and to contribute to the development of the international law science and influence practice, especially in terms of contributing to the creation of new norms of international law and influence on the prevention of international disputes or, where they did occur, facilitating their resolution through diplomatic means and before international courts. This is the possible significance of this research for the progress of the global community and the prosperous development of countries. However, the science of international law alone cannot create a new, better international law, just as neither it nor international law, no matter how good, can ensure progress on its own. This is because the final decisions and practical steps are in the domain of politics, ie. lie in the hands of states.

Key words: international law, basic scientific research, legal science, social sciences.

Every science essentially boils down to the study of selected phenomena and processes with the aim of establishing the objective scientific laws that regulate their existence and functioning, implying that the research and

* Academician of the Russian Academy of Natural Sciences (RAEN, Department of Socio-Economic and Legal Affairs, Moscow); Full professor at the Faculty of Business and Law, University „MB“ (Belgrade, Serbia); Professor of the Faculty of Law, Samara National University „S.P. Korolev“ (Samara, Russia).

its evaluation must be not only sufficiently expert but also impartial so that they can be checked, repeated and Similarly. Within those frameworks, there remains a space filled by the individual characteristics of the researcher, which can be especially observed in the social sciences, where many phenomena cannot be studied in the form of experiments, cannot be precisely measured and compared on that basis, etc., so that the majority of research that it precedes the thought process that results in conclusions, takes familiarity with the works of other authors with possible, but not always present, reliance on practice. Since we are dealing with the study of social phenomena, a special danger lies in the fact that even the most virtuous theoretician is largely influenced by everything that is woven into his personality in the process of his development both as a man and as a scientist, such as certain religious and other views on the world, certain prejudices, etc. of which the scientist himself is usually not even aware. Hence, it is not surprising that very different approaches appear in the social sciences.

And this work is subjective in many respects. Deeply aware that everything can be looked at in a different way, the author perceives his contribution only as a modest attempt to illuminate from a specific angle the problem of fundamental research in the science of international law, which, in his opinion, has not been sufficiently explored.

1. SCIENCE OF INTERNATIONAL LAW

1.1. International law

When we talk about international law, including the science that deals with its study and development, we have in mind what is often more closely defined as public international law.¹

There are countless different, more or less successful definitions of that law.² Some of them corresponded to the time in which they were created, but later development made them obsolete. And indeed, we believe that any determination should concern a precisely determined historical period. After all, in the social sciences, events and phenomena should always be viewed in a historical context.

In this regard, since we are primarily interested in contemporary (positive, valid) international law, we believe that it could be defined as a specific legal order (a set of interrelated legal norms and principles) that arose and is developing in the international legal community, a common by the will of several states and other subjects of international law, has its own legal sources, different from the sources of the internal law of states, disposes of its own system of legal sanctions and regulates international public law relations, primarily those in

1 When we say international law (without the adjective public), we mean the legal system that governs cross-border relations of public law, not private law character (like, for example, international private or international commercial law). Only that system is truly international law, and it is based on a number of elements - sources, subjects, the object of regulation, the method of ensuring the execution of established decisions (sanctions), etc.

2 Krivokapić Boris (2017) *Međunarodno javno pravo*, Beograd, 28-44.

which states and certain international organizations participate, and increasingly those whose participants are some other actors of the most important international political, economic, military, security and other relations, as well as certain internationally recognized rights and obligations of other subjects of international law, including various legal and natural persons.

When, in this way, we know what international law is, we can deal with the science that studies it. However, just as international law is only a part of the law as a social creation, so the science of international law is essentially a part of legal science. This means that, taking into account all the specifics, a lot of things that apply to jurisprudence, in general, apply to it.

1.2. Legal science

In the simplest terms, legal science (legal philosophy, jurisprudence) is a social science that deals with the study of law as a phenomenon and related issues.³ For a better understanding, it is necessary to clarify briefly what we mean by science, whether legal science fits into those frameworks and what are its specificities in relation to other scientific disciplines.⁴

In this regard, we dare to state for the purposes of this work that science is reduced to the study and objective analysis of the world and concrete phenomena and processes in it, in their dynamics and statics, with the aim of their complete understanding as much as possible and on that basis determining the governing laws, with the aim of creating a system of verified, arranged and systematized knowledge that can be used in practice.⁵

As one of the social sciences, legal science has a lot in common with them, which is especially evident when compared with the natural sciences.⁶

3 About legal science: Pound Roscoe (1960) „The Function of Legal Philosophy“, *Vanderbilt Law Review*, No. 1, 5-21; Barnett Randy E. (1985) „Why We Need Legal Philosophy?“, *Harvard Journal of Law and Public Policy*, Vol. 8, 1-18; Dickson Julie (2011) „On Naturalizing Jurisprudence: Some Comments on Brian Leiter's View of What Jurisprudence Should Become“, *Law and Philosophy*, No. 4, 477-497; Kramer Matthew H. (2012) „What is Legal Philosophy?“, *Metaphilosophy*, No. 1-2, 125-134; Finnis John (2014) „What is the Philosophy of Law?“, *American Journal of Jurisprudence*, No. 2, 133-142; Dajović Goran (2017) „Proučavanje prava – pravna nauka, teorija i filozofija“, *Pravni zapisi*, No. 2, 222-248; Cairns Huntington (2019) *Legal Philosophy from Plato to Hegel*, John Hopkins University Press.

4 It would be more correct to talk about legal sciences in the plural because it is considered that there are a number of such sciences, each of which has its own subject of study. In this sense, legal sciences are divided into general and individual, positive law and historical law, etc. but that goes beyond what concerns us in this paper.

5 Taking a broader view, science can mean various things, among which, in particular: 1) the study of related phenomena in time and space, using scientific methods; 2) special procedures and methods of scientific research; 3) people qualified for scientific research and engaged in it (researchers, scientists, scientific community); 4) institutes and other institutions engaged in scientific research work; 5) results of scientific research work; 6) scientific literature and periodicals; etc.

6 In addition to the division into natural and social sciences, there are various other classifications of sciences. Sometimes three basic categories are mentioned - natural, social, and so-called. formal sciences, but humanities, medicine, technology, agriculture, etc. are also often distinguished. science. It is thought that there are about 2,000 scientific disciplines today.

Unlike the latter, which study natural phenomena, social sciences deal with human behavior, social relations, and human community. This has the effect that, even if it is not said openly, sometimes they are not perceived as true sciences, like the natural sciences, or real scientificity is recognized only in some of them, such as history, economics, sociology, etc. We mention this because it is closely related to the problem of fundamental scientific research since the previous condition of such research is that there undoubtedly is a relevant serious and rounded scientific discipline.

And indeed, the question can be raised if, for example, natural sciences investigate the world in order to find objective (natural) laws that govern it (fundamental research) and then apply those laws for useful purposes (applied science) what does legal science do? This is especially true when it is known that people are the ones who create legal norms and institutions. But the different views, interests, needs, value systems, and other characteristics of the legislator (regardless of whether he is an individual or collegial body) lead to the fact that legal orders in various eras and in various places are significantly different. This could then also suggest that there are no objective laws that can be investigated.

In particular, since a law is created by a more or less defined legislator,⁷ it also means that he or the government that succeeds him can change that law, and even partially or completely cancel it. Hence the logical question of whether it is even possible to talk about some kind of scientific, and even more so, fundamental research in the field of law. In this connection, it is also possible to claim that legal science can at best deal with the analysis, interpretation, and evaluation of existing legal norms individually or as part of a certain legal order, and not with the study of objectively existing laws and legalities, meaning those that do not depend on human will. Translated into simple language, this would mean the position that law is only one of the various normative systems,⁸ that is, a specific institutionalized mechanism, and that dealing with it is a skill or profession that is of practical use but is not a science in the true sense of the word. As a final argument, a favorite maxim among lawyers could be used, which says that "law is the art of good and fair" (*jus est ars boni et aequi*).⁹ Relying on it, one could say - here, even the lawyers themselves talk about law as an art or skills, in any case about some kind of practical activity, not science.

7 With respect to all the specifics, this applies in principle even to customary law.

8 There are also normative systems such as morality or etiquette, which are not law because their norms only have a disposition (a rule of conduct, prescribing what must or must not be done) but not a sanction (specifying what evil will be inflicted on those who do not respect the disposition). It is rightly pointed out that „legal rules do not tolerate ... leniency towards the violator, but always provide for appropriate punishment, with the threat or application of coercion“, and that the most obvious external difference between morality and law is „the voluntary adherence to moral norms and the forcing of compliance and application of legal norms external coercion“. Čavoški Kosta (1996) *Uvod u pravo I*, Beograd, 21.

9 ts author is the Roman jurist and senator Juventius Celsus who lived at the end of the 1st and the beginning of the 2nd century, and it was recorded and thus immortalized by his contemporary, the famous Roman jurist *Domintius Ulpianus*.

In this regard, the definition of law as a practical activity is correct, but it is also insufficient, because it refers to only one of its parts. In addition to the normative (regulating social relations) and practical (dealing with it as a profession and trade) law also has a scientific dimension.¹⁰ After all, the cited Latin maxim is also often translated as „law is the science of the good and just.“ Finally, even if we were to speak of law only as an art, it is known that various arts are also the subject of study by scientific disciplines - musicology, theater studies and others.

It could also be objected that legal norms in practice are often not applied in an intended way, and are even grossly violated, sometimes without any consequences, which then raises the question of whether these are real laws at all. We have in mind the meaning of the word law, not in its narrow, legal sense (normative legal act, one of the formal sources of law) in the broadest sense, including the so-called scientific laws (laws, principles). And indeed, laws that are a building instrument and a functional (regulatory) part of the law cannot be equated with the laws of science, which are a presentation and a theoretically derived explanation of interconnected phenomena, facts, and events that are repeated in reality and do not depend on human will.

However, we are interested in something else, and that is whether the fact that a certain law is not fully implemented can be taken as an argument for denying its existence. In this regard, we must note that it is often overlooked that even the so-called natural or physical laws are not always absolutely applicable.

For example, although $x+y$ should at all times give the same result as $y+x$, it turns out that this is not always the case. For example, there are completely different reactions and their consequences when water (H_2O) is added to sulfuric acid (H_2SO_4) and when the opposite is done, i.e. sulfuric acid is poured into the water. Anyone with an elementary knowledge of chemistry knows that.

We will settle for just one more example, which is probably even more convincing. It is well known that the law of the physical world, according to which all bodies contract when cold and expand when warm, does not fully apply to water. It is characterized by the phenomenon of the anomaly of water, which is reflected in the fact that water has the highest density at $+4\text{ }^{\circ}\text{C}$ (although it „should“ be in a solid state), as a result of which it has the highest volume at $+4\text{ }^{\circ}\text{C}$, and then upon cooling below that temperature it expands and does not contract like other substances.

It should already be clear from these few remarks that legal science is special in many respects, but it is undoubtedly a serious science. Moreover, it is one of the oldest sciences in general. Simple logic leads us to this, which suggests that legal norms were created in parallel with the development of civilization and the appearance of the first organized social communities, and in a certain sense even before them.¹¹ This also means that legal rules always had to be designed,

10 Just like doctors have an applied part of their profession that consists in treating people, which is the purpose of their existence, but there is also medicine as a serious and important science that is the basis of it.

11 Some rules, which in modern terminology we could call the first legal norms (eg those on punishment for injuring or killing a member of the group) must have already existed in the original community.

formulated, explained, compared, and interpreted by someone, so that they could be properly understood and applied.

In addition, this is confirmed by a number of facts and artifacts and the simple truth that some of the oldest preserved written historical monuments are actually - legal acts. This includes numerous codes of the Old Century, such as: the Code of Ur-Nammu (around 2100 BC), Code of Lipit-Ishtar (around 1930 BC), Laws of Eshun (around 1720 BC), Hammurabi's Code (around 1770 BC), the Assyrian Code (ca. 1075 BC), the Roman Code of XII Tables (451-449 BC), the Indian Code of Manu (IV-II centuries BC), etc. To that can be added a number of ancient international agreements, some of which have been preserved to this day.¹²

Of particular importance is the fact that we know for sure that law was seriously studied even in ancient societies, for which it is enough to remind us of the famous Roman school of law and the whole constellation of Roman jurists-philosophers. In addition, in Byzantium and other developed countries of the time, there were special high schools where two disciplines were studied - philosophy and law. It is mostly forgotten, but it is also a fact that the first universities, which were founded in the 11th century, had four basic types of schools (studies), i.e. of what we call faculties today: medicine, theology, philosophy (also included history, philology, and natural sciences) and - law!

Even the title of doctor, which is still the highest scientific title today (Doctor of Science, Ph.D.), was introduced in order to distinguish four law professors of the oldest university in the world - the one founded in Bologna in 1088. Those were the famous glossators¹³ from the 12th century: Bulgarus, Martinus Gosia, Jacobus de Boragine, and Hugo de Porta Ravennate.

We will be content with just one another remark. Some of the world's brightest minds and greatest recognized philosophers were lawyers by education and profession.

Regarding the claim that the study of law does not deal with the so-called objective laws, i.e. phenomena that are not influenced by man, but by a normative system that is human creation and depends on the will of the legislator, one can answer that any law must satisfy certain legalities concerning its elements and their mutual relationship. Without it, there is no legal system, and therefore no state. The task of legal science is to determine these legalities, analyze them, propose directions for improving the legal order, etc. After all, part of legal science is also legal philosophy, which deals with abstract problems, unrelated to the concrete normative system, such as: what is law, what is a legal norm, what are the elements of a legal norm, what is a legal sanction, etc.

In addition, one of the directions of legal science is the school of natural law, which believes that there is an objective, ideal law that has its basis in God's

¹² More will be said about them later.

¹³ Lawyers in the XII-XIII c. in Italy, France and Germany who enabled great progress in legal science, by studying and popularizing classical Roman private law, publishing organized collections of those regulations, on the occasion in the margins of which they wrote their remarks, interpretations, and explanations called glosses (lat. glossa – gloss).

providence, the sense of justice instilled in man, and the like. According to its supporters, the task of jurisprudence is to discover that objective law (determine its laws) in order to bring human law (the one created by earthly legislators) as close as possible to that ideal.

The signatory of these lines is not a supporter of the school of natural law but believes that law is only what is valid in a given time and place, i.e. represents a real legal obligation for those to whom it applies, with the understanding that this also implies law in a historical perspective.¹⁴

However, disbelief in the existence of some kind of ideal, natural law that people should only recognize and apply and all problems would be solved, should by no means be interpreted as an attitude that there are no objective legalities in law. Such laws exist, but because without them there would be no law as a system (eg there is no law without legal sanction, there must be a certain hierarchy between legal norms, etc.) and they are an important part, but still only a part of what legal science deals with.

Practicing legal science does not only mean possessing and using specific legal knowledge and methods but most often also implies knowledge and use of other sciences and methods. Thus, when compiling, and even more so when applying regulations, to a greater or lesser extent various knowledge, data, and factors must be taken into account, including those concerning what is part of philosophy, history, sociology, economics, psychology, medicine, criminology, victimology, etc.

1.3. Science of international law

Since international law itself is a specific legal order, it should not be surprising that the science that deals with it, although it belongs to the legal sciences, still has certain peculiarities.

The first norms and principles of international law emerged in parallel with the appearance of the first organized social communities - eg. the rules that contracts must be respected (*pacta sunt servanda*), that even the word given to the enemy must be respected (*fides etiam hosti servanda*), that foreign representatives (diplomatic representatives) enjoy immunity and personal inviolability, etc. Although they were sometimes violated, those rules survived throughout history, as part of general international law, for which we have a lot of evidence,¹⁵ with the most important confirmation being that they are still valid today.¹⁶

14 A law that was valid in the past, in a certain period, and in a certain area.

15 One of the striking examples is what happened when around 481 BC. the Spartans killed the envoys of the Persian emperor Darius, angry that they had rudely demanded submission from them. Not long after, concluding that they had committed sacrilege, the Spartans chose two volunteers, who went to the new Persian emperor Xerxes, saying that they were compensation for the slain envoys and that he could do with them as he pleased. The story is interesting because of the reaction of Xerxes, who sent the Spartans home, saying that he would not be like them, who by killing the ambassadors trampled on the laws that are common to all nations. Therefore, he referred to a kind of objective, a universal human right. About the said episode; Herodotus (2013) *History*, Transl. by George Rawlinson, Roman Roads Media, par. 136, p. 477.

16 Kada, opšte uzev, ne bi bila poštovana ili bi bila osporavana, jednostavno bi prestala da postoje, izgubila bi se u mračnim hodnicima istorije, što, svedoci smo, nije slučaj.

The oldest preserved international agreement, the one between Ebla and Abarsal, was made at least 4,500 years ago (between 2350 and 2250 BC), and it is known that there were much older ones. That these were not short texts of two or three sentences is evidenced by the fact that e.g. contract between the Egyptian pharaoh Ramses II and the Hittite emperor Hattushil III, concluded around 1278 BC. e., has as many as 18 members and deals with a number of issues - it was a treaty on peace, but also on a military alliance, mutual assistance in case of internal unrest, and extradition.

Along with the development of the international legal order, the science of international law also developed. Although there are those who associate its appearance with the Middle Ages, for many reasons it can be said that in fact it was born in the distant past. We pointed to this in two papers in which we presented many arguments in support of that thesis, so there is no need to repeat it.¹⁷

Nevertheless, we must note that a whole series of thinkers of Ancient West - Greece and Rome in the first place (Pythagoras, Socrates, Polybius, Plato, Aristotle, Cicero, Seneca, Ulpian, Paulus, Titus Livius, Tacitus, Sextus Pomponius, Proculus, Philo of Alexandria, etc.) but the East as well (Lao Tse, Confucius, Taoists, Mo-Ti, Mencius, etc.) dealt with various problems that, by the modern understanding, belong in the domain of the science of international law. After all, one of the first attempts to create a system of international law is attributed to Demetrius of Phaleron (around 350-283 BC), the spiritual initiator and the first organizer of the famous Library of Alexandria.

The science of international law was also built by some of the brilliant minds of later eras, such as (to mention only a few): Bartolo da Sassoferrato and Giovanni Legnano in the 14th century, Francisco Vitoria, Domingo Soto, Pierino Belli, Jean Bodin, Baltazar Ayala, Francisco Suárez, Alberico Gentili, Hugo Grotius, John Selden in the 15th-16th centuries, Richard Zuch and Samuel von Pufendorf in the 17th century, Cornelius van Binkerschuck, Johann J. Vitriarius, Christian von Wolff, Emmer de Vattel in the 18th century, Georg F. Martens, Henry Wheaton, John Austin, Johann K. Blunckli, Fyodor F. Martens in the 19th century. and many others. Questions of importance for the theory of international law were dealt with by many famous names of philosophy in general and, in particular, legal philosophy, such as Jean-Jacques Rousseau, Immanuel Kant, Jeremy Bentham, Georg Jelinek, Lasa Oppenheim, Leon Digi, Giorgio del Vecchio, Hans Kelsen, Herbert Hart, etc.

Today, the science of international law is developed in all parts of the world. No one questions its existence and importance. Exceptionally, this is what we did at the beginning of this paper in a certain sense, but only in order to create a basis for further consideration, which is whether fundamental research in the field of international law science is possible and what it can be reflected in.

17 Krivokapić Boris (2012) „O nauci međunarodnog prava u antičkom svetu“, *Pravni život*, No. 12, 215-228; Кривокapiч Борис (2022) „Наука международного права – с древних времен“, *Юридический вестник Самарского университета*, No. 1, 49-64.

2. FUNDAMENTAL RESEARCH IN THE DOMAIN OF INTERNATIONAL LAW

2.1. Understanding fundamental research in international law for the purposes of this paper

Without disputing the possibility, even the justification, of different approaches, in this paper we understand fundamental research in the science of international law in a narrow sense. Namely, to the usual essential approach according to which such research is theoretical or experimental work aimed at improving basic knowledge about the world (phenomena in nature, society, and human thought and about the laws that govern them) or, to the study and improvement of scientific theories for better understanding and prediction of natural and other phenomena, we add some formal requirements. Everything will be clearer if we explain what we do not consider fundamental research here.

First, we do not consider works that are the work of only one author as such. Regardless of the fact that sometimes a gifted, inspired, and dedicated individual can make important breakthroughs in science, for the purposes of this paper under fundamental research we consciously leave aside the works of one or two, or three authors, no matter how extensive and important they may be. In order for this approach not to be misunderstood, we note that the signatory of these lines also has several very extensive monographs, which exhaustively and comprehensively dealt with the relevant issues, including appropriate theories, disputed situations, different approaches, offered new definitions and classifications, etc.¹⁸ And yet, speaking of fundamental research, we do not have such works in mind here.

Secondly, we do not consider a series of works in which one author deals with various issues in the domain of a certain area of international law as fundamental research. For example, although we have about thirty rather extensive scientific articles, dedicated to the same field - various aspects of international human rights law, such as the history of the development of human rights, the nature of human rights, the classification of human rights, the basic principles of the modern concept of human rights, subjects in the matter of human rights, basic prerequisites for the realization of human rights, abuses of human rights, the right of peoples to self-determination, the rights of ethnic (national) minorities, the rights of indigenous peoples, women's rights, etc., that, at least in the sense of how we look at it, cannot be considered fundamental research, all and when it was combined and published in some kind of monograph or collection.

18 Krivokapić Boris (2004) *Zaštita manjina u međunarodnom i uporednom pravu*, tom I-III, Beograd, in total 2961 pp.; Krivokapić Boris (2011) *Aktuelni problemi međunarodnog prava*, Beograd, 754 pp.; Krivokapić Boris (2017) *Međunarodno javno pravo*, Beograd, 926 pp.; Krivokapić Boris (2017) *Mir i rat u međunarodnom pravu i međunarodnim odnosima*, Beograd, 1074 pp.; Кривокапич Борис (2020) *Мирное разрешение международных споров*, Самара, 591 pp.; Кривокапич, Борис (2021) *Международное право в период вооруженных конфликтов*, Самара, 834 pp; etc.

Thirdly, we do not consider fundamental research activities that are reduced to collecting a series of works by various authors, which were created independently of each other, without division of roles or without precisely defined project tasks that complement each other. In this sense, we do not see fundamental research in the work of various international scientific conferences, the publication of proceedings concerning certain problems, and the like. All of these are important mechanisms that contribute to the development of science and the researchers themselves as such, but they are not really basic, basic research for us.

When we talk about such research here, we primarily mean team efforts in the form of a special scientific research project with a sufficient number of participants, preferably of different specialties, provided that such a project is seriously prepared, lasts long enough, and has predefined frameworks and goals. When it is justified, it is preferable to deal with multidisciplinary research. In other words, we experience fundamental scientific research in the matter of international law as a well-planned and institutionally framed research work of a group of researchers in a similar way as such research is carried out in the natural sciences.

Namely, the fact is that the work of one or two or three authors, no matter how much effort and knowledge is woven into it, by the nature of things suffers from more or less pronounced one-sidedness and in principle cannot match the result of the work of a team of specialists for certain topics. Because, in the science of international law, there is no room for sudden spectacular individual insights, inventions, and the like that would fundamentally change scientific knowledge overnight. In addition, even the best connoisseur of the relevant field of international law cannot be a sufficient expert for all the issues it encompasses. After all, if e.g. we have in mind a project on which 15 researchers work for 5 years, that gives us in a total of 75 years of scientific research work, which means that an individual could never invest so much time, not to mention that, when he would finally finish the research (if he would experience it at all) it would no longer be necessary because it would have become obsolete long ago since the author would not have a way to study new issues and at the same time harmonize the parts already covered with the changes brought by life.

All that has been said by no means means that individuals cannot be the authors of fundamental works, works that brought new developments, strongly influenced scientific thought and marked the development of a certain area of international law to a greater or lesser extent. It is quite possible and it happens from time to time. However, such moments were characteristic of the past, while they are less present today when there is a certain proliferation of monographs and other scientific works.

2.2. The fundamental problem of fundamental research in the science of international law

The relatively extensive introductory remarks at the beginning of this paper had their purpose. Namely, as with some sciences, primarily natural, fundamental research is implied, so it is not always easy to determine what it might consist

of when it comes to legal sciences. This is because, in principle, they study legal norms and institutes, or legal relations, which are not objective phenomena that exist by themselves, but are products of the human mind and as such is subject to various changes, again by human will. This has already been discussed.

Those moments are even more pronounced when it comes to the science of international law. The reason for this is that the internal (national) law of the state is a rounded system, in which the most important legalities are relatively clearly visible, among which there must be a hierarchy of legal norms and a hierarchy of state bodies and other mechanisms that are established by law and serve its implementation. This is a consequence of the fact that this law is created and applied by the state, which is the highest (sovereign) authority in its territory. Within these frameworks, fundamental research is possible, which can have various dimensions in the sense that they are aimed at systemic, historical-legal, comparative legal, and other studies, with the aim of acquiring new or deepening existing knowledge.

All that is much more complicated when it comes to the relations that exist in the international community. Their main subjects of the sovereign state, are legally equal to each other, which means that they cannot impose legal solutions on each other (*par in parem non habet imperium*) as they impose such solutions on other subjects (legal entities and natural persons) in their legal orders. Therefore, it has long been noticed that, unlike internal law, international law is in principle set horizontally, not vertically, that it is mainly governed by relations of coordination and compromise, not subordination and the like.¹⁹

This sometimes has the effect that, by the decision of states, especially great powers, even the basic principles of international law are deviated from. We will cite a few examples, with the proviso that we will not deal with cases in which international legal norms were applied in a wrong way or were not applied in a situation when they had to be applied,²⁰ but we will refer only to indisputable cases of conscious trampling of the basic principles of international law, precisely determined by the most important international law documents. Such as eg. the principle of sovereign equality of states and the principle of *pacta sunt servanda*, which are not only confirmed by the UN Charter and a number of other important international legal agreements but are also general international legal customs, which means that as such they bind everyone, including states that are not members of the UN or appropriate arrangements.²¹

One of the solutions that not only belongs to imperative (cogent, absolutely mandatory) norms but in the true sense is part of the foundation of the entire structure of international law, is the principle of sovereign equality of states.

19 Krivokapić Boris (2017)¹ op. cit., 67-69.

20 As for example during the NATO aggression against Yugoslavia in 1999. and other cases in which the UN, due to the veto of one of the permanent members of the Security Council or for other unprincipled reasons, was unable to fulfill its basic role - the preservation of world peace and security, i.e. helping the victims of aggression.

21 Krivokapić Boris (2012) „Običajna pravila u međunarodnom pravu”, *Megatrend revija*, No. 3, 35-81.

It is understood that legal equality is meant because in reality states are not and cannot be equal. That legal equality is guaranteed by all positive (valid) international law, headed by the UN Charter (Art. 2/1).

And yet, within certain frameworks, that same UN Charter allows and even prescribes legal inequality between states. She herself (Art. 23 and 27/3) single out five great powers and, entrusting them with the primary responsibility for maintaining world peace, gives them greater rights than other UN members - unlike the other members who enter the Security Council only on the basis of periodic elections, the great powers are permanent members of that body also dispose of the so-called with the right of veto with which they can prevent the adoption of a decision of the Council on essential issues whenever they wish.

In addition, although, according to a complex procedure, only states, which means sovereign entities, can be admitted to their membership, from the very founding of the United Nations in 1945, until gaining independence due to the collapse of the USSR at the end of 1991. among the full members of that organization were Belarus and Ukraine, although in that entire period they were only two of the 15 federal republics of the Soviet Union.²² In other words, even though they were not sovereign states, but only federal units of the USSR, those republics were members of the UN Charter and a number of other international treaties that are connected to membership in the UN - the statutes or agreements on the establishment of specialized agencies, conventions on privileges and immunities and a number of other important agreements concluded under the auspices of the UN.²³ In addition, they were members not only of the UN but also of a number of other international organizations, reserved only for states.²⁴

There are, unfortunately, many examples of breaching the obligation of *pacta sunt servanda*. However, what stands out among them is what happened when the provisions of the UN Charter were deliberately not only violated but also illegally changed. Namely, although the Charter specifies (Art. 27/3) that in the Security Council, decisions on essential issues are made by a qualified majority,²⁵ „including the unanimous votes of all permanent members of the Council“ (which means that the abstention of at least one of them prevents the adoption of a decision) when in 1950 representative of the USSR boycotted the

22 Although the granting of special status to these Soviet republics was explained by the fact that they suffered the greatest sacrifices and destruction in the fight against fascism, it was a political solution, part of a compromise settlement between Stalin and his Western allies, which the USSR, along with its own, won in the UN General Assembly two more votes.

23 Vienna Convention on Diplomatic Relations (1961) - since 1964, International Convention on the Elimination of All Forms of Racial Discrimination (1965) - since 1969, International Covenants on Human Rights (1966) - since 1973, Vienna Convention on the Law of Treaties (1969) - since 1986, etc.

24 International Labor Organizations - since 1954, UNESCO - since 1954, etc.

25 After the amendment of the UN Charter in 1965, which increased the number of members of the Security Council from 11 to 15, it is required that 9 members voted for the decision. At the time in question, according to the original text of the Charter, there were only 11 members of the Council, and a majority of 7 votes was sufficient to make a decision.

sessions of the Council, convinced that without his affirmative vote he would not be able to decide, the USA made sure that the Council, even without the USSR representative, passed resolutions that created UN forces to fight against North Korea. This was done in drastic violation of the Charter, which also means the principle of *pacta sunt servanda*, but that moment is not the only reason for mentioning this episode. Even more important were the far-reaching consequences, because the aforementioned procedure created an international legal custom that actually changed the Charter in the sense that only a negative vote of a permanent member prevents the adoption of a Council decision in the future. In other words, the Charter was not only violated, but also changed (amended) in a way contrary to its express provisions on the method and procedure of its revision (Arts. 108-109).²⁶

Additionally, since, after happening as described, the representative of the USSR resuming his seat in the Security Council vetoed any resolution related to Korea, the US managed to fundamentally change the system established by the Charter in another way, by ensuring that the UN General Assembly adopted the Resolution „United for Peace“ (1950) by which it authorized itself to assume the role of the Council and take the necessary measures, including the use of armed forces, in a situation where the Security Council is blocked by a veto. With this document, a new factual revision of the UN Charter was carried out in a way contrary to the provisions of its Article. 109.

The above examples illustrate that, contrary to all principles, in international relations and international law, what is agreed upon or imposed by the great powers sometimes applies. Therefore, a legitimate question arises - what is the meaning of in-depth research of international law, when it is known that what is and what will depend on the will of the world's power centers?

Even worse, research that would be imposed as supposedly independent, objective, and the like, but actually directed and sponsored by the countries concerned, could be the basis for imposing various quasi-scientific, but also fundamentally political and generally wrong solutions.

One example is the situation that arose in the 90s of the last century, when at the time of its complete dominance and lulled in the vision of itself as a undisputed world leader for whom the rules that are mandatory for others do not apply, the USA tried to use the provisions of international law interpreted in a way that would justify the government of that country to use force in international relations when it deems it useful - regardless of the fact that the principle of the prohibition of force is the cornerstone of the entire modern international legal order. For this purpose, the US government organized and promoted various kinds of „research“, including international thematic conferences, collections

26 The issue of revision of the Charter is regulated in its Article. 109, by providing that, under certain conditions, a General Conference of UN members can be held for this purpose, and that the amendment of the Charter enters into force only if it is recommended by the Conference with a two-thirds majority of votes, and then ratified by two-thirds of the UN members.

of works, and the like, which served to prove not only the alleged right but also the obligation to undertake the so-called humanitarian interventions around the world, explained the alleged right of the USA to the so-called preventive self-defense whenever they think that they might be threatened at some future time.²⁷ It is clear that in those cases, it was about the misuse of science for political purposes. For the sake of truth, it should be noted that many scientists from other worlds, including the natural sciences, are engaged in research that serves the purpose of politics, the invention, and the production of various weapons, including weapons of mass destruction, etc.

What is undoubtedly good is the fact that objectively conducted fundamental research in the field of science of international law can help to better understand important problems and phenomena, easier adoption and more consistent implementation of related solutions, etc. The question, however, is which research can be considered fundamental and why.

2.3. Research that is not fundamental although they look that way

We believe that some research, which is often thought to deal with fundamental issues of international law, in fact, is not that. Moreover, we tend to think that, contrary to what prevails in many circles, various research that is reputed to be particularly important and complex, are actually not necessary at all. This is especially true for those discussions that are reduced to mere polemics that lead nowhere. Although we do not dispute that it can be justified from the point of view of e.g. philosophy, we tend to consider that from the point of view of the science of international law such approaches are just a useless waste of energy and time. We will mention only two examples.

2.3.1. Natural Law Research

A huge number of works are devoted to various aspects of the so-called natural law, especially its place and role in the domain of international law.²⁸ And indeed, if the idea of the existence of such a law were to be accepted, then

27 We are referring first of all to the project "Responsibility to Protect" and the attempt at quasi-scientific reasoning and justification of the so-called The Bush Doctrine.

28 For some of the views: Kunz Josef L. (1961) „Natural-Law Thinking in the Modern Science of International Law“, *American Journal of International Law*, No. 4, 951-958; Bull Hedley (1979) „Natural Law and International Relations“, *British Journal of International Studies*, No. 2, 171-181; Schall James V. (1991) „Natural Law and the Law of Nations: Some Theoretical Considerations“, *Fordham International Law Journal*, No. 4, 997-1030; Hall Stephen (2001) „The Persistent Spectre: Natural Law, International Order and the Limits of Legal Positivism“, *European Journal of International Law*, No. 2, 269-307; Orakhelashvili Aleksander (2008) „Natural Law and Customary Law“, *Zeitschrift für ausländisches öffentliches Recht und Völkerrecht*, Vol. 68, 69-110; Teson Fernando R. (2013) „Natural Law as Part of International Law: The Case of the Armenian Genocide“, *San Diego Law Review*, Vol. 50, 813-832; Gordon Geoff (2016) „Natural Law in International Legal Theory: Linear and Dialectical Presentations“, in: Orford A., Hoffmann F., Clark M. eds., *The Oxford Handbook of the Theory of International Law*, Oxford University Press, 279-305.

it would be an inexhaustible mine for various theories, analyses, proposals, etc. which at first glance might look like fundamental research. In addition, such considerations would supposedly have a pronounced social significance, as they would help to arrange social relations in a much better, almost perfect way. To recall, the idea of natural law suggests that there is some kind of objective, ideal law to which people instinctively strive, although they cannot fully understand it. Depending on the views of those who advocate this thesis, the creator of that law is God or man's inherent sense of justice and the like. In any variant, the bottom line is that the rules of natural law can be compared to natural laws, so it is up to man to research, understand and apply them.

At the risk of being criticized from various sides, we must note that, at least within the framework of law, dealing with the so-called we do not see natural law as anything else but as a kind of fruitless philosophizing, intellectual distraction. At the same time, we do not deny that philosophy can deal with the problem of alleged natural law, as well as with similar abstract questions, such as the purpose of the existence of man and the world and the like. However, from the point of view of the law, and thus of international law, one cannot speak of any abstract law, the one that should supposedly be valid always and everywhere, although in fact, it has never been valid anywhere.

By its very definition, the law is a set of legally binding rules of conduct, norms that, in addition to disposition, also have a sanction. What is not precisely defined and protected as a law is not a law. In other words, we adhere to the positivist approach, according to which, in the simplest terms, those rules of conduct are legally binding only as long as they are legally binding. A legal custom is a law as long as it is respected, when it stops being a customary legal norm (*desuetudo*) it ceases to be a law; a law or an international agreement is the law while it is in force, when it ceases to be valid (due to the adoption of new such regulation, due to the expiration of its validity period, due to the disappearance of one of the parties to a bilateral agreement, etc.) if it ceases to be a law in the narrower sense, i.e. it becomes some kind of historical, once valid law.

It is objected to the positivist approach that it leads to the view that those norms or normative systems that are undemocratic, and perhaps even criminal, must be accepted as law. It's true.

Examples are the so-called racial laws that were adopted in Germany in the 1930s. But - wasn't that the law of Germany then? Was it not applied in practice? Wouldn't those who violate them be sanctioned? Although we will gladly agree that these were inhumane and even monstrous solutions, it was a matter of law, until it was repealed.

After all, what about the various legal codes from antiquity and the Middle Ages? They are often glorified, quite justifiably, and for many reasons. At the same time, it is forgotten that they are based on the division of society into free citizens and slaves, almost without exception foresee severe and even death sentences for things that today seem senseless (e.g. witchcraft), prescribe horrible ways of carrying out the death penalty, i.e. gruesome corporal punishment, etc.

It is clear that the law can be better or worse, it all depends on who judges it and according to what criteria. However, we believe that we should call things by their real names, separating their valuation as a separate problem. For example, taking a person's life is murder both when it is the act of a criminal, but also when it is carried out in self-defense, and when it involves the execution of the death penalty. Each of these situations is different, but only when we call them by a common name can we distinguish between them.

The fact is that no law in history has ever been ideal. We can talk about more or less „good“ or „bad“ law, with the fact that in the same legal order, and even in the same concrete act, one can find both things to praise and things to criticize. Looking at it from another angle, even if in some imaginary scenario, the law was perfect, if it was not applied in a prescribed way, it would be of no use, which would lead us to the question, is it then a law or just a wish list?

A particular problem with „natural“ law is that, even if it exists, it is impossible to know its norms objectively and completely. There is no indisputable list of rules, so let's find it and read it. And there cannot be such a list, because it is impossible to place all legal norms in one place. Even if all that were possible, it would be a problem of interpretation, because everyone would understand the respective rules as they see fit.

If in the search for the norms of alleged natural law one could talk about some kind of guide, it should most likely be the famous 10 commandments of God (Decalogue). This is because, as part of the Torah, the Old Testament, or the Koran, they are obligatory for a huge number of people - there are thought to be around 2.4 billion Christians, 1.9 billion Muslims, and 14.7 million members of Judaism in the world, which suggests that you mention the commandments are recognized by at least 4.3 billion people or about 56.2% of the total 7.8 billion inhabitants of the planet. When you add to that atheists and agnostics who have absorbed the mentioned rules through belonging to a relevant tradition, as well as members of other faiths who essentially support the rules in question, it turns out that if we can look for natural law somewhere at all, we should first look for it precisely among 10 commandments of God.

However, it turns out that even such a small number of simple and seemingly indisputable rules cause many doubts. First of all, it is easy to notice that the texts used in various religions are not absolutely the same in everything, although, as something that according to tradition comes directly from God, they should be identical.

In this sense, it is enough to compare the stylization of God's commandments in Judaism, the Orthodox Church, and the Catholic Church, which is very similar, but far from being the same. After all, even in the Orthodox Church, we find somewhat different texts. For example, on the website of the Serbian Orthodox Church 10th Command reads: „Do not covet anything that belongs to others!“,²⁹ while in the „Bible“, which is an edition of the same church, we find it as:

29 Десет Божијих заповести, Српска православна црква, http://www.spc.rs/sr/deset_bozjih_zapovesti).

„Do not covet your neighbor's house; you shall not covet your neighbor's wife, nor his manservant, nor his maidservant, nor his ox, nor his donkey, nor anything that is your neighbor's.“³⁰ A similar, though not identical, translation is also used in the Russian Orthodox Church.³¹ Therefore, the question is, which stylization most faithfully reflects God's or the so-called natural law?

Additionally, the prohibition to desire something belonging to another is of a general nature, while the mention of „neighbor“ raises the question of who exactly is meant. It is usually considered that it is about any other person, however, according to one interpretation, it is a prohibition against a Jew, as a member of the chosen nation, to desire a wife or any good of his compatriot, which does not concern his relationship with members of other nations (Goyim).³² In a somewhat broader understanding, that rule could be interpreted as saying that one must not covet a woman or something belonging to a member of the same community (not necessarily Jewish), which again does not mean that the prohibition also applies to members of another, foreign community. After all, if the rule was supposed to have the meaning given to it on the website of the Serbian Orthodox Church, it would have read as it was formulated („Do not covet anything that belongs to others!“), but for some reason it is not the case.

Although there are other problems, we will remind here only of Order no. 6 which reads: „Do not kill!“ Human and reasonable, it is completely inconsistent with what God ordered the Jews on various occasions - as a sanction for certain transgressions,³³ when dealing with those who wavered in their faith,³⁴ during Jewish conquests,³⁵ etc.

30 *Библија* (2007) прев. Даничић Ђура, Караџић Вук, Београд: Глас Цркве, „Стари завет“, Друга књига Мојсијева, Излазак, 20:17, стр. 64 (Book of Exodus, 20:17).

31 The difference is that the servant and maidservant are not mentioned, but the slave and the slave, which is apparently closer to the original text. In Russian: „Не желай дома ближнего твоего; не желай жены ближнего твоего, ни раба его, ни рабыни его, ни вола его, ни осла его, ничего, что у ближнего твоего.“ Синодальный перевод (1876) „Библия или книги Священного писания Ветхаго и Новаго Завета“, Санктпетербургъ, Исх. 20:17; Библия (2011) „Книги Священного писания Ветхого и Нового Завета“, Синодальный Текст, в редакции 22. 3. 2011, Исх. 20:17, стр. 67, <https://drive.google.com/file/d/1kQt e6zM6UBNkoMoTy46p3hLbeLpoz0ea/view>, 6. 6. 2022; Заповеди Божии, *Православие*, <https://pravoslavie.ru/104777.html>, 6. 6. 2022.

32 And indeed, in other places in the Old Testament, God asks the Jews to take by force from other peoples women, cattle, and generally all the booty they find.

33 „Whoever curses his father or his mother, let him be executed“, „Do not let a sorcerer live“, „Whoever has intercourse with a fowl, let him be executed“, „Whoever sacrifices to gods other than the only Lord, let him be exterminated as an accursed“, etc. *Библија* (2007) op. cit., Стари завет, „Друга књига Мојсијева“, Излазак, 21:12, 22:18-20, стр. 64-66 (Book of Exodus, 21:12).

34 When, returning to Mount Sinai, he saw that in the meantime the Jews had made a golden calf to which they offered sacrifices, Moses called the sons of Levi: „And he said to them: ‘Thus says the Lord, the God of Israel: gird each of your swords on your thigh, and pass over there and go through the camp from door to door, and kill every man his brother and his friend and his neighbor. And the sons of Levi did according to the commandment of Moses, and the death of the people that day amounted to three thousand people.“ *Библија* (2007) op. cit., Стари завет, „Друга књига Мојсијева“, Излазак, 32:27-28, стр. 77 (Book of Exodus, 32:27-28).

35 „When you come under a city to conquer it, first offer it peace. If they answers you with peace and open the door for you, let all the people who are in it pay you tribute and be obedient to

Although the reader, we hope, understands it himself, we will underline that by comparing the various versions of God's 10 commandments, that is, by mentioning other parts of the Old Testament, we did not deal in order to cast a stain on any nation, desecrate anything or offend anyone. The examples are given only because if there are various approaches regarding them, although the laws in question are received, as it is claimed, directly from God, the question arises as to how it can be expected that, even if there is some kind of ideal natural law, people are able to understand, experience and interpret it correctly.

This leads us to think that numerous abuses can be carried out precisely by invoking some kind of natural, absolute, inviolable law, which, however, can only be found and interpreted by a select few. And then, depending on the specific conditions, it can be argued that according to that law (which someone supposedly recognized and passed on to people), men should be above women, white people should rule over yellow and black people, slavery should be restored as a natural social order, that "it is natural" and therefore right to kill captured enemies, etc.

The idea of natural law arose in the past when it was perceived as God's law, as part of God's justice, and when references to it served to humanize the attitudes and behavior of believers, if for no other reason, then because of the expected reward or, on the contrary, punishment on another world. Faced with too much violence and injustice in everyday life, people searched for ways to make it better and more just.³⁶ And yet, claiming that they are doing it in the name of faith, the relevant rules were trampled on by numerous believers, for which it is enough to remember the terrible crimes committed in the Crusades, the conquest of Latin America, pogroms of Jews, etc.

In short, we believe that fundamental research in the science of international law cannot consist in the search for some kind of natural law, which, after all, everyone experiences in their own way. Such research would have no real basis and could not lead to any real result.

2.3.2. The problem of the relationship between international and domestic law

The relationship between international and domestic (internal) law is one of the issues that have been particularly frequently discussed in the science of international law. It is almost invariably presented in systematic works and

you. If they do not make peace with you but fight you, then beat them. And when the Lord your God delivers them into your hand, kill all the men in it with the sword. And women and children and livestock and whatever is in the city, all the spoil in it, take away and eat the spoil of your enemies, which the Lord your God gives you. Do the same with all the cities that are far from you and are not among the cities of these nations. And in the cities of these nations, which the Lord your God is giving you as an inheritance, do not leave a single soul alive. Rather, wipe them out completely..." *Библија* (2007) op. cit., Стари завет, „Пета књига Мојсијева“, 20:10-18, стр. 176 (The Fifth Book of Moses, called Deuteronomy, 20:10-18).

36 Hence, at that time, the institutions of God's judgment (proving the innocence of the accused by subjecting him to dangerous actions or through duels), God's peace and God's truce, ideas about just and unjust wars, etc.

textbooks of international law, and numerous articles, papers in scientific collections, etc. are dedicated to it. After all, even the author of these lines referred to him in his systematic works and even dedicated a special work to him, which was published in the form of two articles due to its considerable volumes.³⁷

The mentioned problem became one of the favorite topics not only of theorists of international law but also of representatives of legal science in general, especially since the 19th century when international law developed rapidly in various fields so that the conflict of norms of international and internal laws of states became more and more present. A basic question arose: if a relationship is simultaneously regulated by the norms of the internal law of the respective country and the norms of international law, which of those norms should be applied and why?

Given the multitude of works devoted to the subject, one might think that it has been exhausted and attracts less attention today. However, it is not so. First of all, for many, it is still a great field where they can show their well-readiness, wit, and talent for polemics, with the simultaneous feeling that they are dealing with something really important, which has both principled and alleged practical significance.³⁸

Therefore, theories appeared (monistic, dualistic, but also pluralistic, and others) which, shedding light from their angle, try to find a solution. However,

37 Krivokapić Boris (2013) „Odnos međunarodnog i unutrašnjeg prava“, *Strani pravni život*, No. 2, 59-103; Krivokapić Boris (2013) „Primat međunarodnog prava“, *Strani pravni život*, No. 3, 45-62.

38 The literature indicates that the theoretical importance of research on this issue is reflected in the fact that the essence of international law and its specificities as a special legal system can be better understood, and that research can contribute to a better understanding of the process of formation of international legal norms because they often intertwine there. elements of international and domestic law, while the practical significance is that specifying the relationship between international and domestic law gives the opportunity to more fully and accurately present the forms and ways of realizing the norms of international law in individual states and the ways to eliminate the problems that arise in doing so; that the problem of the relationship between international and internal law has, in addition to a distinctly theoretical, practical importance, because these two groups of rules are constantly intertwined, which is reflected in the daily tasks and international obligations of state representations in international relations (diplomatic and consular relations and the protection of the state and its citizens abroad), in the execution of international bilateral and multilateral agreements in connection with the internal law of the contracting states and their constitutional provisions, as well as with legal, judicial and financial institutions, and with the application of domestic civil and criminal law and appropriate procedures, and especially because of that that these issues are multiplied by the existence of the international community embodied in the OUN in connection with the decisions of its bodies and the activities of various regional organizations; that the relationship between international and domestic law is essential for many international legal issues and international legal institutes, but primarily for the application of international law in the domestic legal system; etc. Левин Д. Б. (1974) *Актуальные проблемы теории международного права*, Москва, 191; Đorđević Stevan (1997) „Odnos unutrašnjeg i međunarodnog prava“, *Analiza Pravnog fakulteta u Beogradu*, No. 4-6, 355; Đajić Sanja (2004) „Teorije o odnosu međunarodnog i unutrašnjeg prava“, *Godišnjak Udruženja za međunarodno pravo 2000-2003*, Beograd, 49.

not only is it mostly just a new interpretation of some of the well-known concepts, but all that theorizing is actually not even necessary. They are simply not able to offer a final, complete, and non-contradictory solution, and they cannot provide it even for reasons of principle, because they are dealing with the wrong problem.

After all, the fact is that debates on the relationship between international and domestic law, although they have lasted for more than 120 years, have failed to produce any tangible practical results, but have been reduced to mere outwitting of legal theorists. In this sense, we have to agree with those who consider that the controversy between monism and dualism as the basic theories confronting each other in this matter, represents a dispute of the scholastic type, a futile and laborious work, which darkens things more than it illuminates them. One of the authors who, contrary to the prevailing tendency, more than half a century ago found the courage to express such a radical position, accused the supporters of both of the aforementioned currents of not respecting reality and misrepresenting things and assessed that it was actually a conflict between two political conceptions, the first of which advocates increasing the authority of international law over internal law, while the second, on the contrary, tends to preserve the sovereignty of states by affirming the independence of their internal law. In this regard, he recommended that the aforementioned concepts clash directly and concretely, and not resort to the interpretation of complex legal theories through them.³⁹

In other words, we support the opinion that the problem of the relationship between international and domestic law is actually just a reflection of another dispute - about whether and to what extent states are sovereign or to what extent their sovereignty is subordinated to international law. The original starting point on that issue also affects the position on the relationship between international and internal law. Thus, if we limit ourselves to two basic conceptions since the state is a sovereign entity, this means for dualists that the only way for it to be subject to international legal obligations is for it to voluntarily accept them, while, on the contrary, supporters of the position of the primacy of international law proceed from that certain norms of international law bind the state even independently of its consent.

To conclude, we believe that it is much more correct to shift the focus of the discussion to the issue of state sovereignty, both in principle and in various time periods - past, present, and future. All the more so since it is a very interesting problem. The answers that are offered in connection with it will reflect in themselves on other disputed situations, and thus on how the relationship between international and domestic law will be observed.⁴⁰

39 Giraud E.: *Le droit international public at la politique, Recueil des cours*, 1963, 110, pp. 556-560. Quoted accordig to Đorđević Stevan (1997) op. cit., 373.

40 On the problem of sovereignty: Kingsbury Benedict (1998) „Sovereignty and Inequality“, *European Journal of International Law*, No. 4, 599-625; Hinsli Frensis Henri (2001) *Suverenost*, Beograd; Jackson J. H. (2003) „Sovereignty – Modern: A new Approach to an Outdated

All that said, this does not mean that we are calling for a complete end to consideration of the relationship between international and internal law. It is neither possible to prevent the authors from dealing with it, nor can the issue be reduced only to the problem of the primacy of one of these two legal orders over the other. It is far more complex and includes various forms of mutual influence and connection. Therefore, there is room for new insights.

All we wanted to say here is that, contrary to what could be heard from other parties, in our opinion, this issue has no potential for what we have in mind when we talk about fundamental research in the field of international law science.

2.4. Problems that deserve to be the subject of fundamental research

There are many problems that deserve to be the subject of fundamental research in the field of science of international law. Some of them are such that the most optimal results could be achieved if representatives of other legal sciences, certain other social sciences, and even, in some cases, natural and other sciences were also included in the research. Others, by their nature and a series of peculiarities, are specific exclusively or primarily for the field of international law, which means that they belong exclusively or dominantly to the field dealt with by the science of international law.

We will cite several examples of both types, i.e. fundamental researches in which the science of international law is only one among the various engaged scientific disciplines and those basic researches that in principle remain within the scope of the science of international law.

2.4.1. Multidisciplinary Approaches

Here, the subject of research is viewed from the point of view of several sciences, with the aim of reaching comprehensive results. It can be more broadly or narrowly defined, but it is important to deal with international legal norms, institutes, and relationships that are closely related to special phenomena, processes, and relationships that are the subject of study of some other science.

It goes without saying that an international law expert who deals with a certain issue must have sufficiently extensive and deep knowledge about many things. For example, one who deals with the law of the sea would have to master a multitude of questions concerning the sea and the ocean, the benefits they provide, elementary matters in the domain of nautical, etc.; one who deals with space law would have to have at least elementary knowledge about space, the

Concept", *American Journal of International Law*, No. 4, 782-802; Bartelson Jens (2006) „The Concept of Sovereignty Revisited“, *European Journal of International Law*, No. 2, 463-474; Cohen Jean L. (2010) „Sovereignty in the Context of Globalization: A Constitutional Pluralist Perspective“, in: Samantha Besson, Tasioulas John (eds.): *The Philosophy of International Law*, Oxford, pp. 261- 280; Krivokapić Boris (2019) „Državna suverenost i međunarodno pravo u eri globalizacije“, u: A. Kostić (ur.), *Državni poredak: suverenitet u vremenu globalizacije*, Beograd: Srpska akademija nauka i umetnosti, 355-392.

Karman line, space navigation, low and high orbit, the Van Allen belt, space debris, etc.; someone who is an expert in war and humanitarian law must have sufficient knowledge in the domain of history, but also military science, weapons, military techniques, etc. In short, in such cases, the representative of the science of international law must have a sufficiently solid base beyond its borders.

However, when it comes to truly fundamental research in the respective subjects, it is still best that they are dealt with by combined teams, composed of experts in international law but also scientists of different profiles, that is, when it comes to research that focuses on other subjects, then in addition to experts for them, also from scientists who specialize in the relevant field of international law. We will show it best with examples. Some of them concern, conditionally speaking, abstract subjects of research, phenomena, and processes that are not directly related to concrete reality (fundamental research in the narrower sense), while others, on the contrary, refer to precisely determined questions that have a clear connection with real life.

An example of the first type is the sovereignty of states. It is an eternal problem, which will exist as long as the states themselves. Although it is particularly relevant in our time of heated globalization, it can also be followed in a historical perspective, as well as from the point of view of the options that tomorrow brings us. Also, with the principled abstract observations characteristic of conventionally speaking philosophical views of the world, it is closely connected with what happens in reality. It already allows for different approaches. In this sense, although the issue of state sovereignty undoubtedly has a pronounced international legal dimension, the best results would be achieved if, in addition to international lawyers, experts in the theory of the state and law, philosophers, historians, but also, why not, futurologists also participated in the joint project.

An example of research related to a specific problem would be e.g. research into the armed conflict currently taking place in Ukraine. It is very interesting from the point of view of international law because it raises the question of its character and qualification (so-called special operation or a type of war) and especially of international legal permissibility (aggression as a violation of international law and an international crime or preventive self-defense as an exceptionally but permissible use of force in international relations) and determination of committed war and other crimes and punishment of responsible persons. However, for its complete understanding, the participation of historians (because what is happening has a deep historical background, without which it cannot be understood), experts in international relations and security (to study the conditions in which the conflict broke out, the course of events that led to it and the immediate and long-term consequences in the field of relations in the international community), economists (to look at the economic dimension of the conflict, the extent and type of war damage, but also the effect of the sanctions that the USA and its allies imposed on Russia on that country, themselves countries that introduced these measures, and even to the whole world), experts in the domain of military science (to analyze military operations, the way in

which they were carried out and achieved results), psychologists (to study the impact of conflict on the psyche of fighters and civilians, but also the dramatic change in the minds of part of the population of Ukraine in just a few years preceding the conflict), ecologists (to determine the damage to nature that is a consequence of the conflict and propose ways of rehabilitation), experts in the field of studies in media (to analyze the behavior and influence of mass media), etc. In such a case, it would be fundamental research, with the participation of a large number of scientific workers of different profiles, which would enable the relevant phenomenon to be analyzed from various angles, with the aim of gathering all relevant information and conclusions in one place and at the same time pointing out the connections and laws that cannot be seen in research that has only one dimension. The practical benefit would be that the results of the research could be used to calm the situation and build mutual trust when the conflict ends (because if the real cause or course of events were objectively determined, it would be easier to find ways to achieve positive development) and purely scientific reflections would be that the model would be studied, which would allow drawing general conclusions that could be useful in similar situations. Another question is whether anyone (UN, OSCE, states, scientific institutions, etc.) feels the need for such multidisciplinary research and, in particular, who would be willing to organize and finance it. Practice teaches us that in such cases everything usually ends with the individual involvement of researchers who, each in their own domain, deal with certain aspects close to them in the form of monographs and articles in scientific journals, or formally established team research (scientific projects) even when they occur, are performed from the point of view of only one scientific discipline.

2.4.2. Fundamental Research within the Framework of the Science of international law

All that has been said, of course, does not mean that fundamental research is not possible within the narrow framework of the science of international law itself. In this regard, we will try to identify several problems that, in our opinion, deserve such research, bearing in mind the needs of the Republic of Serbia.

First of all, it is quite possible that some researches are justified and even necessary for certain, though not for all, countries. Everything related to the international law of the sea is of special interest for coastal (maritime) countries, but it is of lesser importance for non-coastal, continental countries, such as Serbia. The study of space and space law is important for everyone, but still primarily for the so-called cosmic forces.⁴¹ It is hard to believe that it is at the top of the priorities of a small country in the Pacific, which, on the contrary, may have a very pronounced interest in research in the field of environmental protection, fisheries, tourism, etc., and, within those frameworks, the study of international legal regulation, special ways and procedures for solving specific international disputes, etc.

41 States that have launched an artificial satellite or another space object on their own.

We will dwell on some of the problems that, in our opinion, could deserve the attention of the scientific community of Serbia, as well as the competent state authorities, both in terms of focusing on those issues, as well as financing related research, planned training of young scientists specialized in those matters, and the like. Those moments coincide to some extent with what we marked in one paper as perspectives of international law,⁴² but not only is the coincidence only partial, but the very view of those phenomena and processes is given from completely different positions.

2.4.2.1. The system of international law and its processes. - The ways in which international relations are regulated by international law are usually studied or, viewed from another angle, the norms, institutes, and mechanisms of international law related to a precisely defined issue are investigated. However, international law is an independent, rounded legal system, which means that there is a theoretical interest in monitoring and analyzing that system and its processes. Such research can be the basis of applied research with important practical importance, especially for competent state authorities, and especially those among them who represent the state in international relations.

In principle, the research of the international law system could include such problems as the sources or subjects of international law, but we believe that these issues are so important, complex, and branched, that they deserve special research dedicated only to them.

What then could be the subject of fundamental research in terms of processes in the system of international law? We will be free to point out only some moments that we have touched on in one paper,⁴³ with the fact that we are aware that this review is insufficient and that it is necessary to investigate it all much more fully and carefully.

We mean such phenomena as globalization, internationalization and regionalization. In short, globalization is the name for the process of spreading ideas, value judgments, a certain way of life and the like to the whole world, implying in particular the connection of production and financial activities with the ever-increasing integration of markets, goods and capital, but also in general all kinds of connection of the world and its transformation into one society („global village“) with the gradual disappearance of states as superseded social forms. Internationalization also represents the connection of the world, but in a certain sense it is the opposite of globalization because it means the development of international cooperation and international institutions, but with the preservation of the basically unchanged role of states and, especially, their sovereignty. At the same time, regionalization is getting stronger, which means all kinds of linking of states and peoples belonging to the same geographical areas, which is so pronounced in our time that many people even wonder if the fate of the world is not exactly in regionalization.

42 Кривокапић Борис (2021) „Перспективе међународног права“, у: С. Стјепановић, Р. В. Лукић, Д. Ђеранић (ур.), *Изазови правном систему*, Том 1, Источно Сарајево, 18-47.

43 Кривокапић Борис (2021) „Перспективе међународног права“, *op. cit.*, 18-47.

In addition to the mentioned processes, there is also fragmentation or pluralization of international law, as its crushing or chopping is called. It has three basic dimensions: 1) since the international community has no supreme legislator, legislative treaties, which are the most important sources of international law, tend to develop as various historical, functional and regional groups, which then creates the need to resolve the discrepancy between these various regimes; 2) specialization in the development of special branches of international law, each of which has its own principles and institutes, raises the question of their harmonization with the norms and institutes of neighboring fields and the principles and practice of general international law and 3) the effect of the above-mentioned phenomena further enhances the growth of a large number of specialized international bodies, especially the increasing number of international courts, between which there are no structural relations nor are they part of any established system, which opens up the problem of conflicts between their jurisdictions or the possibility of entrusting a dispute or other case to several courts or other specialized bodies (eg so-called treaty bodies for human rights), with the fact that even the application of the same norms by different courts may lead to different consequences.

The mentioned processes run in parallel, partly complement each other, and partly oppose each other. What we are interested in here is the fact that all of them need to be carefully studied, processed from a theoretical aspect, and then in a way that would be useful to the competent authorities of the Republic of Serbia when making relevant decisions and plans. Because, only with the most complete understanding of the mentioned phenomena, they can be influenced to a certain extent (within the framework available to our country), that is, responses to the upcoming challenges can be prepared in advance.

2.4.2.2. Sources of International Law. - Although it can be said that this is a problem that has been dealt with so much and in detail in the scientific literature that nothing new can be said about it, such reasoning would be completely wrong.

First of all, it is about matter, which is the basis of everything. All international law exists only because we have the relevant legal sources in which it is contained. At the same time, the relations between these sources are far more complicated than between the sources of the internal (national) law of states.

Let us remind that the international community or international law does not have a supreme legislator, so there are no constitutions, laws, and by-laws, and especially there is no clearly established hierarchy between the relevant legal sources, which is characteristic of internal legal systems.

On the other hand, there are many sources of international law specific to it, such as international treaties, international legal customs, general legal principles, auxiliary sources (jurisprudence and doctrine), and decisions of international organizations. Within a very narrow framework, the sources of international law exceptionally include unilateral acts of states (their regulations), but only when it is in accordance with the relevant norms of international law.⁴⁴

44 Krivokapić Boris (2017)¹, op. cit., 125-185.

Although usually single out the so-called main sources of international law (treaties, customary legal rules, and general legal principles), given that general legal principles have only a subsidiary role (their application comes into consideration only if there are no relevant treaties or customs), the impression is that it is more correct to talk about *the most important* and *other sources of international law*, with the fact that only international treaties and international legal customs could be considered the most important in our time.⁴⁵ However, that is only the tip of the iceberg.

Things become more interesting when one takes into account the mutual relationship between the most important sources of international law - treaties and customs. Although for many reasons (they are more modern, more precise, it is much easier to prove their content, etc.) in practice international agreements usually have priority, it turns out that this is not an absolute rule, because in some cases international legal customs have greater legal force.

Everything becomes even more complicated when it is known that it is living matter, subject to change. Although they are not mentioned in art. 38/1 of the Statute of the International Court of Justice, which enumerates the legal sources that the Court applies in resolving international disputes, the decisions of international organizations, or at least some of them are undoubtedly sources of international law. At the same time, along with the processes of various integrations that characterize the world we live in and which can be expected to gain more and more intensity, it is logical to believe that the importance of the decisions of the highest authorities of the most important international organizations will also increase.

In short, the impression is that this is an eternal topic, because all the changes in the international community will reflect on the sources of international law, changing the specific importance and role of many of them, as will, for their part, all the changes concerning the mentioned sources, and especially the norms contained in them, mean the further development of international law.

In the previous considerations, we had in mind only the so-called formal sources of international law, i.e. legal rules that were created in the manner prescribed by international law and contain internationally binding rules of conduct.

The problem of the so-called material sources of international law, under which social facts (a set of various reasons, causes, and phenomena) are taken into account, which led to the emergence of a certain norm or sets of norms of international law. Everyone sees them in their own way, with the most frequently mentioned being: God's will, human reason, innate sense of justice and conscience, concrete needs and interests of states, demands of international communication,

45 Кривокапич Борис (2018) „Важнейшие источники международного права и их иерархическое взаимоотношение“, Часть 1, *Юридический вестник Самарского университета*, No. 4, 128-132; Кривокапич Борис (2019) „Важнейшие источники международного права и их иерархическое взаимоотношение“, Часть 2, *Юридический вестник Самарского университета*, No. 1, 71-79.

class struggle, general interest, etc. These understandings, especially those among them that see the mentioned sources in some kind of ideal law (which originates from God, man's inherent sense of good and evil, and the like) are close to ideas about natural law, so we remain with what has already been said about it. However, whatever one considers the material source of international law, it is about theoretical speculations that essentially go beyond the scope of the science of international law and are the subject of study by other scientific disciplines such as general legal philosophy, sociology, theory of international relations, etc. Therefore, just as we are convinced that the formal sources of international law deserve fundamental research, we also believe that, at least from the point of view of the science of international law, the same cannot be said for the study of the so-called material sources of that law.

2.4.2.3. Subjects of international law. - While the subjects of internal state law have long been known and essentially unchanged (natural persons, legal entities and state bodies), the subjects of international law developed in parallel with the development of that normative system. For a long time, the only subjects of that order were states, which is why international law itself is often defined as interstate. It hasn't been like that for a long time.

Although, of course, different approaches are possible, we believe that in our time we can talk about the following subjects of international law: 1) states; 2) quasi-states - apparent states (personal union and confederation), incomplete states (unfinished and „failed“ state), dependent territories, federal, autonomous and similar units, insurgents and liberation movements, territories under international administration; 3) international organizations; 4) quasi-international organizations - communities of states, international courts, treaty bodies, cross-border non-governmental organizations and associations (international non-governmental organizations and transnational companies); 5) subjects *sui generis* - those which, due to historical, political and other reasons, have been recognized as subjects under international law (Holy See, Order of Knights of Malta); 6) individuals, groups and humanity.⁴⁶

This area requires constant and in-depth research for many reasons: due to the need to define the concept of the subject of international law as precisely as possible, due to the necessity of a complete and transparent classification of subjects of international law, due to fundamental important issues that are closely related to the subjectivity of some of them (e.g. the problem of sovereignty, the problem of the perspective of the UN and other international organizations), due to the fact that changes are still taking place in the sense that certain subjects (e.g. transnational companies) are gaining an increasing role and importance, etc.

Much will be due to the development of events. For example, some expect the states to give way to some kind of super-state, a world federation; others think that instead of states, large regional creations, states-continent, will appear;

46 About subject of International Law: Krivokapić Boris (2017) op. cit. 255-518.

while others, on the contrary, believe that the role of the states we have today (the so-called territorial states) will gradually be taken over by megapolises, „city-states“.

In any variant, it will have an impact on international law and its solutions, and thus on the international legal position of each specific state. We believe that this is a sufficient reason to study these phenomena, to consider various scenarios and the like. The mentioned questions are also dealt with in the science of international law, but it seems to be sporadic.⁴⁷ However, we stand for fundamental research, in the narrow sense, that is. for planned institutionalized or formalized scientific projects in which entire teams of experts on particular issues participate.

2.4.2.4. Related areas and narrower problems. - In addition to general, comprehensive, fundamental research in international law can also concern narrower frameworks, in the sense that they are dedicated to a certain area of international law or even a narrower issue.

For example, it would be desirable to comprehensively and in-depth research, analyze and critically evaluate such areas of international law as: the law of international organizations (international institutions), international human rights law, international criminal law, international judiciary, contemporary international law of armed conflicts (war and humanitarian law), international environmental law (ecological law), space law, relations in and related to cyberspace, relations related to artificial intelligence, etc.

Fundamental research is also possible within the mentioned areas. Thus, within the framework of the matter of international human rights law, this applies to the study of all aspects, which means international law, but to some extent also comparative law regulations and the actual situation, the most important problems, perspectives, etc. concerning children, women, refugees, and internally displaced persons, ethnic (national) minorities, indigenous peoples, old people, migrant workers, etc. In the domain of the law of armed conflicts, fundamental research should cover the concept of war, the historical part, the existing international legal regulation including the rules on the prohibition of certain means and methods of warfare and the position of certain categories of persons, the effect of war and the state of war on international relations, the real significance of some of the earlier known institutes (neutrality, military necessity, Martens Clause, etc.), a series of new moments such as the characteristics of modern wars, the role and legal position of terrorists and terrorist organizations as participants in armed conflict, issues related to the emergence and functioning of private military companies and legal the status of their personnel, the problem of responsibility for war and other crimes of members

47 We dealt with related problems in a series of papers, among which in: Krivokapić Boris (2017) *Međunarodno javno pravo*, op. cit., 255-518. Krivokapić Boris (2013) „O ulozi i perspektivi Ujedinjenih nacija u XXI veku“, u: S. Nogo (ur.) *Pravo i izazovi XXI vijeka, II*, Brčko, 29-46; Krivokapić Boris (2017) „Multinacionalne (transnacionalne) kompanije kao subjekti međunarodnog javnog prava“, *Godišnjak Fakulteta pravnih nauka*, No. 7, 110-127 etc.

of the international armed forces, new means of warfare (long-range sniper rifles, drones, tactical nuclear weapons, automatic systems, systems controlled by artificial intelligence, etc.), new methods of warfare (eg. such methods in cyberspace, or in outer space) etc.

In this regard, it could be objected that such research has already been carried out many times and that there are many works in which the mentioned areas or the most important problems within them are dealt with in a comprehensive and sufficiently in-depth manner. That is not in dispute. There are acts that could rightly be called capital. Moreover, over time, an impressive number of such works have been collected in various places. However, as we have already pointed out, by fundamental research in the narrower sense we mean something else.

In order to be completely specific, we will cite an example of fundamental research that was designed and whose leader should have been the signatory of these lines. The organizer (holder) of this project was supposed to be a reputable state scientific institute from Belgrade and 64 prominent researchers confirmed they were willing to participate. These were carefully selected specialists for precisely defined issues. They were from as many as 36 institutions (academies, faculties, and scientific institutes) from 12 states. In alphabetical order, from Armenia, Belarus, Bosnia and Herzegovina, Croatia, Italy, Montenegro, Poland, Russia, Serbia, Switzerland, United Kingdom, and the USA.

The project, whose name was „International Criminal Offenses“, was supposed to have four parts, divided into separate chapters and, within them, sections dedicated to specific problems, and it was supposed to be published in the form of a three-volume monograph. The first part of the project would deal with the concept, elements, forms of execution, characteristics and classification of international crimes and responsibility for international crimes; the second would be dedicated to the most serious international crimes (crime of aggression, war crimes, crimes against humanity, genocide); the third would deal with other international criminal acts, such as such acts against security (terrorism, hostage-taking, terrorist financing, illegal arms trade, etc.), acts against foreign states and international organizations and persons representing them (acts against persons under international protection, acts against the UN and its staff, corruption), acts against life and physical and mental integrity of persons and human rights (enforced disappearances, torture, racial and other discrimination, slavery, human trafficking, hate speech, organ trafficking), acts against health and social morals (violence against women, domestic violence, drug trafficking, acts related to the violation of human rights in the field of biomedicine, distribution of pornography), acts against the environment, acts against international traffic (piracy and other acts at sea and related to by sea, acts related to maritime law, acts against the safety of civil aviation, acts related to road traffic), acts against economic relations and property (forgery of money and securities, money laundering, unauthorized use of someone else's business name and other business designations of goods or services, etc.), acts of high-tech

crime including Internet fraud, acts against cultural and historical assets and monuments, acts against the international judiciary, acts related to sports, joint criminal enterprise as an international crime, etc.; while the fourth part would refer to international criminal acts in comparative law on the example of six selected countries

The subject of research has been carefully thought out so that it has indisputable theoretical and practical importance. The need for this project was also felt due to the fact that in practice international criminal acts are usually identified with only four commonly known crimes (aggression, war crimes, crimes against humanity, genocide). In addition, the problems covered by this research are complex and have a historical dimension, but they are also in the process of constant development. Finally, research like this is not known to have ever been conducted anywhere in the world.

Although all the previous steps had been completed (including drafting the synopsis, dividing the topics so that each would be covered by an actual expert on it, and obtaining the consent of each intended researcher), after several months of preparatory work, the director of the institute that was supposed to be the holder of the project informed the project manager that the institute was withdrawing from the project. The reason was certain problems within the mentioned institute, which is not important here because the project was mentioned only as an example of (unrealized) really fundamental research in the science of international law.⁴⁸

Returning to the principle considerations, we believe that fundamental research in the matter of international law can be conceived and realized in three basic ways.

They can be carried out from the point of view of general, universal international law, which means taking into account the highest standards in international law, as well as the objectively existing needs of the broader or narrower international community. This is something that goes without saying.

However, it is also possible to approach from the position of a specific state and its subjective international law.⁴⁹ From the point of view of each country, it is interesting to research that would include the most important treaties that bind that country, point out the importance of general international legal customs, analyze the problems that arise in practice, suggest with arguments that that country should become a member of certain international agreements,

48 By the way, while we are writing this, negotiations are underway regarding a somewhat less ambitious international project on the same topic, with the participation of researchers from a dozen countries.

49 A distinction is made between general international law as that part of international law that is the same for everyone, which consists primarily of universal customary legal rules, and subjective international law, as only that part of international law that applies to a given state. Subjective international law differs from country to country because the most important sources of international law are treaties, and each country decides for itself which of them it wants to join. Even the treaty that codified important matters is only binding on the states that have ratified it.

study the question of that country's membership in certain international organizations, etc. In most cases, this type of research would have elements of not only fundamental but also applied research.

Finally, it is also possible that a scientific research project, especially if it is large enough, represents some kind of combination of the two mentioned approaches.

CONCLUSION

The science of international law has a very long history. During its greatest part, it was in the hands of learned individuals who independently studied the norms of international law, practices, and works of distinguished authors and published their own works on that basis, advising governments and the like.

This had certain advantages, but also disadvantages. An advantage in the sense that prominent theoreticians went public with a well-rounded view, including with their systemic works more or less the entire system of international law that existed at a given moment. The weakness was that no one can be a sufficient expert not only for all issues but also for all areas of international law. If he is really an expert in international law, and especially if he is a university professor who teaches that subject, he must master all its branches, which is not in dispute. However, having basic knowledge is one thing, and deepened scientific insight is another. It requires specialization.

This is particularly characteristic of our time, which offers exceptional opportunities, but at the same time raises expectations to a new height. We can use an understandable example related to medicine - in the past, the doctor was without the aids that are taken for granted today (without a team of collaborators, a laboratory, a scanner, a laser, etc.) but simple interventions were expected from him, incomparable to what we see in our time. When medicine experienced unprecedented development, but new and new demands are placed before it.

The same could be said for the science of international law, in which there are also specializations that are a condition for achieving serious results. We will show it with an example.

An important part of international law is international human rights law, so anyone who professionally deals with international law should have at least basic knowledge in that area. However, within it, there are special matters and problems with their own specificities. For example, the one who wants to deal with the rights of ethnic (national) minorities, must put in a lot of effort in order to acquire a sufficient level of knowledge in terms of both knowledge of international law and, where necessary, comparative law regulations, as well as the study of judicial practice and that part of the science of international law that deals with all of this. However, that is not all. Really in-depth research concerns only part of the mentioned frameworks, so e.g. they can investigate the rights and position of ethnic minorities in education, or in the domain of language use

(private, public, and official); etc. In short, fundamental research implies that each researcher is maximally professional and follows the latest developments.

In addition, in our time, international law has developed unusually much and continues to develop day by day. Fundamental research should include not only the identification, interpretation and explanation of relevant international legal norms, but also their reasoned criticism, i.e. a critical review of their application, proposing new, different solutions, etc., all based on sufficiently good knowledge of the relevant practices of states and international organizations, and especially the practices of international and, when justified, national courts, and, of course, scientific literature. Within these frameworks, fundamental and applied research can easily overlap.

Indeed, the described research is not only interesting from a theoretical point of view, from the point of view of the science of international law, but should also have an important impact on practice. After all, the Statute of the International Court of Justice in Art. 38/1/d as the so-called auxiliary source of international law also mentions “teachings of the most renowned experts in the public law of various nations”. Therefore, he foresees that the Court, which is not only the main legal body of the UN but also the most important international court in entire history, can, when the need arises, rely on the doctrine. Although it is not specified what is meant by the mentioned „teachings“, priority should be given to the results of fundamental research, especially those in which a large number of distinguished specialists from various countries participated.

We find confirmation of this in practice. Although there are other examples, especially those related to the work of expert bodies of international organizations, as a concrete case of fundamental research we can cite a study that was prepared by a team of experts for the needs of the UN, after many years of work, with the special rapporteur of the Subcommission for the Prevention of Discrimination and the Protection of Minorities, the Italian professor Capotorti.⁵⁰ Although it did not answer all the questions, the study, which included international law at the time and the law and practice of many countries, significantly influenced the understanding and improvement of the position of national minorities. In a situation where these minorities were not defined in universal international legal documents (not even today), the study offered a proposal for their definition. This is an important moment because even if a sufficiently extensive and high-quality “catalog” of minority rights is foreseen, it is of relative importance if it is disputed who these rights belong to. Therefore, although the aforementioned study could have been more substantial, and although the definition of a national minority formulated by it was criticized and was not incorporated into any document of general international law, the fact remains that even today, almost half a century later, any serious theoretical consideration of the problem of national minorities starts with that definition.

To conclude, like everything else, fundamental scientific research in international law can be understood in various ways. We see them as serious

50 Capotorti Francesco (1979) *Study on the Rights of Persons belonging to Ethnic, Religious and Linguistic Minorities*, New York: United Nations.

scientific projects that are the result of a well-chosen topic and a carefully thought-out division of tasks, which last long enough and at the same time are sufficiently extensive and detailed enough, and are the work of a research team of experts for certain issues that are included in the subject of research. Understood in this way, these investigations increasingly resemble what is present in the natural sciences.

And indeed, without in any way calling into question the importance of the independent works of exceptional individuals, the fact is that in modern conditions of an increasingly fast pace of life, only teams of narrow specialists can design and conduct research quickly enough and offer really high-quality results. Also, as the work of a large number of experts, especially when they are from different countries, such results have a greater chance of being noticed, influence the development of the science of international law, and have at least an indirect impact on practice, both in terms of contributing to the creation of new international norms and in terms of influencing the prevention of international disputes, that is, where they did occur, facilitating their resolution through diplomatic means and before international courts and arbitrations.

This, in brief, is their possible importance for the progress of the global community and the prosperous development of modern states. However, the science of international law alone cannot create a new, better international law, as neither it, nor international law, no matter how good it is, can by itself ensure the aforementioned progress. This is because the final decisions and practical steps are in the domain of politics ie. lie in the hands of the states.⁵¹

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51 As if, for example, medicine looked for solutions that would allow the discovery of an important drug and found that drug, but then the authorities would not understand its production and distribution or would even ban them for some reason. In that case, the justification of the research and its result would remain indisputable, but we would have to wait for a better time, for a more reasonable government. A similar thing sometimes happens in international relations, in connection with international law.

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Борис Ђ. КРИВОКАПИЋ

ФУНДАМЕНТАЛНА ИСТРАЖИВАЊА У НАУЦИ МЕЂУНАРОДНОГ ПРАВА

Резиме

Након осврта на то шта је међународно право, рад указује на специфичности правне науке и, посебно, науке међународног права. Ослањајући се на своје уско виђење фундаменталних истраживања у домену те науке у смислу да њима сматра само напоре тима истраживача у склопу планског научноистраживачког пројекта, аутор се бави начелним проблемом фундаменталних истраживања у међународном праву, истраживањима која по његовом мишљењу нису фундаментална премда тако изгледају и конкретним питањима која могу бити предмет фундаменталних истраживања. У закључним разматањима он истиче да у савременим условима само тимови уских специјалиста могу довољно брзо спровести фундаментално истраживање и понудити заиста квалитетне резултате, те да као дело већег броја стручњака, посебно онда када су они из неколико држава, такви резултати имају много већу шансу да буду примећени, допринесу развоју науке међународног права и макар посредно утичу на праксу, посебно у смислу доприноса стварању нових норми међународног права и утицаја на спречавање настанка међународних спорова одн. тамо где је до њих ипак дошло, олакшавања њиховог решавања путем дипломатских средстава и пред међународним судовима. У томе је и могући значај тих истраживања за напредак глобалне заједнице и просперитетни развој држава. Међутим, сама наука међународног права не може створити ново, боље међународно право, као што ни она, ни међународно право, ма како квалитетно било, не могу сами по себи обезбедити напредак. Ово зато што се коначне одлуке и практични кораци налазе у домену политике тј. леже у рукама држава.

Кључне речи: међународно право, фундаментална научна истраживања, правна наука, друштвене науке.

*Nevad H. KAHTERAN**

University of Sarajevo, Faculty of Philosophy, Bosnia and Hercegovina

PROMOTING COMPARATIVE PHILOSOPHY AS A GENERAL CROSS-TRADITION ENGAGING WAY OF DOING PHILOSOPHY TOWARD WORLD PHILOSOPHY

Our International Society for Comparative Philosophy toward World Philosophy („CPWP” for short: <www.cpwponline.org>), emphasizes (but is not limited to) the constructive engagement of distinct approaches and resources from different philosophical traditions (whether distinguished culturally or by style/orientation) or from (ancient) philosophical tradition and contemporary scholarship (philosophy or other intellectual pursuits): inquire into how they can talk to and learn from each other and make joint contributions to the contemporary development of philosophy through treating a range of (perennial, existing or newly identified) issues of philosophical value and significance that can be jointly concerned and approached via appropriate philosophical interpretation and from a higher and/or broader philosophical vantage point toward world philosophy and for the sake of contemporary development of philosophy and society. Problems of cross-tradition philosophy with its methods and approaches, namely the comparative approach with advantages and shortcomings of these comparative perspectives taking into account that they belong to the Euro-American methodological tradition as a product of the European intellectual history and the corresponding socialization processes vs. non-Western discourses, which belong to a different referential framework and eo ipso they are resulting in different methodological procedures, our philosophers-comparativists are placing into a broader cross-cultural context.

Also, the very process of comparing different philosophies as such is necessarily linked to numerous methodological problems especially when dealing with transcultural philosophical comparisons connected to intercultural philosophical vocabularies, and this issue is above all connected with predominantly Western-centric methodology and its axiological presumptions. Actually, dealing with the perspective(s) of different referential frameworks in the framework which prevailed in the course of European intellectual history, this paper is quest for upgrading and changing the existing methodological procedures on the basis of available literature.

* Full Professor, nevad.kahteran@ff.unsa.ba

This 'constructive-engagement strategy' or 'constructive-engagement account' has been pointedly focused on in a recent international virtual conference (19-23 April 2022) coorganized by our journal and the CPWP and co-sponsored and hosted by the SJSU Center for Comparative Philosophy.

Key words: cross-cultural philosophizing vs. doing comparative philosophy, the comparison paradox, a cross-cultural perspective as a new theoretical methodology with its comparative method, and cross-cultural philosophical comparison.

Dedicated to the memory of A. Šarčević and X. Zhang

1. INTRODUCTION

Two In memoriams were published in the just-released issue of the Journal of Comparative Philosophy.¹ One is dedicated to professor Abdulah Šarčević² and I am the author of the same, and the other to Xianglong Zhang³, both of them as jun-zi (君子 noble persons, philosophical bards), and I am glad that this is the case especially because they are in a certain way connected with what they witnessed with their lives and especially with their works. Professor Šarčević is the person who introduced Eastern philosophical traditions into the curricula of our Department of Philosophy FF UNSA and Professor Zhang from Peking University, is one of the founders of our International Society of Comparativist Philosophers (CPWP)⁴ and a member of the editorial board of the magazine. Moreover, both were focused on the continental, especially German, philosophical tradition, and both made visible breakthroughs in the Anglo-Saxon model of thought, bridging analytical and "continental" philosophy within the Western tradition and making them complementary to each other from a favorable position of constructive engagement, as we comparativist philosophers call it in comparative philosophy.

Therefore, let us begin with the paradox of comparison itself, which Zhang wrote about.⁵ Moreover, in 2008, Xianglong successfully organized the ISCPW Conference on the Methodology of Comparative Philosophy at Peking University. His representative essay on the methodology of comparative philosophy appeared in a revised English version under the title: "Comparison Paradox, Comparative Situation and Interparadigmaticity: A Methodological Reflection

1 July 2022 issue (vol 13 no 2) magazine *Comparative Philosophy*: <<http://www.comparativephilosophy.org/>>.

2 See: <<https://www.unsa.ba/en/novosti/abdulah-sarcevic-winner-world-award-humanism-2021>>; <<https://www.ohrid-academy.org/news/academician-abdulah-sarcevic-recipient-of-the-world-prize-of-humanism-2021>>.

3 See: <<https://www.sacpweb.org/obituary-zhang-xianglong/>>.

4 See: <www.cpwponline.org>.

5 Zhang, Xianglong (2010) „Comparison paradox, comparative situation and inter-paradigmaticity: a methodological reflection on cross-cultural philosophical comparison [abstract],“ *Comparative Philosophy*: Vol. 1: Iss. 1, Article 8. Available at: <<https://scholarworks.sjsu.edu/comparativephilosophy/vol1/iss1/8>>; DOI: <[https://doi.org/10.31979/2151-6014\(2010\).010108](https://doi.org/10.31979/2151-6014(2010).010108)>.

on Crosscultural Philosophical Comparison”, in the very first issue of our journal (*Comparative Philosophy* 1.1 (2010): 90- 105). That very year, based on the invitation of Professor Tu Weiming from Peking University and Harvard-Yenching Professor, I was a visiting professor at Beida, and our friendship has continued ever since. Unfortunately, although Xianglong lived to witness the first intellectual contributions of our CPWP, the international conference this year in May, he did not live to see the release of the special volume he edited with Bo Mou, which has just been released.⁶

Philosophical comparisons do not depend on any common denominator or standard between the traditions being compared, and this is very necessary to emphasize when we talk about the possibility of intercultural philosophical comparison, which is connected with the comparison paradox. According to the abovementioned Zhang’s text⁷, the original possibility of comparison depends on the „comparative situation“, i.e. the original comparison that is in the middle will not arise primarily and only at the level of concepts and propositions, but can only be achieved through inter-paradigmatic conditions where we have a clear awareness of the boundary of the paradigm from which we are trying to achieve situational communication with another paradigm. This idea hinders methodological intercultural comparison, since there is no universally valid standard between others’ traditions.⁸ However, in this new advocated perspective, inter-paradigmatic comparison is not impossible. ‘Paradox’ or ‘antinomy’ is used here to indicate a radical dilemma that cannot be overcome.⁹

Moreover, the ‘paradox of comparison’ is deeply embedded between different philosophies, since intercultural philosophical comparison cannot avoid the same. This, actually, is especially so because the possibility of comparison will depend on the universality provided by the common measure of the compared parties. Furthermore, Zhang calls the structure that makes the comparison successful - the comparative situation and gives an answer as it arises with respect to different philosophies. The philosophical comparative situation arises in an inter-paradigmatic condition. Therefore, the key methodology of philosophical comparison is to enter into its comparative situation before anything else. He provides examples of solutions by individual authors, such as ‘implicit comparison’ (Carine Defoort), ‘pluralized comparison’ (Bo Mou 牟博), comparisons from linguistic comparisons - that is, awareness of the effects of translations, grammatical, semantic and pragmatic comparisons between different languages – all the way to the philosophical comparisons (Roger T. Ames), etc.¹⁰

6 Mou, Bo 牟博 (2022) (ed.), 《中国哲学研究的方法论反思：比较哲学与哲学分析》 [Reflections on Methodology in Studies of Chinese Philosophy: Comparative Philosophy and Philosophy Analysis] (北京 Beijing: 商务印书馆 The Commercial Press).

7 Zhang, Xianglong (2010), op. cit., str. 91.

8 See more about the problems of transcultural comparative philosophy in: Rošker, Jana S. (2021). *Interpreting chinese philosophy: a new methodology*, Bloomsbury Academic, poglavlje 4: Metode i pristupi.

9 Op. cit., p 92.

10 Op. cit., p 98.

Furthermore, regarding the emergence of a philosophical comparative situation, it seems important to me to extract his note seven from the footnotes, since it contains an important analysis:¹¹

„Merging of horizons’ (*Horizontverschmelzung*) is the key term of this hermeneutic. It indicates a successful understanding between two or more mediators. –[U]nderstanding is always a fusion of these horizons that supposedly exist by themselves (Gadamer 1989, 306). For Gadamer, –The horizon is the reach of vision that includes everything that can be seen from a favorable position. (Gadamer 1989, 302) –The concept of ‘horizon’ suggests itself, because it expresses the superior touch of vision that the person who seeks to understand must possess. Acquiring a horizon means that one learns to look beyond what is closed and is situated nearby ----not in order to overlook it but to see better, within a wider whole and in truer proportion (Gadamer 1989, 305). The difference between these two theories, fusion of horizons and inter-paradigmaticity, lies primarily in the recognition of the reality of inter-paradigmaticity. Gadamer is not aware of the deep limitation of the paradigm regarding the understanding of inter-paradigmaticity, nor of the ontological meaning of otherness. In this respect, Martin Heidegger, and especially Emmanuel Levinas and Jacques Derrida are much more sensitive than him. Therefore, Gadamer is blind to what is really necessary for intercultural comparative understanding.“

According to him, this ‘inter-paradigmaticity’ is a conscious state that, although it resides in one paradigm, is strongly aware of the heterogeneity and even threatening presence of other paradigms, an awareness that precedes the so-called ‘fusion of horizons’, and thanks to that we are able to experience a marginal but deeper intercultural comparative philosophical situation more than is available in the paradigm and this is the precise meaning of the comparative situation as presented by Xionglong in his remarkable essay on the paradox of comparison.

2. COMPLEMENTARITY OF COMPARATIVE PHILOSOPHY AND PHILOSOPHICAL METHODOLOGY

Philosophical methodology is a field of research that studies the methods used in the practice of philosophy: methodological spectism, geometrical, phenomenological method, hermeneutic method, transcendental-critical method, dialectical method, constructivist, poststructuralist method, conceptual analysis, Socratic method, (anti-)method of deconstruction, pluralism of methods and ideas of metaphilosophy, and numerous others.¹² Nevertheless, the subject of this

11 Op. cit., p 98.

12 Overgaard, Søren; D’Oro, Giuseppina (2017). „Introduction“. *The Cambridge Companion to Philosophical Methodology*. Cambridge University Press. pp. 1–10. ISBN 978-1-107-54736-0; Dever, Josh (19 May 2016). „What is Philosophical Methodology?“ In Cappelen, Herman; Gendler, Tamar Szabó; Hawthorne, John (eds.). *The Oxford Handbook of Philosophical Methodology*.

article is not philosophical methodology in its various aspects, but our primary desire and effort is the promotion of comparative philosophy and pointing out the importance of recognizing the difficulties that exist in dealing with it today, as well as the extremes and difficulties that can be reached, and the need for mutual complementarity between comparative philosophy and methodology, especially philosophical methodology.

Our region is predestined for this kind of comparative considerations and the sooner it is able to shed its unique light in this area of research, the sooner we will be able to break out of the ethnic trap and worship of the ethnic cult that we have been mired in for the last three decades. In support of this there are the books and studies that I have published over the past two decades, especially after a more intense and far-reaching meeting with the „patriarchs“ of comparative philosophy at the University of Hawai‘i-Mānoa in Honolulu during the use of a Fulbright grant in 2006, at the invitation of Professor Eliot Deutsch.¹³

The author of this paper, in terms of encouraging awareness of the necessity of pluralization and comparative considerations, encouraged certain pioneering projects in Bosnia and Herzegovina and our region:

- he implemented the course *Comparative Philosophy* at the II cycle of the parent Department of Philosophy of FF UNSA after returning from the use of the Fulbright grant in 2006, which was attended by students from several departments of our Faculty;

- he published his book (2008). *Situating the Bosnian Paradigm: The Bosnian Experience of Multicultural Relations* (New York: Global Scholarly Publications, pp. 195);¹⁴

- he edited the topic issue in collaboration with two editors, P. Milidrag and R. Jovanov: „Religious and Philosophical Pluralism: East-West Meeting“;¹⁵

doi:10.1093/oxfordhb/9780199668779.013.34. ISBN 978-0-19-966877-9; Nado, J. How To Think About Philosophical Methodology. *J. Indian Counc. Philos. Res.* 34, 447–463 (2017). <<https://doi.org/10.1007/s40961-017-0116-8>>, kao i <<https://philpapers.org/browse/philosophical-methods/>>. Uz ovo, vidjeti Mužić, Josip (2007). *Filozofska metodologija*, Split: Naklada Bošković.

13 See Kahteran, Nevad (2021). *The Role of Comparative Philosophy in Bosnia & Herzegovina: Philosophising at the Big Fault Line* (Cambridge Scholars Publishing, pp. 188); <<https://www.cambridgescholars.com/resources/pdfs/978-1-5275-7450-2-sample.pdf>>;

Id. (2009). *Komparativna filozofija* (Comparative Philosophy), Filozofski fakultet u Sarajevu, pp. 332; ISBN 978-9958-625-13-8; <https://openlibrary.org/books/OL30629413M/Komparativna_filozofija>; and especially two texts published in our magazine: KAHTERAN, Nevad (2022) „Doing Philosophy Comparatively in Southern Europe: Western, Mediterranean, Islamic and Other Perspectives in Engagement“, *Comparative Philosophy*: Vol. 13: Iss. 2, Article 6. Available at: <<https://scholarworks.sjsu.edu/comparativephilosophy/vol13/iss2/6>>; DOI: <[https://doi.org/10.31979/2151-6014\(2022\).130206](https://doi.org/10.31979/2151-6014(2022).130206)>;

Id. (2021), „Doing Philosophy Comparatively in the Balkans“, *Comparative Philosophy*: Vol. 12: Iss. 1, Article 11. Available at: <<https://scholarworks.sjsu.edu/comparativephilosophy/vol12/iss1/11>>. DOI: <[https://doi.org/10.31979/2151-6014\(2021\).120111](https://doi.org/10.31979/2151-6014(2021).120111)>.

14 ISBN 1-59267-104-7, 978-1-59267-104-5; <www.gsp-online.org>; <books@gsp-online.org>; <<https://newyork-company.com/co/global-scholarly-publications-llc>>.

15 See: *Filozofija i društvo*, Beograd, 2013., br. 1, godište XXIV, str. 275-380.

- he edited a special issue dedicated to Islamic and comparative philosophy in collaboration with his colleague Daniel Bučan;¹⁶

- he co-organized the international symposium *East - West: Comparative Philosophy and World Situation* as part of the 29th F. Petrić Day in Cres in collaboration with his colleague Hrvoje Jurić¹⁷ on the occasion of the 100th anniversary of the University of Ljubljana (October 17-18, 2019), he took part in a meeting organized by his colleague Jana S. Rošker at their Academy of Sciences and Arts, which was later published in a book.¹⁸

These are the pioneering contributions of this BiH pioneer in comparative philosophy in the establishment of a collaborative network of a whole flock of young philosophers-comparatists, because they are the ones who should carry on their shoulders the project of redefining the definition of philosophy, because the very process of comparing different philosophies as such is necessarily connected with numerous methodological problems especially when we deal with transcultural philosophical comparisons that are connected with intercultural philosophical vocabularies, and this question is above all connected with the predominant Western-centric methodology and its axiological assumptions.

3. CONSTRUCTIVE ENGAGEMENT OF COMPARATIVE PHILOSOPHY

Institutional parochialism of academic philosophy, according to comparativist philosophers¹⁹, is a fundamental obstacle in moving aside the „cultural hegemony“ of Western academic philosophy in search of universal knowledge

16 See: *Synthesis Philosophica*, Zagreb, 2016., br. 62/2, vol. 31 fasc. 2, str. 227-482.

17 See: <<http://www.hrfd.hr/documents/dfp-programska-knjizica.pdf>>.

18 KAHTERAN, Nevad (2021). „The Global Significance of Chinese/Taiwanese Philosophy in a Project on Islamic-Confucian-Daoist Dialogue in the Balkans“, In: Rošker, Jana S. (ed.), *Modern and Contemporary Taiwanese Philosophy: Traditional Foundations and New Developments*, Cambridge Scholars Publishing, pp. 350-382: <https://www.cambridgescholars.com/resources/pdfs/978-1-5275-5823-6-sample.pdf>
ISBN (10): 1-5275-5823-1; ISBN (13): 978-1-5275-5823-6. Herewith it is worth noting the following:

„Professor Rošker is an internationally known expert on Chinese philosophy. According to the scientific evaluation of the official Slovenian bibliographic system SICRIS, Professor Rošker is currently the most successful and productive researcher in her country (Slovenia) in the entire field of humanities (second is Slavoj Žižek). She is the director of the National Research Programme on Asian Languages and Cultures, vice-president of the oldest and most influential world association for Chinese philosophy, ISCP, and founder, first president, and honorary member of the European Association for Chinese Philosophy (EACP: <<https://www.ea-cp.eu/>>). She has been director of nine national and international research projects and serves on seven editorial boards of various internationally influential academic journals and on eight advisory boards of various international academic organizations.“ (From the recommendation letter of the Dean of the Faculty of Philosophy of the University of Ljubljana, Prof. dr. Mojca Schlamberger-Brezar, dated April 22, 2022).

19 Finally: Chakrabarti and Weber 2016; Van Norden 2017.

that transcends cultural particularities outside the European cultural universe.²⁰ For this reason, philosophy is an extremely non-diversified discipline and the lack of diversity is what blocks its further progress. Moreover, institutionalized academic philosophy is segregated not only culturally; perhaps this is a good opportunity to celebrate through this paper a philosophical research approach in the problematization of complex theoretical-methodological issues of fundamental research and their contribution to the progress of the global community and the prosperity of modern countries precisely within the International Association of Methodologists. In the coming text of this paper, we will identify or at least somewhat mark the areas within comparative philosophy, as a general inter-traditional engagement in the practice of philosophy, in which it would be necessary to conduct fundamental research in the future, in the direction of a faster development of world philosophy, which could be a strong initial driver of fundamental research in all fields of science, without whose new knowledge and discoveries there is no prosperous development of modern countries and the global community as a whole.²¹

In addition, the author deeply believes that the human race is not saved through individual clubs, but only as a whole, i.e. either it is rescued and saved as a whole, or else it collapses and disappears as a whole. This especially because our destiny is so intertwined and interdependent that we will either continue to follow the suicidal course of modern humanity, or, instead of exclusivity and particularism, we will be able to offer inclusiveness and true pluralism. Because, for example, it is not possible to put aside 5-6 thousand years of coded Chinese culture and civilization, or any other civilization for that matter, given the said interdependence and intertwining, which, unfortunately, is still the prevailing mainstream within the parochialism of Western philosophical departments, including ours own mono-culturality of academic philosophy, formed within the Western philosophical canon.

The exclusion of Asia and Africa from this philosophical canon is intellectual myopia; blind holding of the historical presentation within the academic study actually lies at the basis of intercultural philosophizing vs. merely dealing with comparative philosophy, in order to continue to maintain the racial superiority of Europe and the West. This is what lies at the basis of the particularistic Eurocentric history of philosophy and the virtual substitution of philosophy with the history of philosophy at university centers in the Western world, and such a thing is truly unsustainable.²²

Furthermore, two more ailments must be diagnosed here, namely the inertia in the fight for philosophical universalism and rising above any form

20 Silius, Vytis, „Diversifying Academic Philosophy: The Post-Comparative Turn and Transculturalism“ u: *Asian Studies* VIII (XXIV), 2 (2020), pp. 257–280, DOI: 10.4312/as.2020.8.2.257-280.

21 In accordance with the instruction of the organizer, academician Nedo Danilović, in the continuation of the text, the author wants to at least indicate the directions and shelters in thinking and acting within the constructive engagement of comparative philosophy.

22 Silus, op. cit., str. 261.

of sectarianism, as well as the overcoming of the relative isolation of philosophical departments from those of empirical sciences in the current compartmentalization of knowledge within university centers in the region and the world.²³

Building a true world philosophy is only possible if we understand philosophy in the plural, that is. when each of its wise forms is included, instead of the previous continuation of the monoculturalism of Europeanism.²⁴ Therefore, both Asian colossal philosophies and African philosophy which is dominantly oral in nature, as well as any other form of philosophizing - must be involved in the academic curricula of the study of philosophies, without any kind of gap or skepticism.²⁵ Furthermore, this explicit support for the diversity and plurality of philosophical cultures and traditions in post-comparative philosophy leads us to transcultural studies and what is summed up under post-comparative philosophy. This is at the same time a call for the diversification of Eurocentric academic philosophy and what I call in the text redefining the definition of philosophy (James W. Heisig's term²⁶), which is entirely provided by post-comparative philosophy and transcultural studies. This kind of diversification is an inevitable process, especially as „philosophizing across borders“²⁷ intensifies, which is very necessary and inevitable in today's globalized and interdependent world.²⁸

This brings us to the 'Strategy of Constructive Engagement', or 'Display of Constructive Engagement',²⁹ which is openly focused on the recent virtual (zoom) conference (April 19-23, 2022), jointly organized by our magazine and the CPWP International Society, and was co-sponsored by the Center for Comparative Philosophy of San Jose State University, USA.

23 See the excellent book of our Austrian colleague Conrad Paul Liessmann (2008.), *Teorija neobrazovanosti: zablude društva znanja*, Zagreb: Naklada Jesenski i Turk, 151 str, as well as our interview with him: „Against the Simplification of Thought and Educational Ideas Interview with Konrad Paul Liessmann“, *Philosophy Study*, 2013.

24 Silus, op. cit., str. 271-2.

25 In our region there is a Serbian translation of the book: Kuper, Dejvid E. (2002), *Svetska filozofija: istorijski uvod*, Novi Sad: Svetovi, 606 str., kao jedina dosad ove vrste.

26 See: <<https://nirc.nanzan-u.ac.jp/en/staff/jheisig/>>.

27 „Philosophizing across borders“ according to Chakrabarti, Arindam, and Ralph Weber (2016). „Introduction.“ u: *Comparative Philosophy without Borders*, edited by Arindam Chakrabarti, and Ralph Weber, 1–33. London: Bloomsbury. See also: Moeller, Hans-Georg (2018). „On Comparative and Post-Comparative Philosophy.“ u: *Appreciating the Chinese Difference: Engaging Roger T. Ames on Methods, Issues, and Roles*, edited by Jim Behuniak, 31–45. Albany: State University of New York Press.

Van Norden, Bryan W. (2017). *Taking Back Philosophy: A Multicultural Manifesto*. New York: Columbia University Press.

28 Mou, Bo (2009). „On some methodological issues concerning Chinese philosophy: an introduction“ & „Constructive engagement of Chinese and Western philosophy: a contemporary trend toward world philosophy“ u: *History of Chinese Philosophy*, ed. by Bou Mou, London and New York: Routledge, str. 41-68 & 571-608.

29 MOU, BO (2010) „On constructive-engagement strategy of comparative philosophy: a journal theme introduction [abstract],“ *Comparative Philosophy*: Vol. 1: Iss. 1, Article 4. Available at: <<https://scholarworks.sjsu.edu/comparativephilosophy/vol1/iss1/4>>. DOI: <[https://doi.org/10.31979/2151-6014\(2010\).010104](https://doi.org/10.31979/2151-6014(2010).010104)>.

The goal of our society CPWP³⁰ is clearly indicated in the opening words of the editor and at the same time our president, Bo Mou:³¹

„to constructively promote comparative philosophy as a general inter-traditional engaged way of dealing with philosophies in the direction of world philosophy; by being sensitive to true needs; and to provide interested colleagues with effective and flexible channels of academic exchange and engaged platforms for discussion (for example, through the powerful open access Internet resources that have been developed recently“ (p. 2).

Because, „Regardless of where we are and regardless of identity (this or that) or status (lower or higher), We (including all of us in ancient and modern times, in these or those philosophical traditions) are moving in the direction of one strategic ‘world philosophy’: worldwide we seek to present (communicate and understand), engage with (rather than be passive) and learn from each other (in terms of either distinctive suitable perspectives, or distinctive adequate guiding principles, or distinctive effective instruments, etc.) and constructively make common contributions to the contemporary development of philosophy and society“.

The aforementioned point is emphasized through the introductory statement of the Society’s Statute on the strategic goal of the CPWP: „The Society’s goal is... the promotion of comparative philosophy as a general way of philosophizing through inter-traditional engagement in the direction of world philosophy, which requires dialogue, mutual understanding and learning, complementarity, and joint contributions through distinctive approaches and resources from different philosophical traditions around the world for the sake of contemporary development of philosophy and society“ (clause 2.1). With this strategic goal in mind, CPWP³² seeks to facilitate the academic exchange and discussion of ideas among interested philosophers in different parts of the world and to provide them with effective channels and platforms. Recently, for the first anniversary, we substantially implemented through CPWP’s first international conference, which was co-organized by the journal *Comparative Philosophy*, and jointly sponsored and hosted by the SJSU Center for Comparative Philosophy³³, through the effective Zoom channel.³⁴

With this text, I herewith present the promoter of the idea of comparative philosophy, i.e. „comparative philosophy as a general way of doing philosophy through cross-tradition engagement toward world philosophy“ (‘comparative philosophy toward world philosophy’ in short³⁵), and at the same time the vice president

30 See: <www.cpwponline.org>.

31 In: *Comparative Philosophy* Volume 13, No. 2 (2022): 1-3; Open Access / ISSN 2151-6014 / <www.comparativephilosophy.org>; <[https://doi.org/10.31979/2151-6014\(2022\).130204](https://doi.org/10.31979/2151-6014(2022).130204)>.

32 See: <<https://www.cpwponline.org/>>.

33 See: <<https://www.sjsu.edu/centercomphil/>>.

34 See: <https://drive.google.com/file/d/10LHI6Ki_lfOBbTTPw3LzgHlapVt4Ixxv/view>.

35 See Mou, Bo (2020). *Cross-Tradition Engagement in Philosophy: A Constructive-Engagement Account*, New York: Routledge, p 427, which represents a summation of numerous of his earlier books and anthologies, a systematic theoretical presentation of the goal of constructive

of the international society of philosophers-comparatists that was founded in May last year in the United States, at the same time trying to bring closer the terms of cross-tradition engagement, philosophical methodology in our striving to build a true world philosophy, on the occasion of the successfully marked first anniversary through the first international conference³⁶ via Zoom³⁷.

Furthermore, the very term „comparative philosophy“ itself was used with a primary historical orientation, with a primary focus on the historical description of the similarities and differences of the figures or texts that are being researched comparatively. The mark “comparative” could be misleading if it suggested that comparative philosophy focuses only on, and nothing more than, mere descriptive comparisons of the similarities and differences of the viewpoints being explored; thus CPWP prefers to parallelly use „inter-traditional engagement in philosophy“ and „comparative philosophy“ as a framework term, in addition to numerous other terms, for example, post-comparative philosophy, which we will return to a little later in the text.

4. THE STRATEGY OF CONSTRUCTIVE ENGAGEMENT OR ACCOUNT

The strategy of constructive engagement or account (‘constructive-engagement strategy’ or ‘constructive-engagement account’), according to Bo Mo, has six closely related emphases that are presented in this special issue of the *Journal of Comparative Philosophy*.³⁸

(1) it emphasizes critical engagement due to the search for truth (rather than „everything passes by“);

(2) it emphasizes the constructive joint contribution of distinctive approaches in critical engagement through their learning from each other (through their acceptable/appropriate if they exist: or suitable perspectives, or adequate guiding principles, or effective instruments) by making a contribution to jointly interesting questions/topics (either factually/explicitly or implicitly addressed) in a complementary way;

(3) it emphasizes the philosophical interpretation of the texts of the addressed thinkers instead of mere historical descriptions;

(4) it emphasizes the orientation of an engaged philosophical issue that aims to contribute to the contemporary development of philosophy in a series

engagement and a meta-methodological level, as well as the recently published book: Mou, Bo 牟博 (2022) (ed.),《中国哲学研究的方法论反思：比较哲学与哲学分析》[Reflections on Methodology in Studies of Chinese Philosophy: Comparative Philosophy and Philosophy Analysis] (北京 Beijing: 商务印书馆 The Commercial Press).

36 See: < https://drive.google.com/file/d/1l1Jq8cyFN2qaaG-_B5OXNO2cNbg1LHzh/view>.

37 See: < https://drive.google.com/file/d/10LHI6Ki_lfOBbTtpw3LzgHlapVt4Ixvv/view>.

38 See: Current Issue: Volume 13, Issue 2 (2022) *Special Issue: Commemorating the First Anniversary of International Society for Comparative Philosophy Toward World Philosophy*: <<https://scholarworks.sjsu.edu/comparativephilosophy/>>.

of philosophical questions that can be jointly investigated and that can be approached through philosophical interpretation and from a broader philosophically favorable position;

(5) it emphasizes dealing with adaptable and adequately inclusive approaches regarding different (suitable) perspectives from distinctive approaches in different traditions, with sensitivity to the dynamic development of the subject of study and hence appropriate inclusion of suitable perspectives;

(6) it emphasizes that the aforementioned engaged research should be guided by adequate methodological principles in a holistic manner and with a higher and wider vision in mind.³⁹

Furthermore, according to him, the methodological strategy is characterized in terms of 'constructive engagement'⁴⁰ with two main considerations: <1> the key words in the expression are 'constructive' and 'engagement' and the whole expression includes verbatim some of the fundamental features and highlights; The <2> mark is historically associated with the strategy in printed relevant documents (for example, the previously cited passages from the statement of commitment of our magazine and the CPWP Statute) as well as in the reflexive practice of the strategy of „constructive engagement“ (especially in the last two decades) through a series of international joint projects that have been held through this strategy (such as collective research projects entitled: 'Davidson's Philosophy and Chinese Philosophy'⁴¹, 'Constructive Engagement of Analytic and Continental Approaches in Philosophy: From the Vantage Point of Comparative Philosophy'⁴², 'Philosophy of Language, Chinese Language, Chinese Philosophy: Constructive Engagement'⁴³.

He further makes it evident that to this extent, a strategy of constructive engagement can and does cover, directly or indirectly, explicitly or implicitly, a number of specific projects of inter-traditional engagement and some distinctive theoretical accounts that may be more or less in line with the strategy of „constructive of engagement“ in order to explain how the general question of inter-traditional engagement in philosophy is possible.

This is a constructive sign that these previous theoretical efforts in explaining the strategy of constructive engagement have had a positive impact on the innovative contributions of scholars in developing scholarship in comparative philosophy both at the meta-methodological theoretical level and at the level of inter-traditional research of some specific topics. In this way, we briefly presented Bo Mou's holistic presentation of the „adequate“ conditions for the

39 This strategy is also presented in the Introduction: Mou, Bo (2020). *Cross-Tradition Engagement in Philosophy: A Constructive-Engagement Account*, New York: Routledge, str. 5-6.

40 Ibidem.

41 Mou, Bo (2006) (ed.). *Davidson's Philosophy and Chinese Philosophy: Constructive Engagement*, Leiden: Brill.

42 Mou, Bo & Tieszen, Richard (2013) (eds). *Constructive Engagement of Analytic and Continental Approaches in Philosophy: From the Vantage Point of Comparative Philosophy*, Leiden: Brill.

43 Mou, Bo (2018), *Philosophy of language, chinese language, chinese philosophy: constructive engagement*. Leiden and Boston: Brill.

preservation of adequate methodological principles and, accordingly, the meta-methodological framework on how inter-traditional engagement is possible by explicitly pointing „in the direction“ of the dimension of comparative philosophy as a general way. philosophizing through inter-traditional engagement in the direction of world philosophy.

Along with this, we also wish to emphasize his clarification of the question of the method itself, taking into account that the term ‘method,’ or ‘methodological approach’ means a way of answering how to approach the subject of study, and that there is a distinction between three types of paths or methods, which can constitute distinctive dimensions of the methodological approach:

(1) methodological perspective (or standpoint method/perspective method): a way of approaching a subject of study that is intended to point out, or focus on, a particular aspect of the subject and capture or explain the aspect in terms that are characteristic of that aspect, together with a minimal metaphysical assent to the existence of that subject aspect. There is, according to him, an important distinction between suitable and unsuitable methodological perspectives: taking into account the object of study; a (methodological) perspective on the object that really captures a certain aspect of reality possessed by this object is suitable (otherwise it would be unsuitable). Furthermore, there is a distinction between the simplex methodological perspective and the complex methodological perspective: simplex perspective is an individually distinguishable methodological perspective, and complex perspective is either a combination of multiplying simplex (multiplied complex perspective), or connecting of one simplex perspective with a certain methodological guiding principle (leading principle - combined complex perspective). (Under perspective Bo Mou in this place means the simplex methodological perspective unless otherwise indicated);

(2) methodological instrument (or instrumental method): the way in which a certain methodological perspective is implemented or given the means to be realized. They are generally neutral in character and serve different methodological perspectives;

(3) methodological guiding principle (or guiding principle method): the way concerning a certain methodological perspective (perspectives), concerning the object of study, which is assumed by an intermediary who takes that perspective (or one or more between groups of perspectives) for guiding and regulating <1> how the general purpose and specific focus should be set to serve the perspective; <2> how the current perspective should be evaluated and used, <3> how to observe the relationship between the current perspective and other perspectives. [Above <2> and <3> are combined into „how to view the relationship between distinctive methodological perspectives concerning the subject of study“]. Furthermore, according to Bo Mo, there is an important distinction between adequate and inadequate methodological guiding principles concerning how to view the relationship between distinctive methodological perspectives. In short, this would be the summation of Bo Mou’s view on this kind of analysis, which is very necessary for competently dealing with

comparative philosophy⁴⁴, that is, intercultural philosophizing vs. merely dealing with comparative philosophy. However, before summarizing the ideas and positions presented here regarding the general inter-traditional engagement of philosophy, as presented by comparativist philosophers, and especially by those gathered around our magazine and the CPWP International Society, it is necessary to point out future directions of action and dilemmas that stand before us.

5. INSTEAD OF CONCLUSION: COMPARATIVE PHILOSOPHY MALGRÉ LUI

While using the Fulbright grant at UH University in Honolulu in 2006, I had the pleasure of meeting the 'patriarchs' of comparative philosophy, a la Eliot Deutsch, Roger T. Ames, Chung-ying Cheng, among many others, as well as also one young, but above all promising philosopher-comparatist, now already realized Ralph Weber, who is the president of the European Association for Chinese Philosophy.⁴⁵ For years after that, we stayed in touch through occasional meetings and projects, but last year we did one particular interview that I want to draw attention to in this paper, which we published in the magazine edited by our esteemed Slovenian colleague, Jana S. Rošker, under the following title: „Towards Post-Comparative Philosophy: Interview with Ralph Weber”⁴⁶ This is especially due to the fact that he is also the co-author of an excellent study with Arndam Chakrabarti in this area⁴⁷, and that is also an additional reason for mentioning him in this paper, in addition to the collaborative conversation in the work, since he promptly sent me a PDF- in the joint co-editorial by him, Steven Burik and Robert Smid, which has just appeared from the press⁴⁸,

44 Finally, especially see the following by the same author:

Mou, Bo (2001), „An Analysis of the Structure of Philosophical Methodology: In View of Comparative Philosophy”, in Bo Mou (ed.) *Two Roads to Wisdom? – Chinese and Analytic Philosophical Traditions* (Chicago: Open Court), 337-64.

Mou, Bo (2010), „On Constructive-Engagement Strategy of Comparative Philosophy”, *Comparative Philosophy* 1.1: 1-32. <<http://www.comparativephilosophy.org>>.

Mou, Bo (2020), *Cross-Tradition Engagement in Philosophy: A Constructive-Engagement Account* (New York and London: Routledge).

Mou, Bo (2022), „A Holistic Account of Adequacy Conditions for How to Look at Contraries: How Cross-Tradition Engagement in Philosophy Is Possible”, *Asian Studies* 10.3: 157-179 <DOI: 10.4312/as.2022.10.3.157-179>. ment” posted at <www.sjsu.edu/centercomphil/>.

45 See: < <https://europa.unibas.ch/en/about-us/people/professorships/ralph-weber/>>.

46 *Asian Studies*, 9(2), pp. 211-221 (vidjeti: < <https://journals.uni-lj.si/as/article/view/9873/9408>>). Isti je objavljen i u mojoj knjizi (2021), *The Role of Comparative Philosophy in Bosnia and Herzegovina: Philosophizing at the Big Fault Line*, Cambridge: CSP, str. 164-174.

47 Chakrabarti, Arindam, and Ralph Weber (2016) (eds). *Comparative Philosophy without Borders*, London: Bloomsbury, knjiga o četiri etape komparativne filozofije u pluralističkom svijetu (unverzalizam, lokalizam, kritičko spajanje između univerzalizma i lokalizma, globalna post-komparativna filozofija ili

48 Burik, Steven, Smid, Robert, and Weber, Ralph (2022) (eds), *Comparative Philosophy and Method: Contemporary Practices and Future Possibilities*, London: Bloomsbury Academic, 280 pp.

and in which the authors included here critically reflect on the methods of comparative philosophy, the necessary prerequisites for practicing comparative philosophy, the constellation of universalization and essentiality, translation as a method, postcolonialism and globalization, plurality, neutrality and method, cultivating comparison, methodological myopathy, plurality and creativity, comparative philosophy without method with pleas for minimal restrictions, and about two problems of comparative philosophy, i.e. why conversational thinking is the right methodological option with an epilogue at the end of this book.

Actually, his interest could be summed up in the following three areas: comparative philosophy and questions concerning comparison, as well as programmatic suggestions of post-comparative philosophy; Chinese philosophy, that is, classical and modern Confucianism, and finally sociological and political aspects, current political philosophy of the People's Republic of China and contemporary Chinese politics; furthermore, there is global political theory and history of ideas, theoretical and practical issues of textual interpretation, as well as conceptual and methodological aspects of inter-linguistic and intercultural research, including discussions of Eurocentrism, studies in this area, and European global studies.

Why do I deal with all this in the conclusion of this paper?

Through the aforementioned interview, the question of interdisciplinarity, transdisciplinarity, that is, a kind of „post-disciplinarity“ is raised in order to go beyond the fruitless discussions about disciplinarity vs. interdisciplinarity. We herewith understand philosophy as a global discipline above disciplinarity, with theology as the only absolute science, and in accordance with new developing digital and technical possibilities.

Comparative, or post-comparative, inter-traditional engagement in philosophy, intercultural philosophy, fusion philosophy...⁴⁹ - regardless of our personal preferences in approaching it and which term we use - as comparativist philosophers, we agree on the issue of much-needed methodological pluralism on meta-degree, where the issue of methodology remains undefined, all because of the vision of the possibilities that will stand in front of the above-mentioned whole young flock of comparativist philosophers from our region and the world, since the change we expect in academic philosophy and philosophy departments rests on their shoulders and, definitely, they are the ones who should make it real and bring it to the light of day. In contrast to this there are the small town philosophies, as I personally translate the futile efforts of local philosophers in the sense of giving importance to oneself in the micro-space of our small local communities and environments. The late Serbian philosopher, but also member of ANUBiH, Radomir Konstatinović⁵⁰ wrote masterfully about this. Universalism

49 Herewith I have in mind the text by Robert E. Allinson („The Myth of Comparative Philosophy or the Comparative Philosophy Malgré Lui“) u: Bo Mou-ovom editorijalu (2001): *Two Roads to Wis dom?—Chinese and Analytic Philosophical Tradition* (Open Court).

50 His book *Filosofija palanke* for the first time was published in the magazine *Treći program*, br. 2, 1969., then in Beograd: Treći program, 1970, Beograd: Nolit, 1981., 1991., and finally in: Beograd: Otkrovenje, 2004.

and inclusivism on the way to philosophical and theological pluralism and true pluralization of our transitional societies, or exclusivism and particularism with a tunnel vision of the world - the choice is ours, after all, as are the consequences.

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Невад Х. КАХТЕРАН

ПРОМОЦИЈА КОМПАРАТИВНЕ ФИЛОЗОФИЈЕ КАО ОПЋЕГ ИНТЕРТРАДИЦИЈСКОГ АНГАЖМАНА БАВЉЕЊА ФИЛОЗОФИЈОМ У СМЈЕРУ СВЈЕТСКЕ ФИЛОЗОФИЈЕ

Резиме

Наше Интернационално друштво за компаративну филозофију у смјеру свјетске филозофије („CPWP” укратко: <www.cpwponline.org>), наглашава (али није ограничено на) конструктивни ангажман дистинктивних приступа и ресурса из различитих филозофских традиција (било да се разликују културолошки или стилу/оријентацији), или од (античких) филозофских традиција и сувременог знања (филозофије и других интелектуалних занимања): истраживање о томе како оне могу разговарати и учити једна од друге и направити заједничке приносе сувременом развоју филозофије кроз обрађивање низа (перенијалних, постојећих и изнова идентифицираних) питања од филозофске вриједности и значаја, која се могу заједнички тицати и бити првим кораком зближавања кроз прикладну филозофску интерпретацију и са више или шире филозофске повољне позиције у смјеру свјетске филозофије и због сувременог развоја филозофије и друштва. Проблеми интер-традицијске филозофије уз њезине методе и приступе, то јест, компаративни приступ уз предности и недостатке ових компаративних приступа, узимајући у обзир да они припадају еуро-америчкој методолошкој традицији као производ еуропске интелектуалне историје и аналогних социјализирајућих процеса наспрот незападњачким дискурсима, који припадају различитом референцијалном оквиру и ео ипсо резултирају у различитим методолошким процедурама, наши филозофи-компаративисти смјештају унутар ширег интеркултуралног контекста.

Такођер, сами процес компарирања различитих филозофија као таквих нужно је повезан с бројним методолошким проблемима напосе када се бавимо транскултуралним филозофским успоредама које су повезане са интеркултуралним филозофским вокабуларима, и ово питање је понад свега повезано с преминањем западноцентричном методологијом и њезиним аксиолошким претпоставкама. Заправо, бавећи се с овом перспективом (перспективама) различитих референцијалних оквира и оквиrom који је најчешћи у тијек еуропске интелектуалне историје, овај рад је у потрази за унпређењем и промјеном постојећих методолошких процедура на темељу доступне литературе.

Ова ‘стратегија конструктивног ангажмана’ или ‘приказ конструктивног ангажмана’ отворено је фокусиран на недавну виртуалну (zoom) конференцију (19. - 23. април 2022. године), коју су заједнички организирали наш часопис и Интернационално друштво CPWP, а коспонзорирао Центар за компаративну филозофију San Jose State Свеучилишта.

Кључне ријечи: интеркултурално филозофирање вс. бављења компаративном филозофијом, парадокс компарације, интеркултурална перспектива као нова теоретска методологија уз свој компаративни метод и интеркултурална филозофска успоредаба.

Успомени на А. Шарчевића и Х. Зханџа

*Dušan B. REGODIĆ**

MB University, Faculty of Business and Law, Belgrade

*Damir D. JERKOVIĆ***

University of Defense, Military Academy, Belgrade

MODELING AND SIMULATION OF DYNAMIC SYSTEMS IN THE FUNCTION OF BASIC RESEARCH IN TECHNICAL AND TECHNOLOGICAL SCIENCES

Abstract: The model, as a synthetic abstraction of reality, is applied in engineering practice to study the characteristics and behavior of dynamic systems. The paper gives an example of a simple physical model of an aircraft. A mathematical model is defined for testing primary flight characteristics. The paper uses a predictive model that is used to analyze the consequences of different system management strategies. The predictive model connects dependent and independent variables that describe system states. The paper presents simulations on three models. Mathematical and statistical methods are used in the paper. Parametric statistical methods are based on the normal distribution when predicting certain phenomena with a certain probability. The simulations in this paper represent the execution of operations on the system model in order to obtain the desired knowledge about the system's behavior. This is a simple and safe way to experiment with a model. A real dynamic system whose movement is described with twelve differential equations is considered. The complexity of the problem of solving differential equations requires the use of the Runge-Kutta method of the fourth order. These simulations enable the understanding of the movement of complex dynamic systems, the design of new ones and the improvement of the performance of existing systems. A special contribution of the paper is in the large savings of all resources. The contribution of the paper itself is in confirming that the role of simulation in scientific research is indispensable due to: better understanding of the system (it reveals oversights in design), improving efficiency (it reveals problems in systems), testing alternatives (it avoids costly and sometimes dangerous trial and error experimentation on the real system), saving time, human resources and money (the cost of simulation is small compared to the gain it gives), and creating virtual environments.

Key words: differential equations, model, simulation, dynamic system, aircraft.

* Full professor, dusanregodic5@gmail.com

** Assistant professor, damirje@gmail.com

1 INTRODUCTION TO MODELING AND SIMULATION OF DYNAMIC SYSTEMS

In engineering and scientific practice, the study of system characteristics is based on the use of models that determine the quantitative and qualitative relationships of elements and subsystems in a dynamic system. Before proceeding to modeling and simulation itself, it is necessary to explain what an aircraft is as a system and what characteristics it can have. Models are a synthetic abstraction of reality, as confirmed by the example of a simple physical model of an aircraft in an aerodynamic tunnel. There are also very complex mathematical models (simulation models of a strategic defense system, planning the realization of complex objects, systems, and processes). Models are primarily used to test the most important characteristics and natural phenomena while ignoring insignificant details. Models are abstraction and sometimes not a completely accurate picture of reality. Any model, by definition, must leave aside a number of details that are otherwise part of the phenomenon being analyzed.

1.1 Modeling method

There are two main classes of models - physical and abstract (figure 1.). Physical models can be of the same nature, and then they are usually reduced physical replicas of real systems (small models of buildings or bridges as presentations or for testing resistance to earthquakes; small cars or aircraft in wind tunnels when testing the aerodynamics of vehicles being designed). The theory of modeling knows several possible classifications of models, the review of which is given in figure 1.

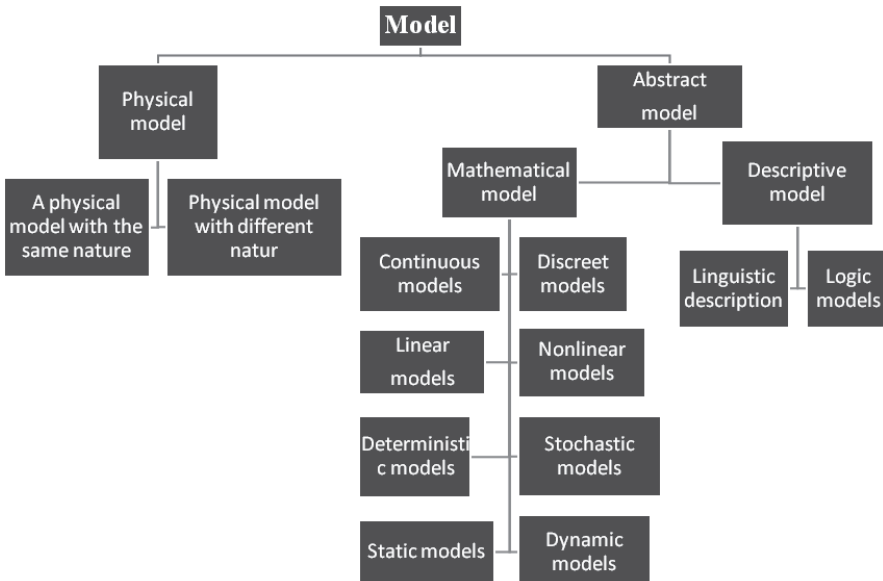


Figure 1. Possible classification of models

In this case, the variables and parameters of the model are expressed in the same units as the variables and parameters of the modeled real system, only with a different (usually smaller) value. The second type of physical models are those with different nature. In them, the parameters of one type of system are described by the parameters of another type of system.

The main disadvantages of physical modeling are technical problems in making the model, their cost, as well as limited accuracy. Problems that occur in physical modeling can be avoided by using abstract models. They can be very diverse: linguistic (verbal) description, flow chart, flow chart signal, block diagram, etc.

The modeling method uses research procedures through which a model is generated that can replace the actual phenomenon and through which, experimentally or through simulation, we can investigate and transfer data from the model to the actual phenomenon. This method enables researchers to come to various generalizations, new conclusions, which enrich knowledge. In science, various models are often made to, based on the analogy between reality and the model, come to knowledge about how some object or phenomenon will change in function of the action of different factors. Assuming that the essential characteristics for a given level of abstraction have been embedded in the model and that, based on relevant knowledge of the phenomenon, appropriate relationships that connect these characteristics have been formulated, then such a model can explain the essential behavior of the analyzed phenomenon. The cognitive value of the model is based on the fact that it is rarely necessary to know everything about a phenomenon, but only the quantities that are essential for a given level of abstraction in the analysis of the given phenomenon.

According to their functions and their intended purpose, models can be classified as descriptive, predictive, or normative.

Descriptive models generally describe the existing or past state of the system. Typical representatives of descriptive models are: maps, organizational schemes, final accounts of the company, etc. As can be concluded, this type of model provides nothing more than a description of the existing state of the system, but allows for a better overview of the interactions of objects in the system.

Predictive models are used to analyze the consequences of different system management strategies. They can be used to predict the results of decisions made. These models link dependent and independent variables that describe the states of the system. By simulating these models, predicted values of dependent variables can be obtained based on assumed values of independent variables.

The model allows for the selection of the optimal solution from a set of possible solutions. Therefore, all optimization models are normative. The main problem with these models is the selection of one or more goal functions that need to be optimized. Typical normative models are: linear

programming models and general mathematical programming models, inventory management models, and so on.

Based on their structure, models can be classified as iconic, analog, and symbolic. Iconic models are a „small“ or „large“ image of the system that represent and retain certain physical properties of the system. Typical iconic models are: aircraft models in wind tunnels, models of hydro engineering structures (dams, etc.), model of a railway station object, and so on.

Analog models use the properties of one physical system to represent the properties of another physical model. In this way, an analogy is established between diverse physical quantities (for example, an analogy of current flows with water flows). Complex objects and relations in the real system are replaced by objects and relations in the analog model, which is easier to analyze than the real system. However, even in this type of model, there is a strong correspondence between the elements of the real system and the elements of the model.

Symbolic models, or more commonly known as mathematical models, replace the objects and relations of the real system with corresponding symbols that are linked to the object properties and are called variables, and symbols that represent the relations between variables and are called operators. This type of model is highly general and abstract, and introduces mathematical reasoning in the analysis of the system.

Models are classified in relation to the absence or presence of the time variable as static and dynamic. In static models, the relations between objects do not change over time, while in dynamic models there is a dependence on time. It can be concluded that in general, dynamic models are more complex than static models, but they also provide a more accurate description of the system.

In relation to the presence of a random factor, models are divided into: deterministic models, risk models, uncertainty models, and conflict models. The random factor in the models actually refers to the level of knowledge that the decision maker has about the state of the environment that affects the system being analyzed. In principle, the decision maker has little or no control over the states of the environment.

Deterministic models are characterized by the absence of a random factor. The probability of realizing any state of the environment (and therefore the system) in these models is equal to one. These models can be translated into risk models using the concept of subjective probabilities with a known solution procedure. In conflict models, which form the basis of game theory, the states of the environment are under the control of another player (or more other players) who constitute the opposition or competition to the first player (decision maker). All games, including wars, the mechanism of competition in the market, and so on, can be described by this type of model, as is the case with all planning and forecasting models.

Generality refers to the possibility of applying the model to different situations. In terms of generality, models are divided into: specialized and general.

General models can be applied to different types of decision-making problems. Examples of this type of model are: linear programming, queueing models, and so on.

Specialized models are made to solve a specific individual problem and cannot be transferred to other situations. In many cases, general models do not provide efficient solutions to the problem at hand and specialized models are used, which are generally more economical.

Models can be classified based on the degree of quantification as quantitative and qualitative. Quantitative models use mathematical relationships and express results numerically. Qualitative models relate to systems for which it is not possible to introduce measurement of characteristic quantities or to formulate a mathematical model. As such, qualitative models are less precise, less rational, and less consistent than quantitative models. However, very often they are the only possible way to describe reality.

1.2 Definition, types and means of simulation

Simulation is a technique of modeling that represents the execution of operations on a model of a system in order to obtain the desired knowledge about the behavior of the system. It is a simple and safe way of experimenting on a model and is a powerful technique for solving many problems [6]. If the relations that make up the model are simple enough, the desired information can be obtained directly using mathematical methods (algebra, calculation, probability theory). This is called an analytical solution. However, real systems are generally too complex, so their models must be considered using numerical techniques. Most engineering problems are represented by differential equations, whose solutions describe the time response of the system to given initial conditions and inputs.

Depending on the type of model, there are two main types of simulation: physical simulations, which deal with experiments on physical prototypes of real systems, where real, scaled inputs are applied to the model, and then the outputs are compared with the real system (e.g. model of an aircraft in a wind tunnel). The second type of simulation is numerical simulation, which is performed on a mathematical model of the system, usually on a computer (computer simulation). Its development was stimulated for the needs of the military and initially took place on analog computers designed specifically for simulating differential equations. The popularity and general acceptance in all fields of engineering and science coincide with the development of cheap and easily accessible digital computers.

The development of simulation software begins with programming in low and high level programming languages, through general purpose simulation software to today's numerous specialized software packages for simulation in specific areas. Modern simulation software is characterized by an easily understandable graphical user interface, which allows for quick and easy execution of simulations on simulation models, simple modification of parameters, both for individual components and for the simulation as a whole, accessible and clear

simulation results in the form of various graphs and tables, complex analysis of results with reporting of errors in the simulation model and simulation itself.

1.3 Importance and advantages of simulation

Simulation helps in understanding complex systems, designing new systems and improving the performance of existing systems. It plays a crucial role where experimenting with real systems is impossible, impractical, expensive, time-consuming or too risky (e.g. in the automotive industry, designing new vehicles, testing cars instead of previous simulations, first on computers and then on prototypes, or checking the safety of cars on real people instead of dolls - their physical models). The particular importance of simulation is: better understanding of the system (it reveals oversights in design), improving efficiency (it reveals problems in systems such as bottlenecks), testing alternatives (it avoids expensive and sometimes risky trial-and-error experimentation on a real system), saving time and money (the cost of simulation is small compared to the benefit it provides), creating virtual environments (training pilots or drivers, operators in nuclear power plants).

Information obtained from experiments on poorly made models can often be not only useless, but sometimes harmful.

1.4 Methodology for modeling and simulating the movement of classical and pseudometric aircraft

In the modeling and simulation process (which are often considered together as compatible techniques with the same goal), the following stages can be observed (Figure 2).

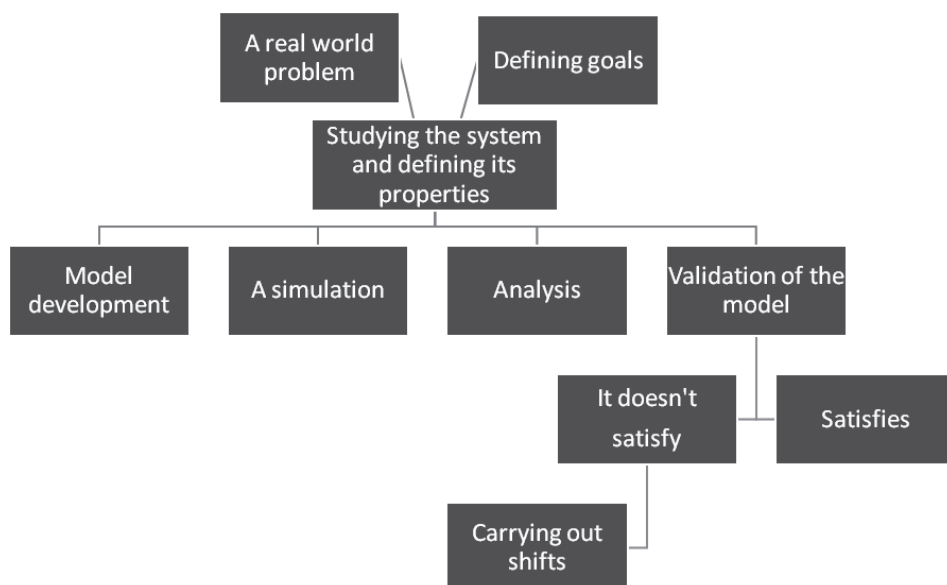


Figure 2. Methodology for modeling and simulation

1.4.1. Subject, objectives, and hypotheses of the research

The subject of this research is a simulation model for solving differential equations with six degrees of freedom for determining the accuracy of an aircraft in the FORTRAN programming language („Formula Translation“) [8].

This defined subject of the research includes three specific structural factors of the research subject:

In the first part of the work, an analysis and simulation of the aerodynamic calculation of the 40mm aircraft was performed for different flight speeds [3]. The aerodynamic calculation yielded values of aerodynamic coefficients, which are necessary for further work.

In the second part, a system of differential equations is defined by a six-degree-of-freedom motion model [1,2], and a flight simulation is performed in the FORTRAN [8] programming package. This model takes into account the effects of aerodynamic forces and the atmosphere on the aircraft. The SB06.FOR [2] program written in the FORTRAN programming language was used as the basis for solving the system of differential equations. The program solution provides data on changes in:

- range, ordinate, direction, angular velocity, flight speed, and angle of attack as a function of flight time and initial angle;
- the stability of flight for the aircraft as a function of flight time and distance traveled, using coefficients of gyroscopic and dynamic stability at the initial part and derivatives at the curved part of the trajectory;
- changes in the angle of attack around the u-axis and the angle of slide around the h-axis. The third part is dedicated to determining the accuracy of the aircraft for a three-dimensional target. The FORTRAN programming package was also used to solve this problem, and the existing FORTRAN solution called TVERP.FOR [2] was used as the basis for solving the problem and conceiving a new program solution.

The scientific goals intended to be achieved in this research are the description and application of an aircraft motion model with six degrees of freedom, the representation and scientific solution of a system of differential equations using the six-degree-of-freedom method in the Fortran programming package. The main hypothesis in this work is „It is possible to define a direct external ballistics task, which determines: the physical model (forces and moments acting on the aircraft); the mathematical model of flight (differential equations of aircraft motion); the simulation model (path elements - coordinates of the aircraft's center of gravity on the path and flight speed - changes in coordinates over time); the influence of all disturbances on the deviation of path elements.“ The auxiliary hypotheses in this work are:

- a) by studying the conditions of regularity of aircraft motion around the center of gravity, it is possible to determine the flight stability on the path and the probability of hitting a defined target;

b) by studying the parameters that affect the aircraft's motion in the atmosphere and the differential coefficients of corrections, it is possible to reduce the path elements to current meteorological conditions;

c) by developing experimental methods and instruments for measuring sizes that characterize the path or flight conditions of the aircraft, it is possible to obtain parameters in real conditions;

d) the obtained results allow the creation of targeting tables necessary for future users to determine targeting elements;

e) it is possible to perform a reverse (inverse) calculation, defining the design characteristics of the aircraft that will allow them to have the required flight characteristics and predicted effect on the target under certain conditions.

The path of the aircraft represents the geometric location of points that describe the center of gravity of the aircraft as it moves from the barrel mouth to the impact point. In the general case, the aircraft path is a three-dimensional curve.

2 METHODOLOGY OF MODELING AND SIMULATION OF THE MOVEMENT OF AN AXISYMMETRIC AIRCRAFT

2.1 Task formulation, definition and development of the physical model

Before proceeding to the actual modeling and simulation, it is necessary to clearly set the tasks and define the research goals, or the purpose of the model. The choice of the type of model and the degree of its idealization (approximation) directly depends on the set modeling and simulation goals of the given system.

A classic aircraft represents a rotationally rigid body with defined geometric and dynamic characteristics, or constructive parameters. This type of aircraft does not have additional aerodynamic surfaces (wings, flaps, etc.), does not have additional energy resources during movement in the form of reactive force (rocket engine) and its stability during flight is ensured by the angular speed around the main longitudinal axis (dynamic and gyroscopic stability). It moves in the atmosphere from the „mouth” of the weapon tube - a weapon with a defined initial speed and initial angle relative to the launch site. The shape of the classical symmetrical model of an aircraft has evolved over the years in accordance with the technical and technological development of society, or the development of scientific and technical and military-technical disciplines.

Classic symmetrical aircraft models achieve movement in the atmosphere only on the basis of the initial energy resource in the form of initial speed, so in addition to the effect of the Earth's gravity, the most significant influence on movement is air resistance, or aerodynamic force and its moment. Dimensionless represented components of the total aerodynamic force and moment, aerodynamic coefficients depend on the body's movement speed, or flow speed, the character of the flow, conditioned by the shape and position of the body

in the flow, as well as angular speeds of the body. The functional dependence of the aerodynamic coefficients on the individual influencing parameters, or their derivative, such as the attack angle, components of angular speeds of the body, is represented by derivatives of aerodynamic coefficients [1, 2].

Knowing the values of aerodynamic coefficients, or their functional parts, represents the complete determination of the aerodynamic load (force and moment) acting on a classic symmetrical aircraft model. Knowing the aerodynamic force and moment, with the known effect of gravitational and Coriolis forces, in standard or current atmospheric conditions, enables the solution of the assumed model of movement of a symmetrical aircraft. The solution of the movement model should give a complete picture of the movement (position, speed, time, etc.) and stability during movement (orientation and angular position of the body during flight). An aircraft movement model that allows for a more comprehensive overview of the body movement with the analysis of its stability is the six-degree-of-freedom flight model [1,2]. This model allows for the study of the spatial complex movement of the classic symmetrical aircraft model.

By solving the set movement model, for known aircraft aerodynamic characteristics, the path elements - characteristics of the aircraft path are determined. The problem of aircraft movement is also reduced to defining the parameters of aircraft stability and the conditions under which stability is achieved, studying the impact of constructive characteristics, initial conditions of movement and atmospheric parameters on aircraft movement. Then, the application and development of experimental methods for determining the sizes that characterize the path and flight conditions of the aircraft. It is particularly important to determine specific aircraft constructive parameters - geometric, dynamic and energy properties, based on the required flight characteristics and the nature of the impact on the target.

Determining the values of aerodynamic coefficients is a special area of aerodynamic research, using semi-empirical methods and calculations [2], experimental testing in wind tunnels [2], or using numerical methods of fluid mechanics, i.e. CFD (Computational Fluid Dynamic) tools.

The use of a particular method, calculation, or experimental testing to determine the values of aerodynamic coefficients, according to previous research [2,3,4,5], is conditioned by their specific application and limitations, the level of accuracy of the obtained values. The character of change in the values of aerodynamic coefficients in relation to the most significant influential parameters (Mach number, angle of attack, Reynolds number), depending on the method of determining the values, confirms the correctness of the application of different procedures. A comparative analysis of the results of aerodynamic coefficients obtained by numerical methods, semi-empirical calculations, and experimental testing leads to a preliminary assessment of the quality of the values.

Software simulation of the movement of a classic ogive missile, defined by the values of aerodynamic coefficients, provides a comparative analysis of the elements of the path (flight time, range, height, derivative, speed) and stability parameters.

The importance of the impact of deviations in the values of aerodynamic coefficients is reflected in the quantitative and qualitative assessment of deviations in the values of path elements and stability indicators through the analysis of the flight of a classic ogive missile.

The ogive missile moves from the mouth of the gun barrel - weapon, through the atmosphere to the target, which can be anywhere in space. During its movement, the classic ogive missile is affected by the Earth's gravitational attractive force, Earth's translational inertial force, the Coriolis force due to the Earth's rotation, and the aerodynamic force of body interaction with air [1].

All forces except aerodynamic one's act on the center of mass of the body. The result of the aerodynamic force acting on the arm from the center of mass to its attack point is the aerodynamic moment. The movement of a symmetrical body - an aircraft relative to the Earth is relative, and the influence of Earth's rotation with angular velocity $\vec{\Omega}_E$ introduces the aircraft into translational movement.

The speed of the aircraft's movement relative to the Earth represents the relative speed \vec{V} , and the time projections of its derivatives along any coordinate system axis represent the components of relative acceleration [1,2,3]. In accordance with the general model of aircraft movement [1,2,3], the reactive force of the rocket engine, or the moment that the reactive force makes in relation to the center of mass of the aircraft, is omitted in the six-degree-of-freedom movement equations. The mass of the classical symmetrical aircraft model is constant during flight, as there is no change in the mass of the aircraft due to the work of the rocket engine. The model of the movement of a classical symmetrical aircraft with six degrees of freedom consists of four vector equations: vector equation of the movement speed of the aircraft's center of mass,

$$\frac{d\vec{r}_{CM}}{dt} = \vec{V}_k \quad (1)$$

vector equation of the relative acceleration of the aircraft's center of mass,

$$m \frac{d\vec{V}_k}{dt} = \vec{R} + m\vec{g} - m\vec{a}_{Cor} \quad (2)$$

vector equation of rotational movement about the aircraft's center of mass,

$$\frac{d\vec{H}}{dt} = \vec{M}_R \quad (3)$$

equation of angular velocity of aircraft movement,

$$\vec{\Omega} = \vec{\Omega}_E + \vec{\lambda} + \vec{\phi} + \vec{\psi} + \vec{\theta} + \vec{\phi} \quad (4)$$

where the parameters in equations (1) to (4) are:

- vector position of the aircraft's center of mass \vec{r}_{CM} ,
- mass of the aircraft m ,

- relative speed of movement of the aircraft's center of mass \vec{V}_K ,
- angular velocity of the Earth $\vec{\Omega}_E$,
- change in geographical longitude in unit time $\dot{\vec{\lambda}}$,
- change in geographical latitude in unit time $\dot{\vec{\varphi}}$,
- angular velocity of the aircraft about the longitudinal axis of the aircraft's coordinate system $\dot{\vec{\psi}}$,
- angular velocity of the aircraft about the lateral axis of the aircraft's coordinate system $\dot{\vec{\theta}}$,
- angular velocity of the aircraft about the normal axis of the aircraft's coordinate system $\dot{\vec{\phi}}$.

The resultant of the external forces that determine the movement of the center of mass of a symmetrical body is:

- aerodynamic force \vec{R} ,
- force of Earth's gravity $m\vec{g}$ (vector sum of Earth's attractive force and translational inertial forces) and
- Coriolis force $-m\vec{a}_{Cor}$.

The momentum of the aircraft's movement \vec{H} relative to the center of mass is equal to the resultant moment of all external forces acting outside the center of mass. The only force acting outside the center of mass is the aerodynamic force \vec{M}_R and its moment act on the body around the center of mass. The force of Earth's gravity and the Coriolis force also act on the center of mass and do not have moments. The above vector equations can be projected onto coordinate systems [1,2,3,4] according to the need to describe and calculate physical quantities.

Equation (1) is projected onto the axis of the coordinate system tied to the Earth (basic or local [1,2]). Equations (2), (3), and (4) are projected onto the axis of the coordinate system tied to the body (center of mass of the aircraft model) and depending on the character of the physical quantity, these are the geodetic, aeroballistics, dynamic, and stream coordinate systems [1,2]. Flight analysis in the aeroballistics coordinate system can be applied if the body has equal transverse moments of inertia: $I_{YY} = I_{ZZ}$ [1,2].

Classic symmetrical aircraft have this property. According to [1,2,4], for the basic coordinate system tied to the Earth, spherical coordinates represent:

- geographical longitude λ ,
- geographical latitude φ , and
- altitude of the aircraft's center of mass h .

Classical osnosometric models of aircraft operate at distances up to 20 km. For trajectories at these distances, the curvature of the Earth is usually neglected and the system of equations can be simplified by the relationships between the coordinate systems [1,2].

The relationship between spherical coordinates and the rectangular coordinates of the basic coordinate system tied to the launch site is represented, according to [1,2,4]:

- horizontal coordinate of the trajectory $x = R \cdot \varphi$, and
- vertical coordinate of the trajectory $z = h$,
- where $R = 6371118$ m and represents the radius of the Earth.

This model in the aerobalistics coordinate system is always applied to non-maneuverable aircraft, and sometimes to small-range rotating guided rockets.

The flight model is based on the property of the reduced inertia tensor. The reduced moment of inertia is identical in the aerobalistics and dynamic coordinate systems [1,2,4]. In this model, two angular velocities occur:

- angular velocity of the aircraft - aircraft $\vec{\Omega}$
- and angular velocity of the aerobalistics coordinate system $\vec{\Omega}_B$.

The attitude angles of the aircraft [1,2], ψ , θ and ϕ are determined in relation to the axes of the carried (geodetic) coordinate system angular velocities [1,2].

The angular velocity of the roll of the aerobalistic coordinate system according to [1,2] is"

$$p_B = -\tilde{r} \operatorname{tg} \theta, \quad (5)$$

Namely, the normal and transverse angular velocities are:

$$\tilde{q} = q \cos \phi - r \sin \phi, \quad (6)$$

$$\tilde{r} = q \sin \phi + r \cos \phi. \quad (7)$$

Vectors of the system of differential equations, in the aerobalistic coordinate system, are given by the following expressions [1,2]:

$$V_k = [u_k \quad \tilde{v}_k \quad \tilde{w}_k]^T \quad (8)$$

$$\Omega^B = [p \quad \tilde{q} \quad \tilde{r}]^T \quad (9)$$

$$\tilde{R} = [X \quad \tilde{Y} \quad \tilde{Z}]^T \quad (10)$$

$$\tilde{M}_R = [L \quad \tilde{M} \quad \tilde{N}]^T \quad (11)$$

The projected model with six degrees of freedom in the aerobalistics coordinate system means that vectors (6) to (11) are determined in that coordinate system. Vector equation (2), which describes the movement of the center of mass of the body and is transformed into matrix form using the components in the aerobalistics coordinate system. Most often, the angular velocity of the carried (geodetic) coordinate system [1,2,4] relative to Earth is neglected, i.e. the angular velocities $\vec{\Omega}_G = \vec{\Omega}_E$ are equal, and according to [1,2,4] has the following form,

$$\begin{bmatrix} 0 & -\tilde{r} & \tilde{q} \\ \tilde{r} & 0 & -p_B \\ -\tilde{q} & p_B & 0 \end{bmatrix} \begin{bmatrix} u_k \\ \tilde{v}_k \\ \tilde{w}_k \end{bmatrix} + \begin{bmatrix} \dot{u}_k \\ \dot{\tilde{v}}_k \\ \dot{\tilde{w}}_k \end{bmatrix} = \frac{1}{m} \begin{bmatrix} X \\ \tilde{Y} \\ \tilde{Z} \end{bmatrix} + L_{BG} \begin{bmatrix} 0 \\ 0 \\ g \end{bmatrix} - a_{Cor}^B \quad (12)$$

The values of the acceleration of the Earth's gravitational force and the Coriolis acceleration are given in the geodetic coordinate system [1,2,4]. The equation of motion around the center of mass in matrix form using the components in the aeroballistic coordinate system has the form [1,2,4],

$$\tilde{\Omega}_B^B \begin{bmatrix} H_x \\ \tilde{H}_y \\ \tilde{H}_z \end{bmatrix} + \begin{bmatrix} \dot{H}_x \\ \dot{\tilde{H}}_y \\ \dot{\tilde{H}}_z \end{bmatrix} = \begin{bmatrix} L \\ \tilde{M} \\ \tilde{N} \end{bmatrix} \quad (13)$$

he components of the kinetic momentum in the aeroballistic coordinate system are given by the following equation [1,2,4],

$$\begin{bmatrix} H_x \\ \tilde{H}_y \\ \tilde{H}_z \end{bmatrix} = L_{BD} \cdot I \cdot L_{DB} \cdot \Omega^B = I \cdot \Omega^B = I \cdot \left(\Omega_G^B + \begin{bmatrix} p \\ \tilde{q} \\ \tilde{r} \end{bmatrix} \right), \quad (14)$$

where,

– L_{BD} - the transformation matrix from the dynamic to the aeroballistics coordinate system [1,2],

– L_{DB} - the transformation matrix from the aeroballistics to the dynamic coordinate system [1,2].

The components of the kinetic momentum along the axis of the aeroballistics coordinate system are given by the expression [1,2,4],

$$\begin{bmatrix} H_x \\ \tilde{H}_y \\ \tilde{H}_z \end{bmatrix} = \begin{bmatrix} I_{XX} & 0 & 0 \\ 0 & I_{YY} & 0 \\ 0 & 0 & I_{YY} \end{bmatrix} \begin{bmatrix} p \\ \tilde{q} \\ \tilde{r} \end{bmatrix} = \begin{bmatrix} I_{XX}p \\ I_{YY}\tilde{q} \\ I_{YY}\tilde{r} \end{bmatrix} \quad (15)$$

Upon differentiating the components of the kinetic momentum $[I_{XX}p \ I_{YY}\tilde{q} \ I_{YY}\tilde{r}]^T$, the moments of inertia I_{XX} and I_{YY} do not differentiate, but only the components of the angular velocity of the aircraft [1,2]. The system of differential equations for flight in the aeroballistics coordinate system consists of:

– equations of motion for the center of mass - projections of the flight velocity of the aircraft on the axes of the coordinate system attached to the surface of the Earth at the launch site (most often the local coordinate system)

$$\begin{bmatrix} \dot{x} \\ \dot{y} \\ \dot{z} \end{bmatrix} = L_{LB} \begin{bmatrix} u_k \\ \tilde{v}_k \\ \tilde{w}_k \end{bmatrix}, \quad (16)$$

three scalar equations for the projection of the derivative of the relative velocity of the aircraft on the axes of the coordinate system onto the aeroballistic coordinate system,

$$\dot{u}_k = -\tilde{q}\tilde{w}_k + \tilde{r}\tilde{v}_k + \frac{X}{m} - g \sin \theta - a_{Corx}, \quad (17)$$

$$\dot{\tilde{v}}_k = p_B \tilde{w}_k - \tilde{r}u_k + \frac{\tilde{Y}}{m} - a_{Cor\tilde{y}}, \quad (18)$$

$$\dot{\tilde{w}}_k = -p_B \tilde{v}_k - \tilde{q}u_k + \frac{\tilde{Z}}{m} + g \cos \theta - a_{Cor\tilde{z}}, \quad (19)$$

three scalar equations for the projection of the derivative of the angular velocity of the aircraft on the axes of the coordinate system onto the aeroballistic coordinate system,

$$\dot{p} = \frac{L}{I_{XX}}, \quad (20)$$

$$\dot{\tilde{q}} = p_B \tilde{r} + \frac{-I_{XX} p \tilde{r} + \tilde{M}}{I_{YY}}, \quad (21)$$

$$\dot{\tilde{r}} = -p_B \tilde{q} + \frac{I_{XX} p \tilde{q} + \tilde{N}}{I_{YY}}, \quad (22)$$

three equations for the derivative of the attitude angles of the aircraft

$$\dot{\phi} = p + \tilde{r} \tan \theta, \quad (23)$$

$$\dot{\theta} = \tilde{q}, \quad (24)$$

$$\dot{\psi} = \frac{\tilde{r}}{\cos \theta}. \quad (25)$$

These equations should be supplemented with the algebraic equation (5) and equations that determine the components of the Coriolis acceleration in the aeroballistic coordinate system [1,2]. The components of the Earth's rotation in the geodetic coordinate system, whose axis has an azimuth θ . The Coriolis acceleration is given by [1,2,4] by the expression,

$$a_{Cor} = \begin{bmatrix} a_{xCor} \\ a_{yCor} \\ a_{zCor} \end{bmatrix} = 2\tilde{\Omega}_E^B V_k \quad (26)$$

where,

- V_k – are the components of the relative velocity of the center of mass of the aircraft,
- Ω_E^B – are the components of the angular velocity of the Earth in the aeroballistics coordinate system.

This model reduces the number of variables from 12 to 11. In the case of classical symmetrical aircraft, aerodynamic forces do not depend on the roll angle. It is then possible to neglect the variable ϕ and the equation that defines its derivative.

2.2 Studying the aircraft load and forming a structural scheme

The study of the load on the aircraft and the formation of the structural diagram involves identifying and determining the boundaries of the system, as well as its components and the way they interact. The variables of the system are defined, their arrangement and mutual relations, as well as the inputs and outputs of the system. Then the flows of material and energy in the system are observed, the locations where they are accumulated, their arrangement and mutual connections. Points at which external influences and noise can act are defined. Complex systems are decomposed into sub-systems that are easier to model. The range of possible changes in certain system variables is determined.

Experimentally, it has been determined that the axis of the gyroscopic aircraft does not coincide with the velocity vector - tangent to the path), but rather forms a certain angle with it, which is called the attack angle. This misalignment of the longitudinal axis of the aircraft and the velocity vector of the center of mass of the aircraft occurs due to the conditions under which the aircraft is launched from the weapon system, or weapon.

The aircraft is launched by burning gunpowder grains in the chamber, or the gunpowder chamber. The burning of gunpowder creates gunpowder gases that propel the aircraft along the tube and provide it with the necessary initial velocity at the mouth of the tube. After the aircraft leaves the tube, the gunpowder gases continue to escape and act on the bottom and rear of the aircraft, partially rotating the aircraft around the transverse axis. In addition, when the aircraft leaves the tube, the vibrations of the tube are transmitted to the aircraft, which are in continuous contact from firing to the exit of the aircraft at the mouth of the tube. The deviation of the axis of the aircraft from the velocity vector can also occur on the part of the path around the apex, due to the force of Earth's gravity. On this part of the path, when the inclination angle of the velocity vector

reaches zero at the apex and changes orientation, while the axis of the aircraft tends to maintain its original position. All this leads to the deviation of the axis of the aircraft from the velocity vector of the aircraft.

The aerodynamic force \vec{R} does not coincide with the axis of the aircraft, nor with the vector of its velocity, figure 1. The aerodynamic force does not act in the center of mass of the aircraft (CM), but at a certain point called the center of pressure (CP).

The effect of the total aerodynamic force outside the center of mass of the aircraft, or on the arm between the center of pressure and the center of mass of the aircraft, causes the aircraft to rotate around the pitch axis. The effect of the aerodynamic force on the aircraft's pitch angle is determined by the position of the center of pressure relative to the center of mass of the aircraft.

The aircraft's attitude relative to the direction of flight is determined by the pitch, roll, and yaw angles. The pitch angle is the angle between the longitudinal axis of the aircraft and the direction of flight, the roll angle is the angle between the transverse axis of the aircraft and the direction of flight, and the yaw angle is the angle between the normal to the plane of symmetry of the aircraft and the direction of flight. The aircraft's attitude is important for determining its stability and control. The forces acting on the aircraft during flight are divided into aerodynamic and inertial forces. Aerodynamic forces act on the aircraft due to the interaction of the aircraft with the air. Inertial forces act on the aircraft due to its acceleration or deceleration. The forces acting on the aircraft are resolved into forces and moments. Forces are resolved into lift, drag, and side force. Moments are resolved into pitch, roll, and yaw moments.

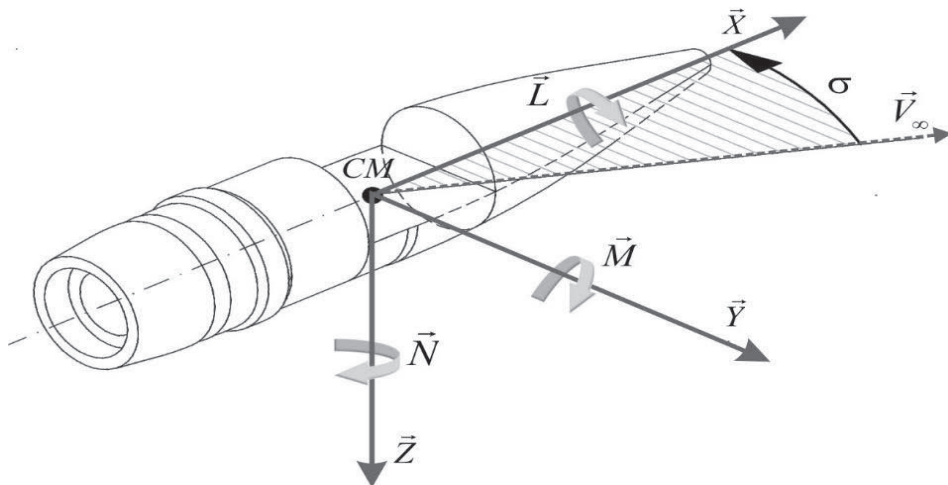


Figure 3. Aerodynamic force and moment

Total aerodynamic force is represented by an expression,

$$\vec{R} = q_{\infty} \cdot S \cdot \vec{C}_{\vec{R}}, \quad (27)$$

The aerodynamic moment is represented by an expression

$$M_R = \frac{\rho V^2}{2} \cdot S \cdot C_{\bar{R}} \cdot (x_{CM} - x_{CP}) \quad (28)$$

where

q_∞ – the dynamic pressure,
 S – reference surface of the cross-section of the aircraft,
 $C_{\bar{R}}$ – coefficient of total aerodynamic force,
 $x_{CM} - x_{CP}$ – distance of the center of pressure from the center of mass of the aircraft,
 x_{CP} – distance of the center of pressure from the top of the aircraft,
 x_{CM} – distance of the center of mass of the aircraft measured from the top of the aircraft are variables.

The value x_{CP} is variable, so it is more convenient to write the moment in the form

$$M_R = \frac{\rho V^2}{2} \cdot S \cdot d \cdot C_{\bar{M}_R} \quad (29)$$

where

d – the characteristic length, usually the reference diameter (caliber), and
 $C_{\bar{M}_R}$ – the coefficient of total aerodynamic moment are variables.

The attack angle σ is the main variable that determines the values of the components of aerodynamic force and moment. An aircraft undergoes rotational, precessional, and nutational movement in space [1,2]. Rotational movement represents rotation around the longitudinal axis at a high speed. This rotation is a condition for the stability of flight of classical symmetrical aircraft. One of the consequences of the action of aerodynamic force on a rotating body is the occurrence of precessional movement, which represents the movement of the longitudinal axis of the aircraft in a plane normal to the flow plane. At the same time, due to the high speed of rotation as a stabilizing factor, the value of the attack angle changes, or the angle between the longitudinal axis of the body and the velocity vector changes, as on the tangent to the path, which represents nutational movement. At each moment of movement, the flow picture around the aircraft changes, and therefore the sizes of the aerodynamic forces and moments change. Projections of the total aerodynamic force are usually given in the aerobalistic coordinate system with the coordinate origin tied to the center of mass of the aircraft. The total aerodynamic force is given by the expression [1,2,3],

$$\vec{R} = \begin{bmatrix} \vec{X} \\ \vec{Y} \\ \vec{Z} \end{bmatrix} \quad (30)$$

Where are the components of the total aerodynamic force, shown in image 2:

- \vec{X} - Axial force,
- \vec{Y} - Side force, and
- \vec{Z} - Normal force.

The total aerodynamic moment is represented by the components along the chosen coordinate system axis and, like the aerodynamic force, is most often given in the aeroballistics coordinate system [1,2,3],

$$\vec{M}_R = \begin{bmatrix} \vec{L} \\ \vec{M} \\ \vec{N} \end{bmatrix} \quad (31)$$

where the components of the total aerodynamic moment, shown in image 2, are:

- \vec{L} - Rolling moment,
- \vec{M} - Pitching moment, and
- \vec{N} - Yawing moment.

Transformation matrices allow for easy representation of known force and moment components in one coordinate system in another coordinate system. The representation of aerodynamic force and moment components in different coordinate systems is carried out in the flight calculation model for flight stability of aircraft.

2.3 Aerodynamic coefficients

The task of aerodynamics is to determine the aerodynamic coefficients depending on the constructive parameters of the aircraft, or the geometric shape of the aircraft. A theoretical approach based on knowledge of fluid mechanics leads to the numerical solution of a system of partial differential equations with given boundary conditions on the aircraft and in infinity. Aerodynamic coefficients are experimentally determined in a wind tunnel (aero tunnel) or based on the measured movement of the aircraft in flight. In this part of the work, the aim is to describe the dependencies of aerodynamic coefficients on the mentioned parameters. The simplest form of an aircraft is an axisymmetric surface - a classic axisymmetric aircraft. Slightly more complex combinations are axisymmetric surfaces and cross-shaped stabilizers, and then guided rocket configurations such as canards or the normal scheme.

The movement of an axisymmetric body - an aircraft in space consists of the translation of the center of mass and rotation around its own center of mass. The flight of these aircraft is characterized by conditions of small disturbances, assuming that the attack angles do not exceed a few degrees. This fact allows for the use of linear dependencies of aerodynamic parameters [1,2] in the calculation of aerodynamic coefficients and their gradients (derivatives). For an aircraft whose outer surface is axisymmetrical, each plane is simultaneously

a plane of symmetry of the outer surface. Aerodynamic coefficients represent dimensionless quantities of components of aerodynamic forces and moments. They are obtained by dividing actual components of aerodynamic forces and moments by the reference force and reference moment. These forces and moments have different values for different types of aircraft. The reference force is the product of the reference pressure and the reference surface, while the reference moment is the product of the reference force and the reference length. The reference pressure is

$$q_{\infty} = \frac{1}{2} \rho_{\infty} V_{\infty}^2, \quad (32)$$

Where are:

- ρ_{∞} – the density of undisturbed air flow,
- V_{∞} – the speed of movement of the aircraft, or the speed of undisturbed air flow.

The reference surface represents the circular cross-section of the diameter of a nominal caliber aircraft.

$$S = \frac{\pi}{4} d^2. \quad (33)$$

For the reference length, the size of the nominal caliber d is adopted, except for the angular speed around the longitudinal axis, when half the diameter is taken. Just as the components of aerodynamic forces and moments correspond to some coordinate system, so will the aerodynamic coefficients correspond to a specific coordinate system. Aerodynamic coefficients for the components of aerodynamic force are obtained when the components of aerodynamic force are divided by the dynamic pressure q_{∞} and the reference surface S . Aerodynamic coefficients are marked in accordance with the components of force with, C_x , C_y and C_z .

Aerodynamic coefficients for the components of moment are obtained when the components of aerodynamic moment are divided by the dynamic pressure, the reference surface, and the reference length - diameter, or for the rolling moment by half the diameter.

Aerodynamic coefficients depend on the following parameters:

- aerodynamic parameters
- Mach number Ma ,
- Reynolds number Re ,
- position of aerodynamic velocity relative to the aircraft
- component of spatial angle of attack σ (angle of attack α and angle of sideslip β),
- dimensionless angular velocity of change in position of aerodynamic velocity relative to the aircraft $\dot{\alpha}^*$ and $\dot{\beta}^*$,
- dimensionless angular velocity of the aircraft p^* , q^* and r^* .

The value of aerodynamic coefficients is given in Table 1."

Table 1.

Name of coefficient \ Coordinate system		Dynamic coordinate system	Aeroballistics coordinate system	Flow coordinate system
Aerodynamic coefficients of force	Axial forces	$C_X = \frac{X}{q_\infty S_{ref}}$	$C_X = \frac{X}{q_\infty S_{ref}}$	$C_{\bar{X}} = \frac{\bar{X}}{q_\infty S_{ref}}$
	Lateral forces	$C_Y = \frac{Y}{q_\infty S_{ref}}$	$C_{\tilde{Y}} = \frac{\tilde{Y}}{q_\infty S_{ref}}$	$C_{\bar{Y}} = \frac{\bar{Y}}{q_\infty S_{ref}}$
	Normal forces	$C_Z = \frac{Z}{q_\infty S_{ref}}$	$C_{\tilde{Z}} = \frac{\tilde{Z}}{q_\infty S_{ref}}$	$C_{\bar{Z}} = \frac{\bar{Z}}{q_\infty S_{ref}}$
Aerodynamic coefficients of moment	Rolling moment	$C_\ell = \frac{L}{q_\infty S_{ref} d/2}$	$C_\ell = \frac{L}{q_\infty S_{ref} d/2}$	$C_{\bar{\ell}} = \frac{\bar{L}}{q_\infty S_{ref} d/2}$
	Pitching moment	$C_m = \frac{M}{q_\infty S_{ref} d}$	$C_{\tilde{m}} = \frac{\tilde{M}}{q_\infty S_{ref} d}$	$C_{\bar{m}} = \frac{\bar{M}}{q_\infty S_{ref} d}$
	Yawing moment	$C_n = \frac{N}{q_\infty S_{ref} d}$	$C_{\tilde{n}} = \frac{\tilde{N}}{q_\infty S_{ref} d}$	$C_{\bar{n}} = \frac{\bar{N}}{q_\infty S_{ref} d}$

The aerodynamic force and moment according to the adopted notation for aerodynamic coefficients can be given by the following expressions,

$$R = \begin{bmatrix} X \\ Y \\ Z \end{bmatrix} = q_\infty S \begin{bmatrix} C_X \\ C_Y \\ C_Z \end{bmatrix}, \quad (34)$$

$$M_R = \begin{bmatrix} L \\ M \\ N \end{bmatrix} = q_\infty \cdot S \cdot d \cdot \begin{bmatrix} C_L \\ C_M \\ C_N \end{bmatrix}. \quad (35)$$

The components of aerodynamic force and moment are proportional to the dynamic pressure q_∞ and primarily depend on the square of the aerodynamic speed, diameter, density of air, and then on the aerodynamic coefficients. Upon changes in the altitude of the aircraft, the aerodynamic components are of lesser intensity due to the decrease in air density.

The Mach number is one of the basic quantities that determine the character of the airflow around aircraft, the behavior of the air, and its impact on force, representing the ratio of the aircraft's speed V_∞ to the speed of sound a , $Ma = V_\infty/a$. The airflow around aircraft can be divided into four categories based on the Mach number value:

- subsonic $Ma < 0,8$
- transonic $0,8 < Ma < 1,2$
- supersonic $1,2 < Ma < 5,0$
- hypersonic $Ma > 5,0$

When an aircraft moves at subsonic speeds $V_\infty < a$, the flow parameters around the aircraft change. These changes extend to all sides and, under their influence, the flow streamlines continually bend and adjust to the shape of the body before contact with it.

In the case of supersonic flow $V_\infty > a$, there is the appearance of shock waves, depending on the shape of the aircraft. The speed of the wave depends on the pressure increase ratio relative to the pressure in undisturbed flow. Ahead of the wave, the pressure of undisturbed flow prevails, and it increases sharply in the wave zone.

When flowing at supersonic speeds, a number of other phenomena characteristic of supersonic flow around aircraft appear [1,3]: such as the appearance of shock and expansion waves, the appearance of the Mach cone, turbulent flow, boundary layer, and intense vortices behind the bottom of the aircraft.

2.4 Development of the model

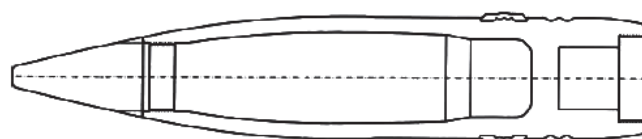
The next step is the development of the model. Before modeling, decisions are made about the simplifications and approximations that will be made, in accordance with the goals of the specific research. In the case of mathematical modeling, the approach is to determine the equations of the parts of the system and the system as a whole based on insight into the system and knowledge of the physical laws that apply to it, always keeping in mind the basic laws of conservation. If, first, each element of the system and each of their interactions are described by a mathematical relationship, where the set of all these relationships is considered a mathematical model of the system, it is an inductive (bottom-up) method of modeling. Another approach is when a global model is immediately formed, consisting of a certain number of relationships. In this case, it is a deductive (top-down) method of modeling. Depending on the needs, the mathematical model can be expressed in the form of differential equations, transfer functions, or state space. Usually, a simulation model suitable for computer application is then made.

2.4.1 Classical symmetric aircraft model

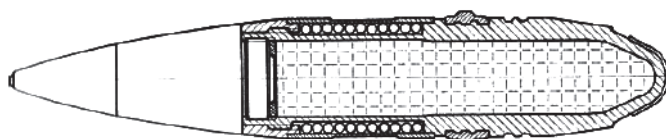
The calculation of flow and aerodynamic loading of symmetric body was performed on a model of a classical symmetric aircraft with a caliber of 40 mm. The aircrafts with a caliber of 40 mm are typical representatives of classical symmetric aircrafts, which move at a maximum speed of about [speed]. This group of aircraft includes, in addition to aircraft with conventional flat bottom (marking- current) and aircraft with bulbous semi-spherical bottom (TKL and L70) [3,5,6,7].

In this work, several aircraft in use were considered. A few types of 40 mm aircraft [3,5,6,7] were selected for which the results of the trajectory elements will be compared:

- Aircraft type T, representing a 40 mm aircraft marking-current TO M75 [3,4,5,6,7], consisting of a launcher, front booster section, cylindrical body, rear cone, and flat bottom, as shown in Figure 4a.
- Aircraft type K, representing a 40 mm aircraft with balls TKL M75 [3,4,5,6,7], consisting of a launcher, front booster section, cylindrical body, rear cone and semi-spherical bulbous bottom as shown in Figure 4b.
- Aircraft type M, representing a model of a 40 mm aircraft, consisting of a launcher, front booster section, cylindrical body, rear cone, and rear cone [2,14], as shown in Figure 5.



a) T-type aircraft, 40 mm current-marking TO M75



b) Type K launcher, 40 mm current with TKL M75 balls

Figure 4. Types of T and K aircraft

In this work, an analysis of the M type aircraft model was carried out, whose shape is based on the geometric characteristics of the front part, body, and rear cone of the K type aircraft, and with a flat bottom in accordance with the T type aircraft [2,3], with characteristic parameters given in table 1, [3,5,6].

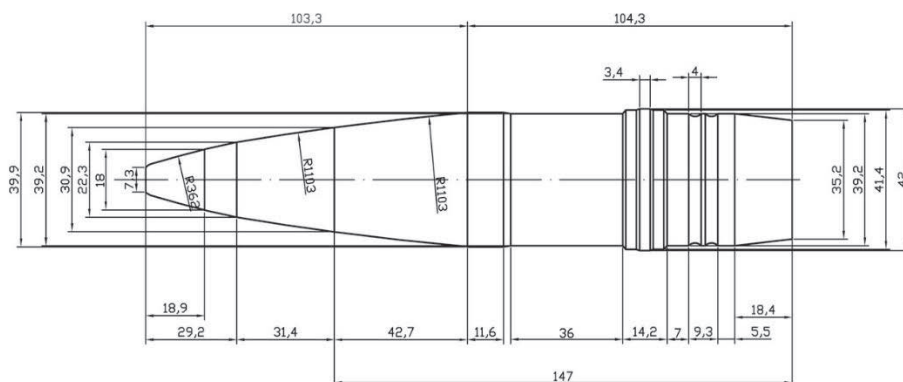


Image 5. Model of the M type aircraft

The characteristic design parameters for the 40 mm M type aircraft model [3,4,5], according to the experimental data of similar T, K and other types of aircraft [3,4,5,6,7], are given in table 2.

Table 2. Parameters of the M type aircraft model

<i>Parameter</i>	<i>Label</i>	<i>Value</i>
<i>Mass</i>	m	0,960 kg
<i>Ballistic coefficient</i>	C_{43}	0,68
<i>Center of mass position from the top</i>	x_{CM}	133 mm
<i>Referent diameter</i>	d	39,9 mm
<i>Diameter of cylindrical part</i>	d_2	39,2 mm
<i>Base diameter</i>	d_3	35,2 mm
<i>Nose diameter</i>	d_1	7,3 mm
<i>Rotating band diameter</i>	d_4	42,0 mm
<i>Total length</i>	l	207,6 mm
<i>Nose length</i>	l_1	103,3 mm
<i>Cylindrical part length</i>	l_2	85,9 mm
<i>Back cone length</i>	l_3	18,4 mm
<i>Front ogive radius</i>	R_{1o}	1103 mm

For the presented M type aircraft model, aerodynamic calculations were carried out through existing semi-experimental calculations [1,2,3], or experimental research in the form of model obstruction in the wind tunnel, [5,6]. Semi-experimental calculations were developed for the T type aircraft with a flat bottom. Through these calculations, results of aerodynamic coefficients were obtained, that is, values of aerodynamic coefficients and derivatives of aerodynamic coefficients, necessary for defining the input parameters of the flight motion simulation with six degrees of freedom. Also, to evaluate and verify the results of aerodynamic calculations, a comparative analysis was carried out with catalog values of similar types of T and K aircraft. Following the verification of the model, i.e., checking whether the model is properly implemented, as the modeler intended. During verification, the model is tested and errors in implementation are corrected.

The software solution is composed based on the system of equations for the model with six degrees of freedom of the classic aircraft given in the first part of the work. Figure 6 shows the block diagram of the SB6A1 software solution. The independent subroutines are connected by a dotted line, whose results represent the input values of the necessary data for the software modules.

The flight model solution with six degrees of freedom provides realistic solutions that can safely replace experiments [1,2]. The system of differential and algebraic equations is nonlinear and has variable coefficients. There is no analytical solution for the system of equations. The system is solved using numerical integration methods, step by step, in discrete time intervals. The numerical solution includes the effects of forces, moments, and impact parameters on flight stability. Simulation of the movement - flight of the aircraft model, performed using the software solution, provides values for path elements and stability parameters during movement. The graphical representation of the results for aerodynamics is shown in Figure 7.

3.1.1 Initial data for the flight calculation of the aircraft model

Calculations of the movement of the model aircraft were performed for two types of values of aerodynamic coefficients: values of aerodynamic coefficients obtained by calculation, (calc.) and values obtained by experimental research, (exp.). The calculation results were analyzed against each other in relation to the experimental data on the trajectory elements at characteristic points on the trajectory for similar types of aircraft according to the Shooting Tables [5,6].

For the type M aircraft model, Figure 4, input data was created in the form of files, that is, input subprograms of the software solution and grouped according to the following:

- the first group of data on initial and boundary conditions for aircraft flight calculation: initial time, calculation step, method of stopping the calculation - boundary data, interval and step of calculation of stability parameters, wind components, initial position of the aircraft, initial velocity of the aircraft, initial angular velocity of the aircraft and angular initial position of the aircraft (attitude),
- the second group of data on the geometric and dynamic properties of the aircraft: the position of the center of mass, the main moments of inertia, the diameter and mass of the aircraft model,
- the third group of data on the aerodynamic properties of the aircraft: aerodynamic coefficients and derivatives of forces and moments in relation to Mach number values.

Due to the need to compare the obtained values on the path elements and flight stability parameters, the second group of data does not change, because

it represents the invariable properties of the type M aircraft model. The third group of data changes depending on the type of obtained data on aerodynamic characteristics, for the type M aircraft model - by calculation and examination. In the first group of data, the starting and limiting values were changed depending on the needs of the calculation. Namely, the starting angle values were varied in order to obtain the required horizontal distance, height, that is, the shape of the path, the assumed movement of the model aircraft. Also, depending on the position of the target at a certain range and height, i.e. the predicted flight time, the boundary conditions were changed. Boundary condition values stop the calculation at a defined point and provide values about path elements and stability parameters.

The result of the calculation by the software solution, represents three groups of data in functional dependence on time, as independent variables:

- a) path elements - movement characteristics,
 - coordinates of the center of mass of the aircraft (x , y and z),
 - flight time - aircraft movements (t),
 - angular position of the aircraft in space area (χ and γ),
 - flight speed components - aircraft movement (u , v and w),
 - components of the angular speed of the aircraft (p , q and r),
- b) stability parameters
 - damping coefficients - the roots of the solution of the stability equation (λ_1 i λ_2),
 - gyroscopic stability factor in the form ($1/Sg$),
 - dynamic stability factor in the form ($Sd(2 - Sd)$),
 - angle of attack in the vertical plane and slip angle (α i β),
- c) accuracy measures and probability of hitting the target,
 - probable deviation by height, direction and distance (Vv , Vp and Vd),
 - differential range coefficients ($\partial X/\partial V_0$, $\partial X/\partial \theta_0$, $\partial X/\partial \tau_0$, $\partial X/\partial p_0$, $\partial X/\partial W_x$),

For the type M aircraft model, dynamic properties were determined using the Inventor software package [2]. In addition to the position of the center of mass in relation to the top of the aircraft, the moments of inertia along the main axes of the model aircraft were also determined:

the position of the center of mass from the top of the aircraft, $x_{CM} = 133 \text{ mm}$,
 longitudinal moment of inertia of the model, $I_{xx} = 263,6 \text{ kg mm}^2$,
 transverse moments of inertia of the model, $I_{yy} = I_{zz} = 3,052 \cdot 10^3 \text{ kg mm}^2$.

According to the given calculation, the mixed moments of inertia of the type M aircraft model are negligibly small, that is, they are approximately equal to zero, which is in accordance with the assumption of the given physical model of the classic axisymmetric aircraft.

Geometrical and dynamic properties of the aircraft model type M (second group of initial data) with sizes, symbols and values used in the program solution of movement with six degrees of freedom are given according to [1,2].

The data on aerodynamic characteristics used in the program solution for the calculation of aircraft flight with the model of six degrees of freedom of movement represent aerodynamic coefficients and derivatives according to [1,2].

Data on the elements of the trajectory for type T and type K aircraft - range, height of the trajectory ordinate, speed at the target, flight time, deviation of the drop point from the vertical plane (derivation) were taken from the literature [3,5,6], for comparison. The data from the firing tables represent the integration of experimental polygon tests of aircraft and weapons with calculations of aircraft flight in standard atmospheric conditions. Shooting tables are important for the verification of calculation data obtained by the model with six degrees of freedom of movement for the type M aircraft model, as well as for the assessment the influence of aerodynamic coefficients on the characteristics and stability of movement.

3.1.2 Analysis of the Flight Path Calculation Results of the Aircraft Model

The flight simulation of the aircraft model was performed with a software solution, resulting in data on flight path elements and stability parameters for different initial angle values. The aerodynamic characteristics used for the calculation of the flight of the aircraft model represent a combination of the values of aerodynamic coefficients obtained from the ADK0 and ADK1 calculations [1], and the values of the aerodynamic coefficients obtained from experimental research of the type M aircraft model [1]. The criterion for combining these values of aerodynamic coefficients is based on the following:

- For the values of the axial force coefficient at zero angle of attack, in the transonic speed range, experimental values were used.

- For the values of the axial force coefficient at zero angle of attack, in the supersonic speed range, the average values of the ADK0 calculations and tests were used.

- For the values of the axial force coefficient at zero angle of attack, in the subsonic range, the values from the ADK0 calculation results were used.

- For the values of the derivatives of the aerodynamic coefficients due to angular velocities C_{Lp} , $C_{Yp\sigma}$, $C_{Np\sigma}$, C_{Mq} and $C_{M\dot{\sigma}}$ the values obtained from the ADK1 calculation were used and

- For the values of the derivatives of the aerodynamic coefficients due to angle of attack $C_{Z\sigma}$, $C_{N\sigma}$, and $C_{M\sigma}$ the values determined by experimental tests were used. In order to compare the flight characteristics of the type M aircraft model with similar aircraft, the flight tables for the type K aircraft [3,5]

were used. Table 3 gives a comparative display of the flight path element values for type K aircraft according to the flight tables [2,5] and flight path elements for the type M aircraft model according to the calculations performed with six degrees of freedom of motion.

Table 3. Comparative display of flight path elements for type K and type M aircrafts

Take the corner	Distance		Flight weather		Falling speed		Head height		Derivation	
	x_c (m)		t_c (s)		V_c (m/s)		y_s (m)		z_c (m)	
θ_0 (°)	Tip K	Tip M	Tip K	Tip M	Tip K	Tip M	Tip K	Tip M	Tip K	Tip M
1	2	3	4	5	6	7	8	9	10	11
0,77	2000	1999,8	2,5	2,48	645	660,7	7,4	7,3	0,7	0,6
5,40	6000	6085,7	13	13,06	279	262,9	223	218,1	15	26,5
9,18	7400	7589,0	18,9	19,55	243	226,9	493	516,0	32	64,1
10,48	7800	7979,8	20,7	21,46	236	221,8	598	627,8	39	79,1
20,12	10000	10100	33,2	33,95	219	216,0	1530	1605,5	99	222,3

The values of the flight path elements of the aircraft model are given in the odd columns of Table 2 (3, 5, 7, 9). The flight path elements of type K aircraft, according to [5], are given in the even columns of Table 2 (2, 4, 6, 8). Based on the displayed values of the flight path elements, for the same initial conditions of motion, a large similarity of the paths of these two types of aircraft is observed. The similarity of the paths is expected, given the geometric similarity of these aircraft. The average difference of the values of the flight path elements obtained in the characteristic points of type M aircraft compared to type K aircraft, in relation to the interval of initial angles studied from 0.77° to 20.12°, are as follows:

- range is greater by 1.33%,
- flight time is longer by 1.31%,
- sink rate is lower by 1.97%,
- height of the flight path apex is greater by 1.45%, and t
- he derivative is greater by 68.35% or 25.75 m

Figures 7 and 8 show the flight paths of the aircraft type M in the vertical plane for different initial angles. The figures also show the characteristic points of the flight path (apogee and perigee) for the aircraft type K [3,5].

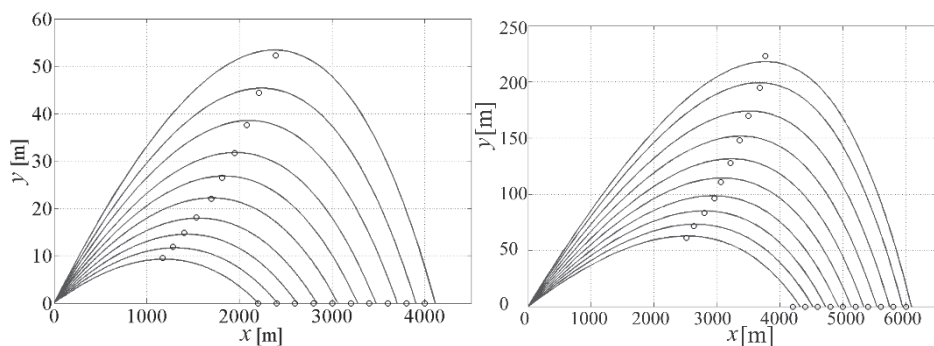


Figure 7. Flight paths of the aircraft type M and the apogee and perigee of the aircraft type K (up to 6 km)

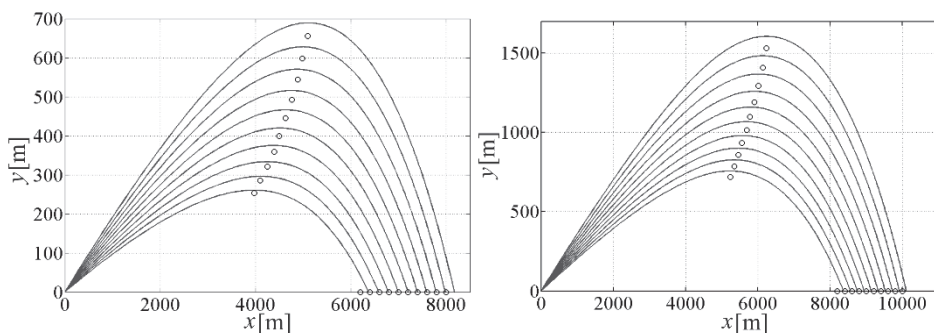


Figure 8. Flight paths of the aircraft type M and the apogee and perigee of the aircraft type K (up to 10 km)

According to the presented character of the change in flight paths over a wide range of initial angles, a certain similarity is observed between the calculated flight paths of the aircraft model and the apogee and perigee of the aircraft type K. Data on flight elements for the aircraft type K, according to [3,5], represents values determined experimentally (on a polygon) and precision measures for standard meteorological (atmospheric) conditions. These tests were conducted by the manufacturer and represent an extremely expensive and complex process. For the purposes of this work, there were no technical-economic conditions for such tests (external ballistics) to be conducted on the polygon for the aircraft model. Data on flight elements for the aircraft types K and T in use in the military served as reference data for assessing the character of changes in flight elements of the aircraft model, given that the aircraft model has a similar geometric shape, dynamic properties, speed of movement and functional purpose to aircraft types T and K. Figures 9 and 10 show the spatial flight paths of the aircraft model type M for different initial angles. The figures also show the characteristic points of the flight path (apogee and perigee) for the aircraft type K.

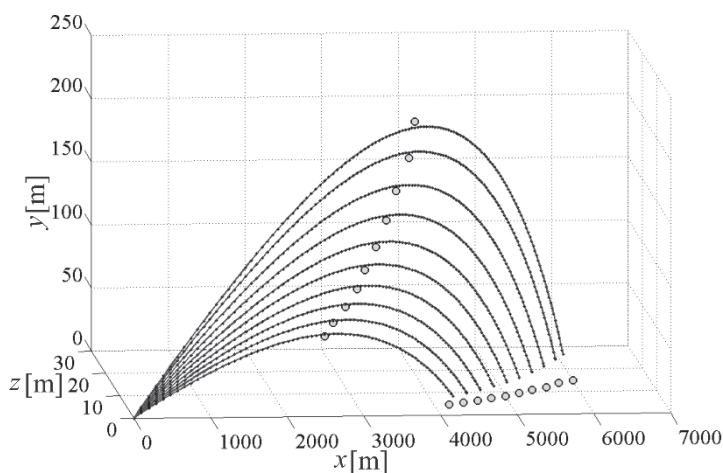


Figure 9. The spatial flight paths of the aircraft type M and the apogee and perigee of the aircraft type K

It is noticeable from the figure that there are differences in the movement of the flight path from the vertical plane along the Oz - axis, known as "derivation of the flight path" due to the gyroscopic effect (z_c) [1,2]. The impact of the gyroscopic effect on the movement of the aircraft is given in the calculation in the form of initial values of the angular velocity components of the aircraft around the Oy -axis and r_0 around the Oz -axis, according to empirical data for similar types of symmetric aircrafts [3,4].

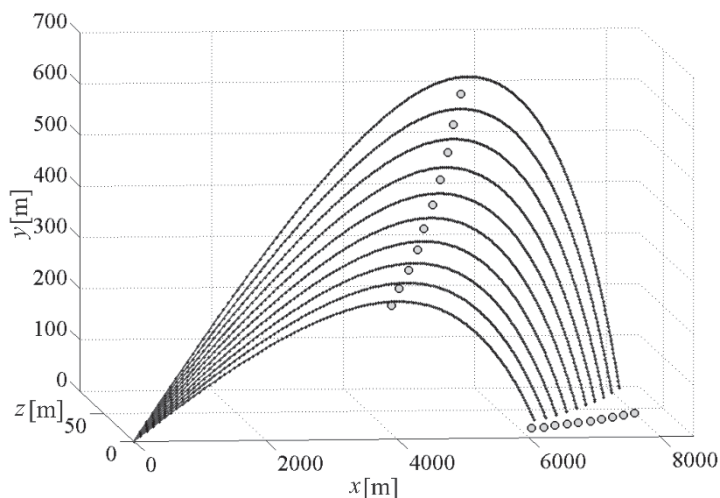


Figure 10. The spatial flight paths of the aircraft type M and the apogee and perigee of the aircraft type K

The values of these angular velocities are given in Table 5.1, but there is no available literature on the measured values from polygonal testing for aircrafts

similar to the aircraft type M. Experimental measurement of deviation of the flight path from the vertical plane is complex and must eliminate the impact of wind during polygonal testing. The aforementioned reasons are the main reason for the lack of consistency in the obtained values of the derivation for the aircraft model. The impact of aerodynamic coefficients on the movement of a symmetric body, using the example of the aircraft type M model, is reflected in the shape of the flight path, the speed of movement, and especially in the parameters of movement stability. The accuracy of determining the values of aerodynamic coefficients and their derivatives is one of the key factors for a reliable assessment of the flight of a "high-speed" symmetric aircraft. This is where the importance of improving existing calculations and the accuracy of determining aerodynamic coefficients lies, primarily in order to reduce the cost of experimental (aerodynamic and external ballistic) testing, and particularly in the faster development of new aircrafts

4 ANALYSIS OF THE IMPACT OF CHANGES IN AERODYNAMIC COEFFICIENTS ON THE MOVEMENT OF A CLASSICAL AIRCRAFT

The analysis of the impact of aerodynamic coefficients on the movement of a symmetric body was carried out on the example of a model of a classical symmetric aircraft, type M. Calculations and experimental research have provided values for the aerodynamic coefficients. It was found that the differences in the obtained values of the aerodynamic coefficients are reflected in the values of the obtained flight path elements, or in the values of stability parameters. In order to determine the impact of aerodynamic coefficients on the movement of a symmetric body, the impact of each aerodynamic coefficient and derivative was analyzed separately. The analysis of the impact of deviation values of the aerodynamic coefficients was considered for characteristic points on the aircraft's flight path. The calculation was done in accordance with the presented program solution - flight simulation with six degrees of freedom of movement.

4.1 Overall impact of aerodynamic coefficients

According to the research conducted on the impact of aerodynamic coefficients and their derivatives on the flight path elements and the stability of the aircraft model, the widest range of impact is that of the axial force coefficient. On the coordinates of the position of the center of mass of the aircraft model during motion x and y the greatest impact is that of the axial force coefficient C_{x0} at zero angle of attack, while on the coordinate z , in addition to this coefficient, the static derivatives of the normal force coefficients $C_{z\sigma}$, the yawing moment coefficients $C_{M\sigma}$ and the dynamic derivative of the rolling moment coefficient have a significant impact C_{Lp} .

On the velocity of the aircraft V , the greatest and most significant impact is that of the axial force coefficient C_{x0} at zero angle of attack. On the longitudinal angular velocity p of the aircraft, the most significant impact is that of the axial force coefficient C_{x0} and the dynamic derivative of the rolling moment coefficient C_{Lp} . On the angle of attack α , almost all aerodynamic coefficients have an impact. The most significant impacts are those of the static derivative of the normal force coefficient $C_{Z\alpha}$ and the dynamic derivative of the rolling moment coefficient $C_{M\sigma}$. On the angle of sideslip C_{Lp} , all aerodynamic coefficients have an impact.

The most significant impacts are those of the static derivatives of the normal force coefficients $C_{Z\alpha}$, the yawing moment coefficients $C_{M\sigma}$ and the dynamic derivative of the rolling moment coefficient $C_{M\sigma}$.

On the damping coefficients λ_1 and λ_2 , all aerodynamic coefficients have an impact. The most significant impacts are those of the dynamic derivatives of the yawing moment coefficients $C_{Np\sigma}$ and the yawing moment coefficients $C_{M\dot{\sigma}} + C_{Mq}$.

On the factor of gyroscopic stability $1/Sg$, the most significant impact is that of the axial force coefficient C_{x0} , the static derivative of the yawing moment coefficient $C_{M\sigma}$ and the dynamic derivative of the rolling moment coefficient C_{Lp} . On the factor of dynamic stability $Sd(2 - Sd)$, the most significant impact is that of the dynamic derivative of the yawing moment coefficient $C_{Np\sigma}$, the dynamic derivative of the yawing moment coefficient $C_{M\dot{\sigma}} + C_{Mq}$ and the axial force coefficient C_{x0} .

5 CONCLUSION

By simulating movement in a software solution with six degrees of freedom over a wide range of initial angles, the path elements of the aircraft model for calculated and experimentally determined aerodynamic coefficients show a high degree of alignment. The dependence curve of ordinate in relation to horizontal distance (flight path in the vertical plane) has an identical change character. There are very small deviations in the falling part of the path. In this way, it has been confirmed that the process of simulating the movement of an aircraft based on a defined model, on a computer, replaces extremely expensive experiments and shortens and speeds up the research process.

The external ballistics calculations and research carried out in this work cover the research tasks set out:

- Determining the characteristics of the path of a classical symmetrical aircraft described by a physical and mathematical model of movement,
- Determining the stability of the movement of a classical symmetrical aircraft according to defined laws of stability and in accordance with the conditions of movement of the aircraft model,
- The impact of design characteristics, initial conditions of movement and atmospheric parameters on the movement of a symmetrical aircraft was analyzed, and

- Calculations and analysis of all aerodynamic coefficients of the forces and moments components were carried out.

The basic hypothesis in this work is confirmed that it is possible to define a direct task of external ballistics, which determined:

- Defining the physical and mathematical model of flight (differential equations of aircraft movement);
- Realizing the simulation of the model and determining the path elements (coordinates of the aircraft's center of gravity on the path) and flight speed (changes in coordinates over time);
- Analyzing the impact of all disturbances on the deviation of trajectory elements is nonlinear.

Auxiliary hypotheses were also confirmed that it is possible to determine flight stability on the path, the probability of hitting a defined target and creating shooting tables as a reliable source of external ballistics data.

Small disturbances were considered, which made the deviation of elements linear. The calculation of the path of classical aircraft is based on the described movement model. Research of aerodynamic characteristics, as well as external ballistics research, have an essential role in the practical verification of theoretical and calculated research results.

The model of the action of aerodynamic force and moment, with its components, was discussed. The results show that the proposed model can provide a good approximation of the actual movement of the aircraft.

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Душан Б. РЕГОДИЋ

Дамир Д. ЈЕРКОВИЋ

МОДЕЛИРАЊЕ И СИМУЛАЦИЈА ДИНАМИЧКИХ СИСТЕМА У ФУНКЦИЈИ ОСНОВНИХ ИСТРАЖИВАЊА У ТЕХНИЧКО-ТЕХНОЛОШКИМ НАУКАМА

Резиме

Модел као синтетска апстракција реалности се примењује у инжењерској пракси ради изучавања особина и понашања динамичког система. У раду је дат пример једноставног физичког модела летелице. Дефинисан је математички модел за испитивање примарних карактеристика лета. У раду се користи предиктивни модел који служи за анализу последица различитих стратегија управљања системом. Предиктивним моделом су повезане зависне и независне променљиве вредности које описују стања система. У раду су приказане симулације на три модела. У раду се користе математичке и статистичке методе. Методе параметарске статистике се заснивају на нормалној расподели приликом прогнозирања неких појава са одређеном вероватноћом. Симулације у овом раду представљају извршавање операција на моделу система у циљу добијања жељених сазнања о понашању система. То је једноставан и сигуран начин експериментисања на моделу. Посматран је реалан динамички систем чије кретање је описано са дванаест диференцијалних једначина. Комплексност проблема решавања диференцијалних једначина захтева примену нумеричке методе Рунге-Кутта четвртог реда.

Овим симулацијама се омогућује разумевању кретања сложених динамичких система, пројектовању нових и побољшању перформанси постојећих система. Посебан допринос рада је у великим уштедама свих ресурса. Допринос самог рада је у потврди да је незаменљива улога симулације при научним истраживањима због: бољег разумевања система (открива превиде при пројектовању), побољшање ефикасности (открива проблеме у системима), испробавање алтернатива (избегава се скупо, а понекад и опасно експериментисање методом покушаја и промашаја на реалном систему), уштеда времена, људског ресурса и новца (цена симулације је мала у односу на добит коју даје) и креирање виртуелних окружења.

Кључне речи: диференцијалне једначине, модел, симулација, динамички систем, летелица.

*Wolfgang R. ROHRBACH**

European academy of Sciences and Humanities (AASA)

BEDROHUNG DER MENSCHHEIT DURCH VIER MEGA-SCHOCKWELLEN

Abstracts: Der Lebensstandard in Europa und anderen Regionen der sogenannten zivilisierten Welt wird durch vier sich überlagernde Mega-schockwellen bedroht – demografische, wirtschaftliche, technologische und ökologische. Ohne Gegenmaßnahmen könnten einige Regionen Europas gravierende Wohlstandsverluste erleiden.

Das zwanzigste Jahrhundert war ein Zeitalter der Überbevölkerung. Das 21. Jahrhundert wird das Jahrhundert der demografischen Alterung der Bevölkerung in Europa sein, wie Untersuchungen der Vereinten Nationen bestätigen.

Im Zeitraum von 2015 bis 2020 erwartet die UNO, dass die Bevölkerung um etwa 78 Millionen Menschen pro Jahr wächst und dass im Jahr 2050 9,7 Milliarden Menschen auf der Erde leben werden. UN-Prognosen gehen davon aus, dass im Jahr 2100 10,9 bis 12 Milliarden Menschen auf der Welt leben werden [1].

Die Folgen eines solchen Wachstums werden sein: übermäßige Ausbeutung nicht erneuerbarer und erneuerbarer Ressourcen; Zunahme der Müllmenge; Zunahme der Umweltverschmutzung; weitere Erwärmung der Atmosphäre; Verstärkung des Treibhauseffekts; Lieferengpässe etc

Um die Folgen dieser Situation abzumildern, wird es notwendig sein, wissenschaftliche Grundlagenforschung zu betreiben und neue Wege des Zusammenlebens in Bezug auf die Bevölkerungszunahme in Afrika und Asien einerseits und den Rückgang der einheimischen Bevölkerung zu entdecken und zu erhöhen Migration in Europa andererseits.

Genau dies war das Hauptmotiv, in dieser Arbeit die Ursachen von vier unkoordiniert übereinander gelagerten Mega-Erschütterungswellen in Europa zu untersuchen und die Folgen der demographischen Alterung auf die wirtschaftliche, technologische und ökologische Entwicklung zu erklären.

Schlüsselwörter: Alterskultur, Digitaler Wandel, Hitzeinsel, Migration. Sozialstaat, Überalterung.

* Academician Full Professor, habil. Dr. h.c. Wolfgang Rohrbach, Regular member of the European academy of Sciences and Humanities (AASA) in Salzburg, President of the Organization Europa Nostra Austria

1 DIE DEMOGRAFISCHE MEGA-SCHOCKWELLE

Die Lebenserwartung der Menschen steigt seit Jahrzehnten, was vor allem eine Folge ökonomischer, sozialer und medizinischer Fortschritte ist. In der Europäischen Union hat laut der Statistikbehörde Eurostat ein Mädchen, das im Jahr 2012 geboren wurde, eine durchschnittliche Lebenserwartung von 83,1 Jahren, ein Junge von 77,5 Jahren [2].

Der Gewinn an Lebenszeit verändert die Zusammensetzung der Bevölkerung: Europa vergreist so schnell wie kein anderer Kontinent. Weil das die Wirtschaft und Sozialsysteme bedroht, suchen die Länder hektisch nach Wegen aus der Krise [3].

Im übertragenen Sinne ist die europäische Staatengemeinschaft ein Methylusalem – sie ist buchstäblich eine „alte Welt“. Seit Jahrzehnten sinken die Geburtenraten, schrumpfen die Bevölkerungen. Heute liegt der Altersdurchschnitt der EU-Bürger bei 45 Jahren, in Südamerika und Asien bei knapp über 30.

Der Kontinent mit der ältesten Bevölkerung der Welt sieht sich wie keine andere Weltregion mit einem Missverhältnis konfrontiert: immer weniger erwerbstätige Menschen stehen immer mehr Rentnern bzw. (Alters)Invaliden gegenüber [4].

1.1 Die jungen Alten

Aus den folgenden Ausführungen wird ersichtlich, dass Europa eine neue Alters- und Altenkultur benötigt.

Viele heute zB. gut ausgebildete und pekuniär besser gestellte +65-jährige Mitteleuropäer haben noch durchschnittlich ein Viertel ihres Lebens vor sich.

Es ist also der eine - zweifellos größere - Teil Europas, der altert. Doch parallel dazu gibt es auch einen anderen Teil, der langsamer zu altern scheint, denn eine wachsende Zahl von Alten werden physisch immer »jünger«: Sie bleiben länger gesund, sind aktiv und mobil, zudem auch höher gebildet als frühere Generationen. Vor allen Dingen aber wird die Gruppe dieser »jungen Alten« immer größer, denn schon bald wird die Generation der »Babyboomer« ihr langes Rentnerleben beginnen. Als Überalterung beklagt und eingebettet in die Wende zum aktivierenden Sozialstaat, wird diese Entwicklung derzeit zur Initialzündung für eine gesellschaftliche Neuverhandlung des Alters: Was läge näher, so hören wir allerorten, als die Ressourcen dieser Altersgruppe gesellschaftlich zu nutzen, alle Register einer Politik des »aktiven Alterns« zu ziehen?

Die wachsende Zahl der aktiven Senioren, die körperlich und geistig oft flexibler sind, als so manche sich gehenlassende 45 - Jährige fordern energisch mehr gesellschaftspolitischen Einfluss [5].

Die Europäische Kommission hat im Jänner 2021 ein Grünbuch vorgelegt, mit dem sie eine breite politische Debatte über die Herausforderungen und Chancen einer alternden Gesellschaft in Europa anstoßen möchte. In dem Grünbuch legt die Kommission die Auswirkungen dieses demografischen Trends auf unsere gesamte Wirtschaft und Gesellschaft dar und lud die Öffentlichkeit ein,

ihre Ansichten zum Umgang mit dieser Sachlage im Rahmen einer 12 -wöchigen öffentlichen Konsultation zu äußern.

In diesem Grünbuch wird ein Lebensverlaufansatz verfolgt, der die universellen Auswirkungen des Alterns auf alle Generationen und Lebensphasen berücksichtigt. Dabei wird auch verdeutlicht, wie wichtig das richtige Gleichgewicht zwischen nachhaltigen Lösungen für unsere Sozialsysteme und der Stärkung der Solidarität zwischen den Generationen ist [6].

1.2 Demografische Prognosen für die EU

In den kommenden Jahrzehnten wird es immer mehr ältere Menschen in der EU geben. Heute sind 20 % der Bevölkerung älter als 65 Jahre, und bis 2070 werden es 30 % sein. Derweil wird sich der Anteil der über 80-Jährigen voraussichtlich mehr als verdoppeln und bis 2070 bei 13 % liegen. Auch die Zahl der potenziell langfristig pflegebedürftigen Menschen in den 27 Staaten der EU wird voraussichtlich von 19,5 Millionen im Jahr 2016 auf 23,6 Millionen im Jahr 2030 und 30,5 Millionen im Jahr 2050 ansteigen, bei insgesamt schrumpfender Gesamtbevölkerung wegen der chronisch zu niedrigen Geburtenraten [7].

Im Jahre 2021 lag der Durchschnitt der EU-27 bei 1,50 Kindern je Frau [8]

1.3 Migration

Eine schrumpfende Bevölkerung führt langfristig zu Mangel an Arbeitskräften bzw. Unterversorgung der Menschen in diversen Bereichen.

Durch eine planvoll gesteuerte Migration kann dieser Mangel beseitigt oder zumindest gemildert werden. Seit 2015 sind jedoch erhebliche Fehlsteuerungen aufgetreten.

In Mitteleuropa wurden durch Migration schon seit den 1960-er Jahren personelle Engpässe im Spitalswesen, der Bauwirtschaft, Gastronomie etc. Beseitigt [9].

Andererseits gab und gibt es mit manchen Migrantengruppen Anpassungsprobleme bis hin zu offenen Konflikten.

Generell ist festzuhalten: Die Zunahme ethnischer Vielfalt durch Migration kann zu einer Abnahme des sozialen Vertrauens innerhalb der Gesellschaft führen, selbst innerhalb des autochthonen Teils. Migranten mit niedriger Bildung und geringer Anpassungsfähigkeit verstärken in Zeiten niedrigen Wirtschaftswachstums mit steigender Arbeitslosigkeit diesen Zusammenhang [10].

Der Wirtschaftswissenschaftler und Migrationsforscher Herbert Brücker hob jedoch 2013 hervor, dass Einwanderer aus EU-Staaten in Deutschland im Schnitt besser ausgebildet waren als Deutsche [11].

2019 äußerte Brücker, dass Flüchtlinge im Schnitt besser ausgebildet seien als die Bevölkerung ihrer Heimatländer und der Akademikeranteil doppelt so hoch sei. 74 % der Männer und 37 % der Frauen über 18 haben laut Brücker Berufserfahrung, im Schnitt zehn Jahre. Im April 2019 waren 36 % der seit 2015 Eingewanderten in bezahlter Arbeit. Der Sachverständigenrat deutscher

Stiftungen für Integration und Migration spricht von einer „Freizügigkeitsdividende“, da Deutschland insgesamt von Zuwanderern aus anderen europäischen Ländern profitiere, weil diese durchschnittlich zehn Jahre jünger sind als die Mehrheitsbevölkerung in Deutschland [12].

Das Institut zur Zukunft der Arbeit (IZA) zieht als Ergebnis einer Analyse den Schluss, dass Befürchtungen einer Verdrängung einheimischer Arbeitnehmer durch EU-Zuwanderer sich im Nachhinein als unbegründet herausgestellt haben: die Analyse habe keine Belege dafür gefunden, dass Einheimische in Folge der EU-Osterweiterung zunehmend ihre Arbeitsplätze an Zuwanderer verloren hätten [13].

1.4 Strategische Vorausschau

Die demografische Entwicklung und der parallel verlaufende, ökonomische ökologische und technische bzw. digitale Wandel stehen in Wechselbeziehung und fördern oder beschleunigen einander oftmals gegenseitig. Strategische Vorausschau wird daher ein wesentliches Instrument dabei sein, sich abzeichnende Herausforderungen frühzeitig zu erkennen und entsprechende politische Maßnahmen vorzubereiten.

Die UNO rechnete für den Zeitraum 2015 bis 2020 mit einem Bevölkerungswachstum von rund 78 Millionen Menschen pro Jahr. Die Vereinten Nationen erwarten 2050 etwa 9,7 Milliarden Menschen auf dem Globus. Für das Jahr 2100 werden zwischen 10,9 und 12 (bei Migrationsstop) Milliarden Menschen prognostiziert.

„Bildung (vor Ort) ist das wirksamste Verhütungsmittel.“ Frauen wird so ermöglicht, ein eigenständigeres Leben zu führen. Sie könnten beim Aufbau einer spezifischen technisch ausgerichteten Landwirtschaft in den Hungergebieten eingesetzt werden. (Siehe Kapitel 3)

Langfristige Strategien wie Hebung des Bildungsniveaus in den Regionen mit dem höchsten unkontrollierten Bevölkerungszuwachs reichen allein nicht aus. Andere Maßnahmen müssen sofort umgesetzt werden, wie die Bereitstellung von Verhütungsmitteln, die Verbesserung der rechtlichen und medizinischen Rahmenbedingungen von Abtreibungen und die steuerlichen Konsequenzen von Geburten. Weniger Kinder zu bekommen, sollte von progressiven Regierungen belohnt werden.

Weiters sollte Menschen der Effekt des Bevölkerungswachstums und Klimawandels mit einfachen Worten bewusst gemacht werden.

2 DIE ÖKONOMISCHE SCHOCKWELLE

Sie wird in weiten Teilen durch die demografische Schockwelle beeinflusst und überlagert. Sie wird aber auch durch den Umstand beeinflusst, dass unsere gesellschaftlichen Strukturen so unflexibel an fixe Eckdaten des konventionellen Alters gebunden sind. Immer mehr Wirtschaftsforscher und - Publizisten raten

zu Einstellungsänderungen gegenüber dem Alter. Ein großes Defizit unserer Zeit besteht darin, dass wir keine Alterskultur besitzen. So werden zB. keine Orientierungshilfen geboten, wie man Erfahrungswissen verwerten und an jüngere Generationen weitergeben kann.

Vor dem Hintergrund des demografischen Wandels und eines steigenden Reformdrucks auf den Wohlfahrtsstaat geraten in den letzten Jahren die so genannten „Neuen Alten“ als Retter des Sozialen in den Blickpunkt. Im Band „Die neuen Alten – Retter des Sozialen?“ [14], thematisieren Autorinnen und Autoren verschiedener Generationen das Spannungsverhältnis zwischen dieser Programmatik, den Ressourcen und dem Eigensinn älterer Menschen. Aus multidisziplinärer Perspektive und mit innovativen Ansätzen intensiver Beobachtung und Beschreibung fragen sie danach, ob und unter welchen Bedingungen die sympathische Vorstellung einer freiwilligen Einbindung älterer Menschen in die Lösung sozialer Probleme Wirklichkeit werden kann. Die Beiträge liefern sowohl eine Basis für eine diskursive Entzauberung populärer Annahmen als auch konkrete Vorschläge für eine „Kultur der Langlebigkeit“

Aufgabe der nächsten Jahre wird es sein, durch eine neu konzipierte Marketing- und Kommunikationsarbeit (mittels Medien, Film, Literatur etc.) die Senioren nicht nur als Leistungsempfänger darzustellen, sondern ebenso als eine die Wirtschaft ankurbelnde Konsumentengruppe.

Eine als „Seniorenindustrie“ bezeichnete Branchengruppe mit wachsenden Umsätzen bietet Sportartikel, Wellness, Reisen, etc. an [15].

2.1 Alterung und Konsum

Mit der Alterung der Gesellschaft ist eine Veränderung der Nachfragestruktur zu erwarten, weil ältere Konsumenten ein anderes Nachfrageverhalten aufweisen als jüngere Konsumenten [16].

Ein altersbedingter Nachfragerückgang ist im Bereich der Güter des täglichen Bedarfs zu erwarten. Hierzu zählen vor allem die Bereiche Nahrungsmittel, Kleidung und andere Gegenstände zur Haushaltsführung. Auch die Nachfrage nach Verkehrsleistungen wird wegen des Rückgangs von Fahrten zur Arbeit und von Dienstreisen sinken. Gleichzeitig aber ist zu beachten, dass wegen der steigenden Qualifikationsanforderungen an alle Beschäftigten der berufliche Weiterbildungsbedarf erheblich zunehmen wird. Eine höhere Nachfrage kann darüber hinaus für Leistungen aus dem Bereich Freizeit und Tourismus erwartet werden. Zudem ist mit einer verstärkten Nachfrage nach personennahen Dienstleistungen zu rechnen, weil eine immer größere Zahl von älteren Menschen außerhalb des Familienverbands lebt und deshalb vermehrt Leistungen wie Einkaufshilfen, Reinigungen, Gartenpflege etc. benötigt. Ein Segment mit besonders hohen Nachfragezuwächsen ist der Gesundheitssektor. Insgesamt ist im Zuge der gesellschaftlichen Alterung mit einer tendenziell steigenden Nachfrage nach Dienstleistungen zu rechnen, während die Nachfrage nach Sachgütern eher zurückgeht [17].

2.2 Alterung und Ersparnisbildung

Grundsätzlich bedeutet ein Rückgang der Bevölkerung eine sinkende Zahl von Einkommensbeziehern mit einem sinkenden Sozialprodukt und damit auch einem Rückgang der Ersparnisbildung. Entscheidend ist aber weniger die Summe der Ersparnisse, sondern vielmehr die Sparquote, also der Anteil der gesamtwirtschaftlichen Ersparnisse am Sozialprodukt. Auf den ersten Blick könnte erwartet werden, dass die Ersparnisbildung älterer Menschen geringer ist als bei Personen, die im Erwerbsalter sind. Ausgangspunkt dieser These ist die Überlegung, dass private Haushalte vor allem sparen, um für das Alter vorzusorgen, sodass „die Sparquote im Alter zumindest geringer als im Erwerbsleben“ sei [18].

Für eine alternde Gesellschaft bedeutet dies einen Rückgang der gesamtwirtschaftlichen privaten Sparquote, weil der Anteil der älteren Menschen an der Gesamtbevölkerung zunimmt. Dieses Verhalten lässt sich mit der „Lebenszyklustheorie“ des Sparens erklären. Nach dieser Theorie wird während des Arbeitslebens ein Vermögen angespart, das „nach dem Renteneintritt gerade so abgebaut wird, dass bis zum Todeszeitpunkt das Vermögen verbraucht wird“ [19].

Tatsächlich aber zeigen empirische Untersuchungen der letzten Jahre, dass privat angespartes Vermögen von Haushalten nach der Verrentung nicht oder nur zu einem Teil entspart wird [20].

Eine empirische Studie von Börsch-Supan u.a. kommt darüber hinaus zu dem Ergebnis, dass es im Alter sogar noch zu einer weiteren Vermögensbildung kommt, was „eine erstaunliche Abweichung von der traditionellen Lebenszyklushypothese ist“ [21].

Dieses Verhalten lässt sich u.a. durch das Motiv des Vererbens und die Sorge um das Wohlergehen der Nachkommen erklären.

3 DIE TECHNOLOGISCHE MEGASCHOCKWELLE

Um die ambivalenten Auswirkungen der technologischen Megaschockwelle zu erkennen und um keine einseitigen Schlüsse zu ziehen, seien einige markante Aussagen einander gegenübergestellt.

Laut einer von der WHO: durchgeführten Untersuchung gibt es 1,35 Millionen Verkehrstote weltweit pro Jahr. Die Weltgesundheitsorganisation alarmiert: Die Zahl steigt [22].

Dieser Zahl steht jedoch ein Vielfaches an geretteten Menschenleben durch Einsatz von Rettungs- und Feuerwehrautos gegenüber. Hinzu müsste man noch erfolgreiche Katastropheneinsätze zählen, die ohne Technik unmöglich wären.

In Richtung Fortschritt der Medizintechnik zielt die nächste Feststellung.

In der Bibel wird über die Wunder, die Jesus vollbrachte berichtet: „Blinde werden sehend; Lahme können wieder gehen“ heißt es.

In unserem Jahrhundert wird durch medizinisch -technische Eingriffe alljährlich erblindeten Menschen das Augenlicht zurückgegeben.

Andererseits werden Gelähmten technische Impulsgeber eingebaut, die eine Fortbewegung des Patienten ermöglichen [23]. Oder Operationen mit Implantationen durchgeführt.

3.1 Von der ersten Industriellen Revolution zum Digitalen Zeitalter

Vor mehr als zwei Jahrhunderten begann die Dampfmaschine die Arbeitskraft der Pferde und Ochsen zu ersetzen. Im 20. Jahrhundert wurden in Fortsetzung der Industriellen Revolution dann durch den technischen Fortschritt stufenweise menschliche bzw. handwerkliche Aktivitäten durch Maschinen ersetzt.

Das 21. Jahrhundert ist das Digitale Zeitalter. Insgesamt betrachtet führten aber die großen technologische Veränderungen immer auch zu strukturellen gesellschaftlichen Anpassungen.

3.2 Die hybride Plattform für erfolgreiche wissenschaftliche Konferenzen

Virtuelle oder hybride wissenschaftliche Konferenzen, setzen auf hochwertige Inhalte und erfolgreichen Austausch. Teilnehmende profitieren so von allen Vorteilen des digitalen Raums. So können zB. Universitäten wichtige Informationen durch online-Parallelschaltung zeitgleich an ihre ausländischen Niederlassungen weiterleiten. Zeitraubende An- und Abreisen für Vortragende und Hörer können auf ein notwendiges Minimum reduziert werden.

Zusammen mit einer durchgehenden persönlichen Betreuung durch ein kompetentes Team werden die virtuellen und hybriden Kongresse zu erstklassigen Erlebnissen. Aber die soziale Komponente geht bisweilen verloren.

3.3 Chancen und Bürden des digitalen Zeitalters

Eine grundlegende Eigenschaft (und Bürde) des digitalen Zeitalters ist die ständige Verfügbarkeit. Zeit und Raum sind dadurch zur Nebensächlichkeit geworden. Immer kann gehandelt, kommuniziert und gearbeitet werden, egal, wo man sich gerade befindet: im Büro, im Home-Office, unterwegs, im Urlaub oder auch „Full Remote“. Das bedeutet enorme Flexibilität für den beruflichen Alltag, kann aber auch zu Vereinsamung, Schlafstörungen und anderen Belastungen von Geist und Körper führen.

Das sind sie also, die unendlichen Möglichkeiten von Digitalisierung und Vernetzung, von Informationsaustausch und globaler Kollaboration. Wir wissen genau, dass jede dieser Errungenschaften positive und negative Folgen für den Einzelnen haben kann. Menschen werden im Internet reich, bilden sich weiter, tauschen Ideen aus, treffen auf Gleichgesinnte und finden manchmal sogar die große Liebe; gleichzeitig wird so mancher überwacht, ausspioniert, süchtig gemacht, betrogen, belogen, manipuliert oder schikaniert. Es geschehen dort also die gleichen Dinge wie in der realen Welt, wobei diese Trennung eine

künstliche ist. Das Internet ist aus physikalischer Sicht natürlich schon immer Teil der realen Welt. Unabhängig davon sagen Computerfreaks sowieso lieber „going afk“ (away from keyboard) statt „going reallife“, eben weil die digitale Welt auch gefühlt Teil oder sogar Mittelpunkt ihres „wirklichen Lebens“ ist.

Große Entwicklungen stehen schon in naher Zukunft an. Durch Satellitennetzwerke wie Starlink werden mobile Breitbandanbindungen selbst in entlegensten Weltregionen möglich sein. Taxifahrten in autonomen Fahrzeugen dürften zur Selbstverständlichkeit werden. Die fortwährende Miniaturisierung von Infrastruktur und Hardware wird u.a. dem Internet der Dinge und der Robotik einen Boost verschaffen – und weitere Basisinnovationen sind nach Einschätzung von Wirtschafts- und Zukunftsforschern in den Bereichen Gesundheit und Biotechnologie zu erwarten. So viel ist sicher: alle Bereiche unseres Lebens, egal ob sozialer oder wirtschaftlicher Natur, werden davon betroffen sein.

Serviceroboter für repetitive Tätigkeiten im öffentlichen Bereich sind geplant.

Gastronomie, Hotellerie und das Gesundheitswesen leiden unter Personalmangel, sodass Unternehmen, Einrichtungen und Betriebe Gefahr laufen, die Nachfrage nach ihren Leistungen nicht erfüllen zu können.

Um diese Problematik zu beheben, kommen Serviceroboter aller Art auf den Markt. Das große Bedürfnis, das sie erfüllen, ist die Automatisierung grundlegender Aufgaben, um die Arbeitskräfte zu entlasten und zu unterstützen [24].

Schweres Heben ist für Mitarbeiter nicht mehr zumutbar. Je nach Last und Entfernung kann dies psychisch und physisch anstrengend sein und nimmt wertvolle Zeit von dem wichtigsten Teil der Arbeit ab: Kunden und Patienten zufrieden zu stellen, indem ihre Bedürfnisse so schnell und effizient wie möglich erfüllt werden.

Mit einer Unterbesetzung sinkt nicht nur die Zufriedenheit der Kunden, Patienten oder Mitarbeiter, sondern auch der Umsatz und die Rentabilität der Einrichtung.

Pflegerobotik: Für ein selbstbestimmtes Leben

Assistenz, Monitoring, soziale Begleitung? Die zentrale Frage der Pflegerobotik ist nicht, was Roboter leisten können, sondern was sie leisten sollen. An der TU (Technische Universität) Wien wird daher an neuen Konzepten geforscht.

Die Menschen werden älter. Dabei möchten sie bis ins hohe Alter ein selbstbestimmtes Leben führen, bestenfalls im eigenen Zuhause. Gelingen kann dies mit Unterstützung von Pflegerobotik, die einerseits pflegebedürftige Personen im Alltag, andererseits das Pflegepersonal selbst unterstützen kann.

Damit die Pflegerobotik von ihren Anwender/innen akzeptiert wird, müssen sie den Bedürfnissen entsprechend entwickelt werden, sind sich die Forschenden einig. Expert/innen der TU Wien und Universität Salzburg schließen sich zu diesem Zweck mit den Praxispartnern Caritas der Erzdiözese Wien und Technisches Museum Wien im Rahmen des FWF-geförderten Projekts „Caring Robots/Robotic Care“ zusammen.

Neue Perspektive:

Pflegeroboter wurden entwickelt, um das Pflegesystem zu entlasten. Doch während sich die Technologie stets weiterentwickelte und intelligenter wurde, fand sie nur wenig Einsatz in der Praxis. „Um dies zu ändern, soll die Robotertechnologie neu orientiert werden, und zwar in einem sozio-technischen Kontext der Pflege. Um die Akzeptanz der Technologie zu steigern, muss sie außerdem nützlich, sicher, sinnvoll und erwünscht sein“, erklärt Sabine Köszegi, wissenschaftliche Leiterin des Projektes. Dies soll gelingen, indem das Thema interdisziplinär erforscht wird.

Expert/innen aus den Bereichen der Robotik, Sozialwissenschaften und Informatik arbeiten bei „Caring Robots/Robotic Care“ eng zusammen. Allein seitens der TU Wien sind drei Institute an dem Projekt beteiligt: Neben Sabine Köszegi vom Institut für Managementwissenschaften, bringen Margrit Gelautz und Astrid Weiss von Institut für Visual Computing and Human-Centered Technology sowie Markus Vincze vom Institut für Automatisierungs- und Regelungstechnik ihre Expertise ein. Ebenfalls involviert ist Christopher Frauenberger von der Universität Salzburg. Das gemeinsame Ziel ist die Entwicklung einer neuen, sozial verantwortlichen und ethisch ausgerichteten robotischen Pflegetechnologie.

Ein täglicher Begleiter.

Das Einsatzfeld für Pflegeroboter ist weitläufig und lässt sich grob in zwei Bereiche unterteilen: Assistenz und soziale Begleitung. „Ein Pflegeroboter kann seinen Nutzer/innen ein Gefühl von Sicherheit vermitteln, mit ihnen interagieren und ihnen Wünsche erfüllen, beispielsweise indem der liebste Radiosender abgespielt wird. Er kann aber auch in Notsituationen unterstützen und Hilfe rufen, wenn die Person stürzt oder nicht auf Aufforderungen des Roboters reagiert“, sagt Markus Vincze vom Institut für Automatisierungs- und Regelungstechnik der TU Wien [25].

3.3.1 Digitale Demenz

In der heutigen Welt dominieren technische Hilfsmittel und digitale Medien den Alltag vieler Menschen. Das Navigationssystem führt uns an unsere Ziele, auf dem Tablet-PC haben wir unseren Terminkalender, sowie Fotos und Videos gespeichert und unsere E-Mails kriegen wir direkt auf das Smartphone gesendet. Dies muss ein Ende haben, so Manfred Spitzer in seinem Buch „Digitale Demenz: Wie wir uns und unsere Kinder um den Verstand bringen“.

Digitale Demenz ist ein Begriff, der durch den Ulmer Psychiater Manfred Spitzer geprägt wurde. Mit dem Terminus ist die Vermutung verbunden, dass die Nutzung von digitalen Medien (vor allem Computer und Internet) hirnorganische Störungen (Hirnschädigung) hervorruft, die sich negativ auf Lernen, Gedächtnis und Denken auswirken. [26].

Spitzer studierte an der Albert-Ludwigs-Universität Medizin, Philosophie und Psychologie und promovierte anschließend in Medizin und Philosophie,

um sich schließlich 1989 im Fach Psychiatrie zu habilitieren. Seit Jahren setzt sich der Neurowissenschaftler mit Bildungsforschung auseinander und mahnt dabei vor dem negativen Einfluss, den moderne Medien auf das menschliche Gehirn haben können.

Digitale Medien seien zur Suchtdroge unserer heutigen Zeit geworden und könnten zu einer „digitalen Demenz“ führen. Symptome hierfür seien, laut Spitzer, „Gedächtnis-, Aufmerksamkeits- und Konzentrationsstörung“, die mit emotionaler Verflachung und allgemeiner Abstumpfung einhergehen. Spitzer untermauert seine Thesen anhand wissenschaftlicher Befunde und zeigt damit, dass übermäßige Nutzung von Computern und Co. derartige Symptome hervorrufen können. Gerade die Jugend sieht Spitzer in Gefahr.

Der Autor betont in seinem Buch, dass er kein „Medienhasser“ sei. Er nutze wie die meisten anderen Menschen auch Fernsehen und Computer. Der Computer erleichtere und beschleunige dabei sicherlich auch Arbeitsvorgänge. Es ist aber zu beachten, dass die unverhältnismäßige Nutzung der modernen Medien dem menschlichen Gehirn nachgewiesenermaßen schade. „Digitale Demenz“ ist ein pointiert geschriebenes Plädoyer für einen gemäßigten und vorsichtigen Umgang mit den modernen technischen Möglichkeiten. Spitzer regt seine Leser dazu an, sich kritisch mit ihrer eigenen Nutzung der neuen Medien auseinanderzusetzen [27].

4 DIE ÖKOLOGISCHE MEGA-SCHOCKWELLE

Die Verschmutzung der Luft, des Erdreichs und der Meere durch Schadstoffemissionen, giftige Abfälle oder nicht abbaubare Stoffe (Plastik) stellt in Kombination mit der unkontrollierten Rodung der Regenwälder, Versiegelung der Böden etc. eine wachsende Bedrohung der in Summe sprunghaft wachsender Menschheit dar.

Die zu einem erheblichen Teil von Menschen hervorgerufene Klimakrise äußert sich in Europa durch Zunahme von Hitzetagen; Dürreperioden, die durch Starkregen mit Überschwemmungen mit orkanartigen Stürmen abgewechselt werden.

In den Großstädten stellt die sogenannte Hitzeinselbildung in Nähe von Betonwänden, Hochhäusern Parkplätzen usw. eine Gefahr für alte Menschen oder solche mit labiler Gesundheit dar [28].

Denn wo viele Menschen auf engem Raum zusammenleben, Motoren laufen, dunkler Straßenbelag Wärme speichert und Bürotürme die Luftzirkulation erschweren, kann es ziemlich heiß werden. So sind die Temperaturen am Stadtrand meist deutlich niedriger als in den Innenstädten. Schuld daran ist der urbane Hitzeinseleffekt (UHI-Effekt).

Dieser beschreibt den Temperaturunterschied zwischen urbanem Raum und Umland und tritt ganzjährig auf. Besonders ausgeprägt ist er aber in sommerlichen Nachtstunden, sodass sogenannte Tropennächte, in denen das

Thermometer nicht unter 20 Grad Celsius fällt, in den Städten inzwischen bis zu dreimal häufiger pro Jahr vorkommen als außerhalb. Grund dafür sind Gebäude und versiegelte Flächen, die die Hitze des Tages stärker speichern, nachts aber langsamer abgeben als Freiflächen.

Hitzetage kommen in Mitteleuropa immer häufiger vor-vor allem in den Städten. Mehrere Studien haben sich in den letzten Jahren mit dem Problem beschäftigt und Wege ermittelt, wie Städte im Sommer lebenswert bleiben.

Durch Schaffung von Grüninseln mit Sitzbänken und gemütlichen Gaststätten, Spazier- und Radfahrwegen soll der Umwelt belastende Nahverkehr mit seinen CO₂ Emissionen eingedämmt werden.

Eine Verkürzung der Wege zu Supermärkten durch Verlagerung von kleineren Einheiten in ebenerdige Lokale der Wohnhäuser kann eine wirksame Eindämmung der Abgase bewirken.

4.1 Energiewende- Rettungsanker „Grüne Energie“

Die derzeitigen Energiequellen sind problematisch: Kohlekraftwerke setzen Treibhausgase frei (CO₂-Emissionen), die für die Klimaerwärmung verantwortlich sind. Atomkraftwerke sind unsicher, außerdem ist die Endlagerung von atomarem Müll noch immer ein ungelöstes Problem für die Umwelt [29].

Auch wenn derzeit wegen des Konfliktes mit Russland erneut auf fossile und atomare Energie zurückgegriffen wird, dürfte es langfristig doch zu anderen Lösungen kommen.

Grüne Energie soll eine Entspannung der Situation bewirken. Der Begriff kann enger und weiter gefasst werden. Vereinfacht lässt sich jedoch sagen, dass Strom, der aus erneuerbaren Energiequellen wie Wasser, Wind und Sonne generiert wird, als grüne Energie bezeichnet werden kann. Unter den erneuerbaren Energien ist Windkraft die ertragreichste und in der Bruttostromerzeugung die zweitwichtigste. Laut Umweltbundesamt hatte die Windkraft 2020 einen Anteil von 28 % an der Bruttostromerzeugung. Entsprechend hoch ist der Beitrag der Windkraft für den Klimaschutz [30].

4.2 Grüne Energie als „Hilfe zur Selbsthilfe vor Ort“ kann die Migrantenflut aus Afrika eindämmen

Die Bevölkerungsexplosion in Afrika bei gleichzeitiger Zunahme der Klimakrisen bedingten Dürreperioden steigert den Trend zur Massenflucht der Einwohner. Das Ziel der Flüchtenden ist meist Europa.

Selbst wenn Europa aus humanitären Überlegungen alljährlich einige Millionen afrikanischer Migranten aufnehmen könnte oder wollte und mit Arbeit anders sozial versorgt, wird das Elend in Afrika dadurch kaum gelindert, Europa hingegen gerät immer stärker unter Druck und verzeichnet komplexe Wohlstandseinbußen.

Afrika ist nicht nur Europas Nachbarkontinent, sondern auch die Weltregion mit dem stärksten Bevölkerungswachstum trotz wasserarmer Hungerregionen.

Während heute 1,3 Milliarden Menschen auf dem afrikanischen Kontinent leben, dürften es 2050 mit 2,5 Milliarden etwa doppelt so viele sein [31].

Gründe sind fehlende Verhütungsmittel, aber auch der Einfluss der Religionen.

Als erstes Land denkt Nigeria über Geburtenkontrolle per Gesetz nach [32].

Angesichts eines erheblichen Mangels an landwirtschaftlich genutzten Boden und -bedingt durch Wassermangel - zunehmender Ausdehnung der Steppen und Wüstenflächen, muss den Menschen vor Ort geholfen werden.

Ca 50 Meter unter der Erdoberfläche gibt es zT. reiche Wasservorkommen, die mit Hilfe vieler kleiner mit Fotovoltaik betriebener Schöpfbrunnen zur Bewässerung von Feldern preisgünstig genutzt werden können. Der Preis pro Anlage, die aus China angeliefert wird, beträgt samt Zustellung ca. 6000 Euro [33].

Ohne großen Zeitaufwand könnten Gemüsesorten und gewisse Früchte angebaut werden, welche die Menschen vor dem Hungertod retten und so Masseflucht aus diesen Gebieten verhindern.

Diese Entwicklungshilfe (zur Selbsthilfe) seitens Europas, wäre nachhaltig und in vielen Fällen sinnvoller als rein caritative Hilfspakete an Lebensmitteln.

5 SCHLUSSBETRACHTUNG

Durch die derzeitigen, unkontrolliert auf ganze Völker einwirkenden Mega-Schockwellen entstehen Krisensituationen, die Kriegsgefahren oder tiefgehende Konflikte heraufbeschwören.

Wenn in einer Gruppe von Staaten lebensbedrohliche Klima- und Hungerkatastrophen auftreten, in einer anderen aber durch bessere Konstellationen und höheren Wissensstand sogar Überschüsse entstehen, sind rasche und kompetente Lösungsansätze durch Methodologie-Experten gefragt. Denn Menschen, die in ihren Regionen nichts mehr zu verlieren haben, scheuen vor Auseinandersetzungen jeglicher Art nicht zurück. Ihne nicht zu helfen gefährdet die eigene Sicherheit.

Methodisch entwickelte Hilfs- und Kooperationskonzepte, welche die gebenden Staaten oder Organisationen nicht zu stark belasten, aber den Empfängern das Überleben sichern, können Kriege, Massenflucht u. ä. verhindern.

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Волфганг Р. РОХРБАХ

ПРЕТЊА ЧОВЕЧАНСТВУ ОД ЧЕТИРИ МЕГА УДАРНА ТАЛАСА

Резиме

Животни стандард у Европи и другим регионима такозваног цивилизованог света угрожавају четири мега-ударна таласа који се преклапају – демографски, економски, технолошки и еколошки. Без контрамера, неки региони Европе могли би да претрпе озбиљне губитке у просперитету.

Двадесети век је био доба пренасељености, 21. век ће бити век демографског старења у Европи, потврђено је у истраживањима Уједињених нација.

У периоду од 2015. до 2020. Године, Уједињене нације очекују да ће се становништво повећати за око 78 милиона људи годишње и да ће 2050. године на земљи бити 9,7 милијарди људи. Прогнозе УН претпостављају да ће 2100. године у свету бити 10,9 до 12 милијарди људи.

Последице таквог раста биће: прекомерна експлоатација необновљивих и обновљивих ресурса; повећање количине смећа; повећање загађења животне средине; даље загревање атмосфере; појачање ефекта стаклене баште; уска грла у испоруци итд.

Да би се последице оваквог стања ублажиле, биће неопходно спровести основна научна истраживања и открити и увећати нове начине суживота у односу на пораст становништва у Африци и Азији с једне стране и смањење домородаца у Европа са друге стране.

Управо је то био главни мотив за истраживање узрока четири некоординисана суперпонирана мегатремор таласа у Европи у овом раду и за објашњење последица демографског старења на економски, технолошки и еколошки развој.

Кључне речи: Старосна култура, дигиталне промене, топлотно острво, миграције, држава благостања, старење.

*Венелин КРЪСТЕВ К. ТЕРЗИЕВ**

Министерство культуры Республики Болгарии, София, Болгария

СТРАТЕГИЧЕСКОЕ УПРАВЛЕНИЕ В УСЛОВИЯХ ГЛОБАЛЬНОГО КРИЗИСА

Аннотация: В этой публикации мы поставили объективно сложную задачу проанализировать возможности принятия стратегических решений во время кризиса, попытавшись провести частичный анализ продолжающегося кризиса, вызванного пандемией COVID 19, и возникшим военным конфликтом между Российской Федерацией и Украиной. Кризисные обстоятельства требуют от общества быстрого переосмысления и разработки адекватных стратегий и, соответственно, формулирования стратегических целей и планирования процессов. Во многих случаях предварительный анализ и оценка практически невозможны (особенно когда речь идет о стихийных бедствиях или кризисах), и это требует другого оперативного порядка решения проблем, который включает формулирование новых нетрадиционных целей и последующее осуществление планирования, не подкрепленного конкретным и точным анализом. Все это подвергает испытанию целые системы и общества, а тех, кто уполномочен управлять процессом, - сильному давлению со стороны непредвиденных обстоятельств и не всегда объективных суждений. Что, в свою очередь, создает ряд последующих критических проблем в процессе управления.

Ключевые слова: стратегическое управление, глобального кризиса, кризисная ситуация, стратегии, стратегические цели.

Управление процессами, а в более широком масштабе - стратегическое управление в условиях кризиса подвергается гораздо более сложному испытанию целеполагания и тем более планирования действий и процессов. Это, в самом конкретном смысле, соответствует научному определению антикризисного управления, но мы все же должны определить его как стратегическое, потому что цели и задачи поставлены таким образом. Их сложность и комплексность обусловлены фактом быстро

* Профессор, Доктор военных наук, Доктор экономических наук, Доктор социальных наук, Министерство культуры Республики Болгарии, София, Болгария, vkterziev@gmail.com

и динамично меняющейся среды - как внутренней, так и внешней. Чаще всего и наиболее отчетливо это можно наблюдать в кризисных ситуациях, затрагивающих очень большую часть населения страны, региона, континента или всего мира.

Существуют, конечно, всевозможные варианты или альтернативы адаптации стратегий в кризисных ситуациях - независимо относятся ли они к одному административному району, стране или группе стран или нет. Возможности их осуществления подвергают испытанию как сложившиеся политические, военные или иные союзы, так и самих людей, которые в соответствии с условиями определенных договоров или соглашений входят в эти союзы.

Лайнус Карл Полинг (Linus Carl Pauling), американский химик немецкого происхождения, лауреат Нобелевской премии по химии и лауреат Нобелевской премии мира, сказал: „Нации соблюдают соглашения, соблюдают договоры, пока те продолжают приносить им пользу“.

Реализация всех стратегий и достижение всех целей обязательно должны преследовать эти ценности для наилучшего существования людей. Оценка действий и возможных перспектив объективируется определенными критериями и показателями. Справедливость и точность каждой оценки могут быть по-разному справедливыми и по-разному точными, и верными для разных групп людей, даже для конкретного человека.

Это ставит под сомнение или, по крайней мере, создает дискомфорт при формировании и реализации любой стратегии, вне зависимости от того, реализуется ли она в обычной ситуации без существенных колебаний внутренней или внешней среды или в ситуации активной динамики.

В каждом конкретном случае или в каждой конкретной ситуации использование объективных, измеримых и реалистичных целей при осуществлении стратегического управления является важной задачей первостепенной сложности. Это напрямую соответствует планированию определенных действий и мероприятий для того, чтобы иметь возможность максимально реализовать стратегические цели.

Оказавшись в кризисной ситуации, общество вынуждено быстро переосмыслить и сформировать новые стратеги, а отсюда - сформулировать новые стратегические цели и планировать процессы. В таких ситуациях предварительный анализ и оценка практически невозможны и требуют в ином оперативном порядке переформулирование и определение новых целей, а уже отсюда осуществление планирования без объективации конкретным анализом. Все это подвергает испытаниям целые системы и общества, а тех, кто уполномочен управлять процессом, - высокому давлению со стороны непредвиденных обстоятельств, а также не всегда объективных суждений. Что, в свою очередь, создает ряд последующих критических ситуаций в процессе управления.

Все это однозначно не определяет этот процесс как нестратегический, а представляет его в иной среде. Стратегический характер определяется

хотя бы тем, что он прямо или косвенно касается очень большой группы людей и определяет действия одной или нескольких систем.

В последние несколько лет глобальным кризисом стала пандемия коронавирусного заболевания (COVID-19). Она поставила общества перед необходимостью принятия определенных решений, носящих стратегический характер, для преодоления ситуации, угрожающей жизни и здоровью населения во всем мире.

Несомненно, каждая из стран имеет свои разработанные антикризисные программы и планы, но здесь важным является то, способны ли те, кто в состоянии управлять обществами, быстро и точно оценивать меняющуюся среду и, не в последнюю очередь, переформулировать свои стратегические цели и планы и обернуть их в пользу своему сообществу.

Реалии последних более чем двух лет показали, что не все могут справиться с этим важнейшим процессом управления в относительно трудной и сложной ситуации.

Каждый направляет свои действия на благо своего сообщества, но не у всех есть финансовые и материальные возможности и, что не менее важно, интеллектуальные научные способности для их достижения. Дисбалансы, даже не ссылаясь на конкретную статистику, присутствуют и показывают значительные различия. Одни общества быстрее выходят из конкретной кризисной ситуации, другие медленнее. Для одних обществ последствия достаточно суровы, в то время как для других - относительно более приемлемы. Все они столкнулись с определенными последствиями, которые необходимо оценить после кризиса и принять соответствующие корректирующие меры.

Было бы трудно объяснить скорость корректирующих действий в разных обществах. Это, в свою очередь, соответствует умению переформулировать те или иные цели, а также умению эффективно их достигать.

Лайнус Карл Полинг сказал: „Если хотите иметь хорошие идеи, у вас должно быть много идей. Большинство из них окажутся неудачными, но что вам нужно усвоить так это то, какие из них следует отбросить“. Всемирно известный химик делает свои выводы на основе накопленных знаний, опыта и информации, благодаря чему, по его мнению, проблема отсутствия достаточно большого набора идей, из которых можно было бы выбрать подходящие для реализации, приводит к значительным трудностям. Перенос идей, алгоритмов или копирование целых процессов из одного общества в другое исторически показало, что не всегда или в большинстве случаев это не дает хорошего результата. Научно обоснованная апробация чего-либо или процесса слишком сложна, когда мы говорим о стратегическом управлении социальными процессами. Социальные процессы включают в себя практически все системы управления и их управление имеет высокую сложность практически на всех этапах, а также очень сложный механизм воздействия.

Сложность политической ситуации из-за военного конфликта между Россией и Украиной ставит общества перед очередной кризисной ситуацией.

Опять же, ее нельзя определить как стандартную, что не позволяет использовать существующие антикризисные стратегические планы.

Это ставит общество в определенную зависимость при переформулировании своих стратегических решений и осуществлении эффективного стратегического управления.

Хочу обратить ваше внимание на анализ болгарского профессора Маруси Любчевой от 25 февраля 2022 года, размещенный на интернет-портале Pogled.info [1].

Когда Болгария присоединилась к Европейскому союзу, Евросоюз разработал документы о стратегическом партнерстве с Россией. До 2009 года Отчет о стратегическом партнерстве с Россией обсуждался в Европейском парламенте и был структурирован по вопросам торговли, экономики, энергетики, изменений климата, исследований, образования, культуры, безопасности, включая борьбу с терроризмом, нераспространения ядерного оружия и урегулирование конфликта на Ближнем Востоке [2].

Обсуждения касались вступления России во Всемирную торговую организацию, которое состоялось спустя несколько лет. Россия участвовала во всеобъемлющем отчете Черноморской синергии, в котором не только шесть причерноморских стран, но и весь Черноморский регион стали важным регионом для Европейского Союза. До тех пор, пока Евросоюз не переориентируется на Восточное измерение или Партнерство. Черноморский регион был забыт и до 2018 года так и оставался только с одним отчетом после «Синергии», в котором констатируется задержка в его реализации. Все возлагали большие надежды на Восточное партнерство. Отношения между Европейским Союзом и Украиной, Беларусью, Республикой Молдова, Грузией, Арменией и Азербайджаном были организованы путем подписания деклараций о более тесном сотрудничестве. Это также было частью политики соседства, которую Х. М. Баррозу описал как „формирование круга друзей“ и проводившейся в целях взаимовыгодных экономических и политических отношений между Европейским Союзом и граничащими с ним странами. Обсуждение коснулось и региона Южного Кавказа. Восточное партнерство, параллельно со Стратегическим партнерством между Европейским союзом и Российской Федерацией, предложило новый подход к отношениям Восток-Запад, основанный на сотрудничестве и взаимной поддержке для построения более безопасного и устойчивого мирового порядка. Пока не выяснилось, что идея не чисто европейская. Пределом стала Украина в 2013 год. Когда стремление стран Восточного партнерства к членству в НАТО стало доминировать и вытеснять принципы первоначальной идеи. Многие знаковые политики Евросоюза того времени заговорили о переформатировании Восточного партнерства. Однако события на Украине имели место. Сегодня их называют «революцией», но в 2013 году их так не называли. Лишь некоторые депутаты Европарламента размахивали украинским флагом на пленарном заседании и выходили на революцию в этой стране. Было много разных мнений.

И никто не должен об этом забывать. Личные архивы тоже говорят. Искусственное и одностороннее проведение этих мероприятий, без попытки решить возникшие проблемы дипломатическим путем. В одном конфликте всегда участвуют как минимум две стороны. А в этом конфликте оказалось много сторон. И начались какие-то постановления о санкциях, одна за другой, переговоры, навязывание определенных лиц на выборах в Украине, финансирование правительства без всяких санкций, на что и как расходуются средства, финансирование внешних НКО, проводящих политику, не свойственную даже украинцам. Наверняка все это когда-нибудь вылезет наружу, существуют документы. Напряженность, превратившая стратегическое партнерство в постоянно развивающийся режим санкций, в который все глубже и разнообразнее вошел Европейский союз. Экономический кризис, непродуманные стратегии энергетической безопасности, сложные переговоры в области изменения климата, не очень успешная внешняя политика, сложные переговоры по миграционному кризису и т. д.

Несмотря на попытки договориться, в т.ч. Минское соглашение (условия которых Украина давно заявляет, что не выполнит), Евросоюз не сделал всего необходимого для своего спасения. Да, по словам государственных чиновников в Европейском союзе или Соединенных Штатах во многих странах демократии не существует, но нигде демократия не может быть навязана насильственно. Если ее навязывать силой, риск уничтожения личности или отстранения диссидентов особенно высок. Многие люди сегодня рассуждают теоретически и ищут виновника.

Уже много лет бушуют страсти в Европе, в том числе и в Украине, страсти вернуть некоторым группам людей отношения, действительные для лет фашизма. Этих людей кто осуждал или санкционировал? Кто осудил т.н. Майдан? Вылезла ли вся правда о т.н. Майдане? Получается, что мы, как европейцы, выступали не только за навязывание демократии и свободы. Нам навязали чьи-то интересы, наряду с другими внешними силами.

Требовалось стратегическое видение и оценка ситуации, что было возможным решением. Требовалось лидерство, лишенное черно-белой перспективы разделения. В конфликте есть как минимум две стороны, но в этом конфликте их не просто две. Мы все в этом конфликте. Теперь никто не имеет права просто обвинять.

Сложность этой ситуации определяется особой динамикой, а также тем, что общества и страны по-разному оценивают происходящее. Принятие быстрых решений в этом случае просто необходимо, хотя существует высокая вероятность их погрешности. Общества определяют свою стратегическую политику с точки зрения своей принадлежности к определенным политическим союзам, экономической природы интересов заинтересованных обществ и последствий определенных стратегических решений.

Ограничение некоторых свобод, связанных с достоверностью информации, напоминает годы холодной войны. И это представляет элемент

реализации стратегий всех стран-участниц. Это объективно обрекает представителей соответствующего сообщества на односторонность получаемой информации и отсутствие хотя бы частичной объективности для ее сравнения. Вероятно, в столь глубоких по своему характеру военных кризисах создаются условия для смещения демократической обусловленности и применения элементов тактического военного искусства. Дают ли они надлежащий результат, сложно судить, будучи участником кризисной ситуации.

Все политические лидеры, призванные управлять обществом, тщательно определяют или, скорее, мотивируют свои хорошие или плохие решения национальной безопасностью своего общества. В любом случае это имеет наибольший вес при определении соответствующих стратегических решений, но политические лидеры не всегда адекватны соответствующим реалиям общества и, что не менее важно, их готовность принимать такие решения в тяжелых кризисных ситуациях.

По словам Лайнуса Карла Полинга, „наука - это поиск истины, это попытка понять мир: она включает в себя отказ от предубеждений, догм, откровений, но не и от морали“.

Роль и миссия ученых заключается не только в поддержке этого процесса, но и в том, чтобы быть частью процесса формирования таких стратегических решений в управлении, которые максимально и как можно быстрее оправдали бы ожидания обществ. Это повышает ожидания относительно того, способны ли ученые генерировать достаточно хорошие идеи, чтобы убедить общество в их полезности и предложить способы их реализации.

Все это является задачей первостепенной важности и ее необходимо выполнять постоянно, особенно в условиях кризиса. Сегодня, когда общества разделены и создаются прецеденты с публичным осуждением того или иного, навязываются определенные квалификации, я считаю, что международные научные форумы – это время и место такого обсуждения, выработки решений и предложений. Ограничение участия тех и других (в зависимости от того, кто организует научный форум) недопустимо, а скорее оскорбительно и не создает возможности для наиболее подготовленной и наиболее информированной среды выполнять свою миссию новатора.

А поскольку по образованию я химик, я все же воспользуюсь словами Лайнуса Карла Полинга: „Я признаю, что многие физики умнее меня – большинство из них физики-теоретики. Много умных людей перешли на теоретическую физику, так что конкуренция в этой области крайне высока. Я утешаю себя тем, что, хотя они умнее и более глубокомысленнее меня, у меня более разнообразные интересы, чем у них“.

Создание объективно эффективных стратегических решений требует, прежде всего, хорошей подготовки людей в функции которых это входит, и особенно коллективов, дающих базу – научную и интеллектуальную, для их принятия.

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Venelin KRUSTEV TERZIEV

STRATEGIC MANAGEMENT IN CONDITIONS OF GLOBAL CRISIS

Summary

In this publication we set an objectively complicated task to analyse the opportunities of strategic decision-making during crisis by attempting to make a partial analysis of the ongoing crisis caused by the COVID 19 pandemic and the emerged military conflict between the Russian Federation and Ukraine. Crisis circumstances require societies to quickly rethink and develop adequate strategies and respectively to formulate strategic goals and plan processes. In many cases preliminary analysis and assessment are practically impossible /especially when it comes to natural disasters or crises/ and this requires a different operational order of problem solving, which includes formulating new unconventional goals and then implementing planning not objectified by a particular and accurate analysis. All this puts whole systems and societies to the test, and those who are empowered to manage the process – under high pressure from unforeseen circumstances and not always objective judgments. Which, in turn, creates a number of subsequent critical issues in the management process.

Key words: strategic management, global crisis, crisis situation, strategies, strategic goals.

Венелин КРУСТЕВ ТЕРЗИЕВ

СТРАТЕШКО УПРАВЉАЊЕ У УСЛОВИМА ГЛОБАЛНЕ КРИЗЕ

Резиме

У овој публикацији поставили смо објективно компликован задатак да анализирамо могућности стратешког доношења одлука током кризе покушавајући да направимо делимичну анализу текуће кризе изазване пандемијом ЦОВИД-19 и насталим војним сукобом између Руске Федерације и Украјине. Кризне околности захтевају од друштава да брзо преиспитају и развију адекватне стратегије, односно да формулишу стратешке циљеве и планирају процесе. У многим случајевима прелиминарне анализе и процене су практично немогуће /посебно када су у питању природне катастрофе или кризе/ и то захтева другачији оперативни редослед решавања проблема, који укључује формулисање нових неконвенционалних циљева, а затим спровођење планирања које није објективизовано посебном и тачном анализом. Све ово ставља на тест читаве системе и друштва, и оне који су овлашћени да управљају процесом – под великим притиском непредвиђених околности и не увек објективних судова. Што, заузврат, ствара низ накнадних критичних питања у процесу управљања.

Кључне речи: стратешки менаџмент, глобална криза, кризна ситуација, стратегије, стратешки циљеви.

*Vojislav R. BABIĆ**

University of Belgrade, Institute for sociological research

*Siniša Đ. ZARIĆ***

University of Belgrade, Faculty of Economic

THE ESSENCE OF FACTOR ANALYSIS AND ITS APPLICATION IN ECONOMIC SCIENCES

Abstract: Factor analysis (FA) is a statistical technique invented by Charles Spearman in 1904 for psychometric analysis. The starting point of this study is Alfred Marshall's methodological postulates on temporal and causal isolation, which precede the application of FA in economics. In economic analyses, despite the basic methodological procedures, such as abstraction and the hypothetical-deductive method, a large number of variables still remain, and FA emerges as an interesting and useful statistical technique. FA measures the relationship between different initial variables with new variables called factors, where the number of factors is less than the number of original variables. Each factor will have some influence, but some will explain the variance better than others. FA has found application in psychology, economics (Babic & Zarić 2020; 2021), sociology, marketing, chemistry, biology, pharmacy, machine learning, engineering sciences, etc. The study analyzes the postulates, goals and types of FA. The standardization problem of factor loadings' values, sample size, advantages and disadvantages of this statistical technique are discussed. In a separate chapter, an analysis of FA application to two cases from different disciplines is presented. The possibilities of combining factor scores with other econometric techniques are explained and the contribution of FA to fundamental research is indicated.

Key words: Factor analysis, causal and temporal isolation, economics, factor loadings, types of factor analysis, large and medium companies.

1. INTRODUCTION

This study relies on Alfred Marshall's (1890) methodological postulates of temporal and causal isolation that predate the use of factor analysis (FA) in the economic sciences. Alfred Marshall introduced the notion of a special clause

* Full professor, babic.voja@gmail.com

** Full professor, sinisha.zaric@gmail.com

into his scientific method. The clause is used to consider the effects of some causes in isolation, assuming that other influences are absent (Marshall 1890). Because of the difficulties in economic research, caused by the category of time, it is necessary for economists to go step by step, breaking down a complex question, studying one by one, and finally combining partial solutions into a more or less complete solution of the whole puzzle. Breaking down a complex question, the economist isolates those disturbing causes, whose wanderings are inconvenient, for a time in a construction called *Ceteris paribus* (ibid.). The existence of other causes, however, is not denied, but their action is left aside for a while. *Ceteris paribus* is an intellectual approach, in which a complex question is narrowed down more and more, in order to solve it more precisely. At first, the solution does not quite correspond to real life, but each accurate and firm handling of an isolated question helps to test the broader questions. Over time, accurate discussions may become less abstract, and realistic discussions may be less inaccurate, than was the case at an earlier stage (ibid.). Explaining with a practical example, Marshall states why economics should be interested in isolating causes. It begins by isolating the primary relationships of supply, demand, and price in relation to a particular commodity. We reduce all other forces to inactivity with the phrase “other things being equal”, and ignore their activity for a certain time. This scientific tool, argued Alfred Marshall, is much older than science. It is a method that, consciously or unconsciously, reasonable people have always engaged in solving difficult problems in everyday life (Marshall 1890). Today, in the age of Industrial Revolution 4.0, in economic analyses, despite the basic methodological procedures, such as abstraction and the hypothetical-deductive method, a large number of variables still remain, so FA is imposed as a useful and practical reduction technique.

FA is a technique for data reduction, in which a large number of variables can be summarized into a smaller number of factors. The reduced data contain essential information from the underlying variables. FA can be used as an exploratory or as confirmatory technique. When used as an exploratory technique, the researcher seeks to discover some underlying structure or some new pattern in a set of variables. In the case of applying the confirmatory variant, an attempt is made to test and confirm some existing theories. FA measures the relationship between the original variables with new variables called factors, where the number of factors is less than the number of original variables. Each factor will have some influence, but some of them will explain the variance better than others. Factors can be characterized by several components, the importance of which is measured by factor loading. FA suggests answers to the following questions (Darlington 2008):

1. How many different factors are needed to explain the pattern of relationships between variables?
2. What is the nature of those factors?
3. To what extent do the hypothetical factors explain the observed data?
4. To what extent is the variance contained in the observed variables?

FA is a complex process that includes several stages: selection of initial variables from an adequate sample, selection of factor extraction methods, extraction, classification, application of rotation as needed, naming of obtained factors with interpretation and practical use of the factor model. The most well-known factor extraction methods are principal component analysis, unweighted least squares method, generalized least squares method, maximum likelihood method, principal axis factorization, alpha factorization, and image factorization (Field 2017). The choice of extraction depends on the nature of the analysis, the depth of the analysis, the size of the sample and the affinity of the researcher. The principal component analysis is by far the most widely used in research, and it is especially popular in the Anglo-Saxon scientific world. It is a factor extraction method used to form uncorrelated linear combinations of observed variables. The first component has the maximum variance. Successive components explain progressively smaller portions of the variance and are all uncorrelated with each other. The principal component analysis is used to obtain the initial factorial solution. It can be used when the correlation matrix is singular. The principal component analysis is a very practical method due to its high reducing ability. However, in some situations, the reduction to a smaller number of factors can lead to neglecting of some factor importance, which can negatively affect the essence of the analysis. The unweighted least squares method is a factor extraction technique that minimizes the sum of the squares of the differences between the observed and reproduced correlation matrices while ignoring the diagonals. With the generalized least squares method, the sum of squares of the differences between the observed and reproduced correlation matrix is minimized. Correlations are weighted inversely to their uniqueness so that variables with high uniqueness are given less weight than those with low uniqueness. The maximum likelihood method is a factor extraction method that produces parameter estimates that are most likely to have produced the observed correlation matrix if the sample is from a multivariate normal distribution. Correlations are weighted inversely in relation to the uniqueness of the variables, and an iterative algorithm is used. Principal axis factorization is a technique for extracting factors from the original correlation matrix, with squared multiple correlation coefficients placed on the diagonal as initial community estimates. These factor loadings are used to estimate new communalities that replace the old communality estimates in the diagonal. Iterations continue until the changes in communities from one iteration to the next satisfy the convergence criterion for the extraction. In the Alpha method of factor extraction, the variables in the analysis are considered to be a sample from the universe of potential variables. This method maximizes factor alpha reliability. Image factorization is a factor extraction method developed by Guttman and based on image theory. The common part of the variable, called the partial image, is defined as its linear regression on the remaining variables, rather than as a function of the hypothetical factors. In its general form, FA can be expressed by equation 1:

$$X_i = a_{i1}F_1 + a_{i2}F_2 + a_{i3}F_3 + a_{i4}F_4 + e_i \quad (1)$$

X - factor score value,

i - ordinal number of the variable,

F - factor

a - factor loading

e - specific factor that relates only to the given variable.

2. LITERATURE REVIEW

The FA technique was first applied by Charles Spearman (1904) for the purpose of psychometric analysis of the construct of intelligence (Bartholomew, 2011). FA has found applications in psychology, economics, sociology, marketing, chemistry, biology, pharmacy, machine learning, engineering and other sciences, especially as a result of advances in software. Porter and Fabrigar (2012) stated that FA was a set of statistical procedures designed to determine the number of different unobservable constructs needed to explain the pattern of correlations among a set of measures. Statistical procedures involving FA, provide information on the number of common factors underlying a set of measures, as well as estimates of the strength and direction of influence of each factor on each of the measures. These impact estimates are called factor loadings. Paul Krabbe (2017) points out that in FA the researcher should only be interested in the variance that each variable has in common with the other variables, not the unique variance. FA discovers patterns among variables and then groups interrelated variables into factors. The technique is suitable for eliminating variables that are not related to each other or do not load on any factor. FA is often applied in survey analysis, where researchers use it to see if a long series of questions can be grouped into shorter groups. In meeting its goals, exploratory FA focuses on four issues (Hair et al. 2019): specifying the unit of analysis, achieving data summation and/or data reduction, selecting variables, and using the results of the analysis in combination with other multivariate techniques. Some authors (Wang, 2009) emphasize the difference between FA and principal component analysis (PCA). FA and principal component analysis are both conceptually and mathematically very different. The principal component analysis technique uses the same number of variables (components) to simply transform the original data, while FA uses fewer variables (factors) to discover the interrelationships between the original variables. Coakes (2013), trying to increase the reliability of results, suggests that after factor extraction, Cronbach's alpha coefficient of internal consistency should be determined, to explain whether the elements that make up a given factor represent a reliable scale.

The FA technique has been applied, but not so often, in economic sciences and management. This methodological technique was used alone or in combination with other econometric techniques. In the global FA, which included 42 countries of different levels of development, Maravalle and Rawdanowicz (2018)

examined the contribution of global and regional factors to changes in real GDP *per capita* growth and inflation, to government bond yields and stock prices. Country-specific factors explain a larger proportion of the variation in financial variables in developing economies compared to advanced economies. For all variables, a large heterogeneity among countries is observed in terms of the level of contribution of specific factors and their evolution over time. Okafor (2017) points out that FA is insufficiently applied in economic sciences. Therefore, his book aims to popularize the use of this useful methodological technique, in order to advance professionalism in economics, business and management in the following areas: policy formulation, policy implementation, decision-making, theory development, theory validation and public policy analysis. In the research of Bai et al. (2015), FA was used to explain the evaluation of the development of 20 countries in relation to 15 economic indicators such as current prices GDP *per capita*, implied PPP conversion rate, total investment expressed in GDP, gross national savings as a share of GDP, import of goods, export of goods, unemployment rate, employment rate, number of inhabitants, Government revenues, government expenditures, net lending/borrowing of the Government, national structural balance, gross government debt and current state account balance.

In financial analysis, FA can be used for various calculations. Thus, FA profit from sales, net profit, gross profit, gross margin, etc. (Optolov, 2021). The point is to identify the factors that influence the change in the mentioned indicators. Jungbacker et al. (2013) combined FA with statistical procedures based on Wald and Lagrange multipliers and likelihood ratio tests to study monthly time series of the time structure of US interest rates. Dynamic factor models with and without smooth loadings were compared with dynamic models based on Nelson-Siegel and cubic yield functions. The authors concluded that the constraints on the smoothness of factor loadings are supported by interest rate data and can result in more accurate forecasts (*ibid.*). Luciani (2013) investigated the role of the Fed in the real estate market during the global recession. Using a structural FA model on a panel of 109 US quarterly variables for the period 1982 to 2010, the author found that while Federal Reserve policy between 2002 and 2004 was slightly expansionary, its contribution to the recent housing cycle was negligible. Chowdhury and Gábor (2010) analyzed through FA the perception of employees on the quality of services provided in customer relationship management in Bangladesh. In the report, five factors are identified: protection, profit, initiative, strategy and service management for customer relations.

Kiš and Čileg (2005) indicate the need to supplement FA in econometric research with regression analysis, because very often, independent variables are mutually dependent, which causes multicollinearity, which makes it impossible to obtain accurate parameter values. FA is one possibility to eliminate multicollinearity. Živadinović (2005) conducted a FA of fifteen basic characteristics of the coffee food product. After varimax rotation,

four factors were extracted: relaxation, dependence, concentration, and taste-smell. In Mihić Mirela's research (2006), based on consumer attitudes about the appearance of the sales point and the staff, the goal was to single out several factors that would later influence the improvement of competitiveness. Through FA, the functional factor, the atmosphere factor and the personal factor were singled out. Using FA, Babic and Zarić (2020) analyzed the existence of a knowledge management strategy and its impact on wages growth in 126 Serbian companies.

3. PROBLEMS AROUND THE STANDARDIZATION OF THE FACTOR ANALYSIS REFERENCE FRAMEWORK

FA as a method suffers from many doubts, including confusion related to the required sample size, the choice of factor extraction methods, the minimum recommended value of factor loadings and the interpretation of results. As for the necessary and sufficient sample size for conducting FA, there is a wide range of different views in the literature. Humaira et al. (2021) state that the minimum sample should include five respondents per variable. According to some analysts, it is enough for the sample to be larger than the number of factors (Statistical solutions, 2021). According to Zlatko Kovačić (1994), the minimum sample includes 10 to 20 respondents, and for optimal work, 100 are needed. Darlington (2008) states a quota of 50 to 100 respondents per sample for successful FA. According to Coakes (2013), a sample of 100 units may be acceptable but it is much better to include 200 and more. A general rule of thumb is to have at least five times as many units as there are variables in the base, and the best ratio would be 10:1. In cases where the ratio is less than 5:1, the results should be interpreted with great caution (University of Novi Sad). Hair et al. (2019) advise that lower factor loadings should accompany a larger sample. Factor loadings represent the relationship between observed variables (questions) and latent common factors. If the correlation is positive, then it shows to what extent a particular variable contributes to that factor. As for the negative factor loading, it gives the meaning that the variable is related in the opposite direction to the factor. When it comes to reference values for factor loadings, the situation is also diverse and insufficiently defined. Shrestha (2021) and Batt (2004) advised ± 0.5 for the minimum required factor loading value. There are also different interpretations according to which factor loadings in the range of ± 0.30 to ± 0.40 meet the minimum requirements for participation in the interpretation of a given data structure. The loadings over ± 0.50 are considered practically significant, while loadings over ± 0.70 are considered indicative of a well-defined structure and they are the real goal of factor analysis (University of Novi Sad). Hair et al. (2019), based on their own assessments, developed an approach in which the level of factor loadings should be directly related to the sample size (Table 1):

Table 1. Guidelines for identifying significance of factor loadings based on sample size

Factor loadings	Sample size
0.3	350
0.35	250
0,40	200
0.45	150
0.50	120
0.55	100
0.60	85
0.65	70
0.70	60
0.5	50

Source: Hair et al., 2019.

Sometimes, loadings of ± 0.30 can be very helpful in exploratory FA, so, neglecting them can negatively affect the quality of the final result. Whether or not lower values of factor loadings are rejected should depend on the level of complexity of the variables under investigation.

3.1. Two Cases of Applied Factor Analysis

This chapter presents the methodology with the results of two types of FA conducted in two different studies. The first study investigated the impact of intrapreneurship on the business trust of vegetable growers in South East Asia and Australia (Batt 2004).

In the first research, 11 variables for measuring the level of intrapreneurship were processed using the factor analysis technique. The original idea was to isolate numerous complex factors, which would later be associated with the company's business variables. The research used FA with the maximum likelihood extraction method (Millar, 2011). The extraction algorithm in the maximum likelihood variant (Field, 2017) is set so that the maximum likelihood of the options Λ and ψ_2 is obtained by minimizing the following expression:

$$F = \text{tr}[(\Lambda\Lambda' + \psi_2) - IR] - \log|(\Lambda\Lambda' + \psi_2) - IR| - p \quad (2)$$

and according to Λ and ψ_2 respectively, where p represents the number of variables, Λ the loading factor of the matrix and ψ_2 the diagonal matrix of unique variance. Minimization of F is done using the logarithm in two steps. In the first step, the conditional minimum for F , for the given y , is calculated. In this way, the function $f(\psi)$ is obtained and it is numerically minimized using the Newton-Raphson method (Field, 2017; Ahmad et al., 2007). Since the conditions of the Kaizer-Mayer and Bartlett tests were met, extraction followed by varimax rotation was carried out. The value ± 0.3 (Table 2) was used as the minimum value of factor loading (Hair et al. 2019):

Table 2 Rotated factor matrix^a

	Factors	
	1	2
The work of autonomous and functional teams	0.814	0.384
Are employees in your company allowed to take a business initiative?	0.630	0.380
Are employees in your company provided with quick and informal access to resources for testing purposes and realization of new business ideas?	0.645	0.657
Does your company encourage employees to take risks in order to realize new business ideas?	-0.169	0.909
Does your company have the resources to develop new business ideas?	0.713	0.277
What is the possibility for employees to use the resources of other business units in your company, in order to implement new business ideas?	0.568	0.466
To what extent is your organization willing to tolerate mistakes in order to realize new business ideas of employees?	0.555	0.633
Does your company have a system for rewarding new business ideas and employee results?	0.768	0.189
Is there support from management at all levels in your company?	0.308	0.734
In the past 5 years, has the number of hierarchical levels changed in your company?	-0.607	-0.715
Do you know the role of crowdsourcing in the development of internal entrepreneurship?	0.909	-0.210

Extraction Method: Maximum Likelihood

Rotation Method: Varimax with Kaiser Normalization^a

a. Rotation converged in 3 iterations

Source: Babić, Zarić & Piccolo, 2021.

Factor loadings with values of ± 0.70 are considered indicative of a well-defined construct, and they are the main carriers of factor characteristics. The following characteristics can be observed in the factor structure. Factor 1 contains four loadings with values greater than 0.70, namely crowdsourcing (0.909), work of autonomous and functional teams (0.814), reward system (0.768) and resources for developing new ideas (0.713). These factor loadings can be named as an organizational-financial aspect. On the other hand, in the structure of Factor 2, three loadings with values above and below ± 0.70 were observed. These are the encouragement of employees to take risks (0.909), the level of management support (0.734) and the number of hierarchical levels in the company (-0.715). Factor 2 can be named as an organizational-psychological aspect. The authors used the two obtained factor scores to measure the impact on the volume of business, the investment trend of the company and the growth of employees' wages through multiple regression analysis. The following general regression model was set up:

$$y_i = \beta_0 + \beta_1 f_{i1} + \beta_2 f_{i2} + \varepsilon_i \quad (3)$$

y_i = dependent variable (business of the company), β_0 = y intercept, β_1 = predictor slope coefficient of f_{i1} , β_2 = predictor slope coefficient of f_{i2} ; f_{i1} and f_{i2} are independent variables (regression factor scores 1 - 2), while ε_i = random error. In the first case, the influence of factor scores on the scope of the company's operations was measured. Based on the value of the adjusted R^2 , the set of two factor scores explains 65.7% of the variability of the „business volume of the company“ (Table 3):

Table 3 Results of the regression model (dependent variable: business volume of the company)

Model	R	R ²		R ² Adjusted	Standard error
1	.817 ^a	0.667		0.657	0.632
a. Predictors: (Constant), REGR. factor score 2 for analysis 1, REGR factor score 1 for analysis 1					

Source: Babic, Zarić & Piccolo, 2021.

Based on the value of the adjusted R^2 , the set of two factor scores explains 82.1% of the variability of the „investment trend of the company“ (Table 4):

Table 4 Results of the regression model (dependent variable: investment trend of the company)

Model	R	R ²	R ² Adjusted	Standard error
1	.909 ^a	0.826	0.821	0.371
a. Predictors: (Constant), REGR. factor score 2 for analysis 1, REGR. factor score 1 for analysis 1				

Source: Babic, Zarić & Piccolo, 2021.

According to the obtained results, the set of two factor scores explains 87.1% of the variability of employees' wages (Table 5):

Table 5 Results of the regression model (dependent variable: wages of employees)

Model	R	R ²	R ² Adjusted	Standard error
1	.936 ^a	0.875	0.871	0.400
a. Predictors: (Constant), REGR. factor score 2 for analysis 1, REGR. factor score 1 for analysis 1				

Source: Babic, Zarić & Piccolo, 2021.

Data for Batt's study (Batt, 2004) were collected from five independent surveys: three in Southeast Asia and two in Western Australia. Data in the two studies for SE Asia were collected through in-depth interviews with potato farmers in the Philippines and Vietnam. A study on Indonesia examined the relationships between vegetable producers and their trading partners. In the Australian studies, the relationships between all fruit growers and their market agents as well as the nature of the relationship between winegrowers and wineries were examined through postal questionnaires. Seven-point Likert scales were also used in the research, which were used to evaluate the attitudes in table 6:

Table 6. Average values of trust parameters in the countries of South East Asia and Western Australia

	SE Asia			Western Australia	
	TP	I	V	GG	FFV
I trust my business partner	6,17	6,16	5,36	4,69	4,79
Necessary expertise	6,12	6,02			5,60
He has confidence	5,97	6,17	5,58	4,56	5,03
Good reputation	5,93	6,46	5,46	4,92	5,03
I trust the information	5,74	5,61	5,05	4,69	4,78
Keeping promises	5,58	5,94	5,54	4,54	4,55
I consider my best interest	5,42	5,06	3,81	3,92	4,38
I'm not always honest	5,78	4,98	5,53	4,30	4,87
Average value	5,84	5,99	5,25	4,53	4,68

Source: Batt, 2004.

TP =Philippines V=Vietnam FFV= growers of fresh fruits and vegetables

I=Indonesia GG= grape growers 1 = „deep disagreement“

7= „I totally agree“

Based on the results, the conclusion follows that respondents in developing countries have to rely more on interpersonal trust during transactions. This can be explained by the absence of a free flow of information and an efficient judicial system. In an effort to examine the unidimensionality of the resulting trust construct, FA was performed using the principal component analysis (PCA) method. After that, varimax rotation of the extracted factors was performed in order to obtain a simpler structure that can be more easily interpreted. Factor loadings below 0.5 are considered insignificant by the author and are therefore excluded from further consideration for easier interpretation. Confirmation of the contribution of each item to the factor outcome was achieved using Cronbach's reliability coefficient. Tables 7a and 7b show the results of FA (PCA extraction type) for Asian countries and Australia.

Table 7a Testing the universality of the trust construct for South East Asia

	SE Asia						
	Philippines		Indonesia			Vietnam	
He has confidence	.863		.828			.798	
Expertise is required	.736				.937		
He trusts the information	.720			.649		.855	
Good reputation	.678		.750			.563	
It takes my best interest into account	.572			.809			.956
He is not always honest		.948				.787	
He trusts his business partner	*	*	.760			*	*
Keeping promises	*	*	.759			.856	
Variance in percentages	50.6	19.9	30.4	19.9	13.9	43.2	18.5
Cumulative variance	50.6	70.5	30.4	50.3	64.2	43.2	61.7
Cronbach alpha	.766	NA	.793	.501	NA	.846	NA

Table 7b Testing the universality of the trust construct for Australia

	Australia	
	GG	FFV
He has confidence	.873	.899
Expertise is required		.746
He trusts the information	.808	.847
Good reputation	.872	.890
It takes my best interest into account	.859	.857
He is not always honest	*	*
He trusts his business partner	.904	.888
Variance in percentages	*	.725
Cumulative variance	65.9	66.5
Cronbach alpha	.896	.931

Source: Batt, 2004.

GG = grape growers

FFV = growers of fresh fruits and vegetables

* the item is excluded from further consideration

In the research for the Philippines and Vietnam, two factors were extracted, but only three measured attitudes (trust, belief in posted information and reputation) were loaded on the same factor. In the case of Indonesia, three factors

were extracted that together explained 64% of the variance. Since the second factor had a Cronbach coefficient value of 0.5, it was excluded from further consideration, and only two measured attitudes (trust and reputation) had a common share with the Philippines and Vietnam. In two Australian studies, in both cases, one factor with 5 measured attitudes (trust, reputation, trust in business partners, best interest and trust in marketed information) was extracted for each construct. The reliability coefficients in both cases (0.89 and 0.93 respectively) are markedly higher than those in the Southeast Asian surveys. This indicates that the trust construct for developing countries (Philippines, Indonesia, Vietnam) is not adequately operationalized in this case. The causes should be sought in the author's formulation of the initial views for evaluation, which were not properly interpreted by the local population due to language barriers and cultural differences.

3.2. Factor Analysis in The Focus of Fundamental Research

According to Postlethwaite (2015), fundamental research includes theoretical or experimental work aimed at acquiring new basic knowledge and facts about a phenomenon. This type of research enriches the general pool of scientific facts, defines new areas of human interest and paves the way for the application of fundamental methodological knowledge (Bazić, Danilović, 2015) in the formulation of a research project. There is no imperative for the practical application of the obtained results. However, progress achieved in fundamental research is usually accompanied by success in applied research. In the light of fundamental research, FA represents an important exploratory instrument. Through reduction, it clarifies more precisely the structure of the scientific concept. The use of factor scores, in combination with other econometric techniques, improves causal analysis with observed parameters.

4. CONCLUSION

FA is a deductive statistical technique with enviable exploratory potential. FA can identify latent constructs that are difficult to identify through classical direct analysis. Reduction is achieved by combining multiple variables into one factor. FA can be used to find groups of variables between which there is a certain relationship, which can then be precisely measured. The resulting factors can be used to create perceptual maps for product positioning, for example in marketing and behavioral economic analysis. Using the obtained factor scores, the analysis can be continued by combining it with other econometric techniques.

When it comes to FA limits, naming the factors after the extraction could be a problem, due to inter-factor loading overlap and also certain amount of subjectivity on the part of the researcher when naming. Then, the appearance of multi-correlation is possible, which affects the masking of some interesting relationships between variables. Some authors (Darlington, 2008) state that

FA is a too reductive technique, which can affect the quality of the results. FA requires an impressive sample and represents a complex multi-stage process, which increases the cost of the research as a whole. There are still no decisively specified minimally necessary values for factor loadings, which negatively affects the process of standardization of this technique.

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Војислав Р. БАБИЋ

Синиша Ђ. ЗАРИЋ

СУШТИНА ФАКТОРСКЕ АНАЛИЗЕ И ЊЕНА ПРИМЕНА У ЕКОНОМСКИМ НАУКАМА

Резиме

Факторска анализа (ФА) је статистичка техника коју је изумео Џхарлес Спирман 1904. за потребе психометријске анализе. Полазна основа ове студије су методолошки постулати Алфреда Марсхалл-а о темпоралној и каузалној изолацији који предходе примени ФА у економији. У економским анализама, и поред основних методолошких поступака, као што су апстракција и хипотетичко-дедуктивни метод, ипак преостане велики број варијабли, те се ФА намеће као интересантна и корисна статистичка техника. ФА мери однос између различитих почетних варијабли са новим варијаблама које се називају фактори, при чему је број фактора мањи од броја оригиналних варијабли. Сваки фактор ће имати одређени утицај, али ће неки од њих боље објаснити варијансу од осталих. ФА је нашла примену у психологији, економији (Бабић, Зарић 2020; 2021), социологији, маркетингу, хемији, биологији, фармацији, машинском учењу, инжењерским наукама и др. У студији се анализирају постулати, циљеви и типови ФА. Дискутује се о проблему стандардизације референтних вредности факторских оптерећења, величини узорка, предностима и манама ове статистичке технике. У засебном поглављу, приказује се анализа примене ФА на два случаја из различитих дисциплина. Објашњавају се могућности комбиновања факторских скорова са другим економетријским техникама и указује се на допринос ФА у фундаменталним истраживањима.

Кључне речи: факторска анализа, темпорална и каузална изолација, економија, факторска оптерећења, типови факторске анализе, велике и средње компаније.

*Artur BEZVERKHOV GENNADIEVICH**

Law Institute of the federal state autonomous educational institutions
of higher education, Samara National Research University named after
„Academician S.P. Korolev”

*Svetlana ELEKINA VYACHESLAVOVNA***

Department of Civil Procedural and Business Law of the federal state
autonomous educational institution of higher education. Samara National
Research University named after „Academician S.P. Korolev”

LAW IN THE DIGITAL AGE

Abstract: The article focuses on the role of law in modern society and the features of the legal regulation of digital relations. The time of digital transformation determines the further improvement of legal means, pre-determines the reliable legal protection of the new world order. The law cannot remain indifferent to the growing digitalization processes that are penetrating deeper and deeper into the fabric of modern society. The development of the digital economy requires appropriate legal support so that the human essence always prevails over cybernetic technologies. In the era of high technology, the principle of humanism, the legal provision of human security becomes especially acute. This circumstance initiates the development of new legal tools that are directly designed to ensure the legal regulation and protection of digital relations. When creating a new categorical apparatus, it is advisable to rely on the data of the theories of control, communication and information. It is advisable to promptly design post-industrial regulators, since new objects of legal regulation and protection do not correspond to traditional legal means and tools that can be used. Legal structures that are quite suitable for the protection of the industrial economy are unlikely to be able to effectively withstand the onslaught of “digital” challenges, reliable legal support for information security in the era of post-industrialism.

* Director of the Law Institute of the federal state autonomous educational institutions of higher education „Samara National Research University named after Academician S.P. Korolev” Doctor of Law, Professor, Honored Lawyer of the Russian Federation, Samara, Russian Federation, bezverkhov-artur@yandex.ru, 8(846)337-99-30.

** Senior Lecturer of the Department of Civil Procedural and Business Law of the federal state autonomous educational institution of higher education „Samara National Research University named after Academician S.P. Korolev”, PhD in Law, Samara, Russian Federation, elekina.s@yandex.ru, 8(846)337-99-30

Therefore, one of the main tasks is the adequacy of the legal tools of modern digital reality which can only be reached through fundamental research.

Key words: digitalization, legal regulation of the digital economy, legal protection of information and telecommunication relations, law in the field of high technologies, fundamental research.

INTRODUCTION

Modern society and man are at the intersection of many worlds that have a biological, informational, social and other very different nature. At the same time, the development of today's society and social progress are subject to their own special laws, which are sometimes counter even to the laws of the physical world. For example, one of the laws of physics is the second law of thermodynamics. According to the latter, the physical world moves with the flow of time, under the influence of a huge stream of disorganization and disorder. This flow "in accordance with the second law of thermodynamics tends to reduce everything to thermal death, universal equilibrium and sameness"¹. According to this law, in the physical world, order irreversibly gives way to chaos, irreversible processes of energy dissipation and an increase in entropy, loss of stability and an increase in the degree of lack of system².

On the contrary, processes of orderliness and discipline, stability and stability dominate in modern society. What ensures historical progressive development? Thanks to what mechanisms does society develop in the direction of increasing and complicating the levels and methods of organization and management? What social phenomena and processes oppose the „second law of thermodynamics“ - social chaos? One of these fundamental constructs is law as the main type of regulators of social relations, and its main form of expression is legal acts. Legal regulation is the process of purposeful influence of the state on significant social relations with the help of special legal means and methods that are aimed at streamlining them. Legal regulation reduces the level of disorder and gives stability to social development.

As already emphasized, man and society are surrounded by many worlds. One of such world orders is the legal world. To somewhat paraphrase the words of a well-known cybernetics scientist, I will note: „in this world, the first duty of lawyers is to arrange islands of order and system, stability, and certainty. These islands do not exist forever in the form in which we once created them. Like the Red Queen, we must run as fast as we can to stay where we once left off“³.

Law and legal acts are called upon to consolidate positive patterns of behavior in social relations and to oust socially harmful actions - what D. Maxwell,

1 Viner N. I am a mathematician. Izhevsk: Research Center „Regular and Chaotic Dynamics“, 2001. P. 281.

2 Entropy is a measure of the irreversible dissipation of energy, a measure of the disorder and uncertainty of a system.

3 See: Viner N. *Ibid.*, pp. 281-282.

L. Boltzmann and D. Gibbs associated in their physical works with „thermal death“. Here, at the same time, the socio-political value, organizational and managerial features and social strength of the legal world and law are manifested - their ability to build islands of order even in the “boiling magma” of social cataclysms, create „laws of war“, streamline the processes of military operations, create sets of rules „conduct of combat“, including the use and appliance of weapons.

1. LAW AND LEGAL ACTS ARE EFFECTIVE IF THEY ARE SOCIALLY DETERMINED

Law and legal acts are effective, finding grounds for their stabilizing structures in society. Their role especially increases in the conditions of serious social transformations, the becoming of new socio-economic formations, the formation of a previously unknown socio-political system. The main task of the legal world is to ensure reliable protection of social relations that are born in the course of revolutionary transformations, emerging in the process of global evolutionary changes, emerging in the conditions of formational or civilizational transformations. Increased protection of the new world order is one of the main tasks of law and legal acts.

The current stage in the development of social relations is unique. The 21st century will go down in history as the century of informatization and digitalization. The human world is going through a new stage of its development in this century, which is seen as the fourth industrial revolution - a new approach to the production, distribution, exchange and consumption of goods, works and services, based on the mass introduction of information technologies into various spheres of social life, large-scale automation of social processes, the spread of artificial intelligence and robotization, the Internet of things, etc. High technologies create a new parallel reality, a previously unknown world - post-information, virtual, electronic, digital. A world that is very different from the traditional physical, natural world in which society and man are accustomed to live.

The specified feature of the new world is reflected in paragraph „p” of Article 4 of the Decree of the President of the Russian Federation of May 9, 2017 No. 203 „On the Strategy for the Development of the Information Society in the Russian Federation for 2017-2030”. Here, the digital economy is considered as an economic activity, where the key factor of production is digital data, the processing of large volumes and the use of the analysis results of which, in comparison with traditional forms of management, can significantly increase the efficiency of various types of production, technologies, equipment, storage, sale, and delivery of goods. and services. The digital economy is not a separate industry, but a basis, a foundation that allows you to create qualitatively new structures, designs, models in the field of entrepreneurship, and in the social sphere, and in the political sphere, and in the field of education.

Digitalization sets a new paradigm for the development of the individual, society, and the state. At the same time, it becomes obvious that no matter how we define the digital economy, our connection with the digital world becomes a defining characteristic of the further progress of society. The digital development of the economy will accelerate.

The logical consequence of the transformation of society in the era of the digital economy was the emergence of new - digital relations, characterized by the presence of specific components. For example, social networks (VK, Telegram, etc.); cloud computing services and computing; global big data bases; industrial internet and e-commerce; virtual and augmented reality technologies; tokens and mining; smart contracts; cryptocurrencies („Bitcoin”, „Ethereum”, „Ripple”, „Litecoin”, etc.); blockchain - technologies based on the principles of a distributed ledger; cyberspace; electronic persons. As rightly noted, „in fact, these technologies are hybrids that combine a person with non-human entities, and the latter, when created, receive a certain autonomy from a person”⁴. Moreover, as V.D. Zorkin noted, the latest high technologies invade human nature and create real threats not only to the preservation of the biosocial unity of mankind, but also to the survival of man as a biological species. „Kant's definition of freedom as an original right, inherent in every person by virtue of his belonging to the human race, is not at all as abstract and limitless as it might seem at first glance. After all, it includes such restrictions on human rights that are due to his belonging to the human race and are associated with the need to preserve humanity. And this means that the Kantian categorical imperative includes the imperative to preserve humanity as a social integrity and man as a biological species”⁵.

2. THE ESSENCE OF THE NEW (INFORMATION, POST-INDUSTRIAL, DIGITAL, ELECTRONIC) SOCIETY

The essence of the new (information, post-industrial, digital, electronic) society is in a society in which computer information, high technologies, and the constant reproduction of new ideas are playing an increasing role. If on the scales in such a society we put, on the one hand, material goods (things), and on the other hand, intellectual values, the latter will outweigh.

It is obvious that such a society has its own laws. One of them has already been identified - in such a society, knowledge and intellectual values are in the first place, and not real property or material property. In such a society, it is information and information processes, and not physical labor or machine production, that become the main variables that shape social needs and interests.

4 Viktor Blazheev, Maria Egorova (2020). *Digital law: textbook*. Moscow: Prospekt, P. 14

5 Zorkin V.D. (2022). Russian law: alternatives and risks in the context of global crisis: lecture by the Chairman of the Constitutional Court of the Russian Federation at the anniversary St. Petersburg International Legal Forum, June 29, 2022 // https://rapsinews.ru/judicial_analysis/20220629/308071489.html (accessed 06 August 2022).

Other patterns of the new world order are due to the peculiarities of information and information resources.

Information is a reflection of various states (diversity) of the real world. This reflection is expressed in the form of symbols and signs, denoting, according to the theory of K. Shannon, the removed uncertainty of our knowledge about something. For society and a person, obtaining the necessary information is not only the satisfaction of some curiosity or self-learning. It's about gaining a sense of *security*.

The uniqueness of information lies in the fact that it cannot be classified as a sphere of matter. Information is *intangible*. The material side of information is secondary. Along with physical substances and energy, information processes serve as the basis for the reality of the world orders around us, all particles of which carry information as a negation of entropy. This circumstance indicates a reality parallel to the physical world, which is distinguished by its own rules and laws.

Moreover, in modern astrophysics an approach has been put forward, according to which the physical world is based on the informational one. According to the scientific views of the American theoretical physicist D. Wheeler, the basis of physical phenomena is information, all objects of the physical world should be considered as secondary, as carriers of an abstract and fundamental essence - information. Information forms the integral core of physical reality itself. In 1990, this scientist suggested in his paper „Geons, Black Holes and Quantum Foam: A Life in Physics“ that information is a fundamental concept in physics. According to his doctrine *it from bit*, all entities are basically information-theoretical, any physical object and matter are based on information⁶. This means that each particle (for example, a field or force, space-time) produces its own function, has its own meaning, and leads its existence from the answers to yes or no questions (binary choice - bits). Then it turns out that the basis of the reality of our physical world is not matter and energy, but an intangible source based on the exchange of information⁷.

By the way, the inapplicability of the paradigm of property rights and other real rights to information leads to the formation of new legal structures and institutions. One of these is the „digital rights“ provided for by the Federal Law of March 18, 2019 No. 34-FZ „On Amendments to Parts One, Two and Article 1124 of Part Three of the Civil Code of the Russian Federation“. It is proposed to understand digital rights as “obligatory and other rights, the content and conditions for the exercise of which are determined in accordance with the rules of an information system that meets the criteria established by law. The exercise, disposal, including transfer, pledge, encumbrance of a digital right

6 John Archibald Wheeler (1998). *Geons, Black Holes & Quantum Foam: A Life in Physics*. New York: W.W. Norton & Company.

7 Grigoryan G.R. (2021). *Fraud in the field of computer information: problems of criminalization, legislative regulation and qualification: dissertation for the degree of candidate of legal sciences*. Samara: Samara National Research University „Academician S.P. Korolev“, p. 182.

in other ways or restriction of the disposal of a digital right is possible only in the information system without recourse to a third party" (Part 1 of Article 141.1 of the Civil Code of the Russian Federation).

On July 31, 2020, Federal Law No. 259-FZ „On Digital Financial Assets, Digital Currency and Amendments to Certain Legislative Acts" was signed. This law is aimed at regulating relations arising from the issuance, accounting and circulation of digital financial assets, as well as relations arising from the circulation of digital currency in the Russian Federation. Here are the definitions of the basic categories of this regulatory legal act. *Digital financial assets* are digital rights, including monetary claims, the possibility of exercising rights under equity securities, the right to participate in the capital of a non-public joint-stock company, the right to demand the transfer of equity securities, which are provided for by the decision to issue digital financial assets in the manner prescribed by law, issue, accounting and circulation of which is possible only by making (changing) records in an information system based on a distributed registry, as well as in other information systems. *A digital currency* is a set of electronic data (a digital code or designation) contained in an information system that is offered and (or) can be accepted as a means of payment that is not the monetary unit of the Russian Federation, the monetary unit of a foreign state and (or) an international monetary or unit of account, and (or) as an investment and in respect of which there is no person liable to each owner of such electronic data, with the exception of the operator and (or) nodes of the information system, which are only obliged to ensure compliance with the procedure for issuing these electronic data and implementing in respect of them actions to make (change) entries in such an information system by its rules. The requirements of this Federal Law do not apply to the circulation of non-cash funds, electronic funds, as well as to the issue, accounting and circulation of non-documentary securities (Article 1). In the Russian Federation, it is prohibited to disseminate information about the offer and (or) acceptance of digital currency as a consideration for goods transferred by them (them), work performed by them (them), services provided by them (them), or in any other way that allows one to assume payment for goods in digital currency (works, services) (Article 14).

Even a cursory acquaintance with these short stories shows that these are not digital forms of the current currency, but a completely different paradigm of means of payment associated with private emission.

Another legal act that needs to be mentioned is the Federal Law of July 31, 2020 No. 258-FZ „On experimental legal regimes in the field of digital innovation in the Russian Federation". This source understands digital innovation as a new or significantly improved product (good, work, service, protected result of intellectual activity) or process, a new sales method or organizational method in business practice, workplace organization or in external relations, put into use, created or used in the areas provided for by this law. The experimental legal regime in the field of digital innovations implies the application of special

regulation in relation to the participants of the experimental legal regime for a certain period of time in the areas of development, testing and implementation of digital innovations. Experimental legal regimes in the field of digital innovations cover the following areas: 1) medical activities, including using telemedicine technologies and technologies for collecting and processing information about the state of health and diagnoses of citizens, pharmaceutical activities; 2) design, manufacture and operation of vehicles, including highly automated vehicles and unmanned aerial vehicles, certification of their operators, provision of transport and logistics services and organization of transport services; 3) agriculture; 4) financial market; 5) provision of state and municipal services and implementation of state control (supervision) and municipal control; 6) industrial production (industry) and much more. One of the main goals of the experimental legal regime is the formation, based on the results of the implementation of the experimental legal regime, of new types and forms of economic activity, ways of carrying out economic activity.

Further, the traditional economic understanding of exhaustibility is inapplicable to the information good. This is an *unlimited* resource. Just as information does not have a physical nature, so information does not have the quality of rarity in the traditional sense of the word. Therefore, the same information may be simultaneously held by many individuals and legal entities. This is due to the fact that information is stored (does not disappear) in the processes of its use, consumption, disposal. Information in this sense is *inexhaustible*.

The non-susceptibility of digital data to physical aging (a process characteristic of biological organisms) leads to the formation of a *huge array* (large volume) of information that is simultaneously available to virtually unlimited circle of people. Both in space and in time. In this sense, information is „immortal“, as they say, „manuscripts do not burn“. Moreover, receiving the property of inexhaustibility, information resources provide themselves with more and more „easy“, „accelerated“ assimilation over time, taking into account, first of all, the limited biological capabilities of a person to perceive information: on the one hand, a modern person in a short period of time (a week, a month, year) is capable of consuming such a volume of information that people of the beginning of the 20th century mastered maybe all their lives, and on the other hand, media consumption has now reached such a level and volume that it can easily exceed the number of hours in a day, since modern life allows you to receive information simultaneously from a variety of sources.

The historical and legal approach shows that law and law have always dealt with limited resources (land and other natural objects, other real estate and movable property). Now these regulators will have to learn to regulate public relations regarding information and other *unlimited* resources.

Another curious moment. If, as the material and technical base is used, the latter is depleted, then information increases as it is used. The consumption of things is their exhaustion and destruction; consumption of information is its distribution and expansion. Information in the process of consumption

is capable of replication, copying without restrictions and damage to its content, information is capable of practically unlimited multiplication. At the same time, the desire of information for generalization and self-growth is its regularity.

In addition, the uniqueness of information also lies in the *subjectivity of its perception*. The value of information is determined by the consumer himself. Moreover, for different consumers the same information may have different subjective value. Here, the labor, exchange theory of value is replaced by the „information theory of value“. In the latter, the value of information is defined as the difference between the probabilities of achieving the goal before and after receiving the information resource. The problem is the development of adequate mechanisms for evaluating information benefits.

Finally, one cannot fail to mention the peculiarities of the circulation of information, which must also be taken into account in the legal regulation of the relevant relations. In circulation processes, information passes from one person to another without leaving the first owners. After all, information passes from one person to another usually not by alienation, but by copying, transferring, distributing, writing off. However, it is usually retained by the original owner. Alienation will take place only when the original owner is unable to recreate the lost information (which happens extremely rarely). And it is impossible to return information back (or rather difficult) without other persons ceasing to possess it (as they say, „a word is not a sparrow, it will fly out - you won't catch it“). Further, it is unacceptable to sell an individually defined thing to several market participants at the same time - this is, in fact, fraud. And the same information can be sold many times not only to different, but also to the same participant in economic relations, and here, as a rule, there is nothing reprehensible and illegal.

3. DIGITIZATION IN CONTEMPORARY SOCIAL RELATIONS

Digitalization penetrates deeply into the fabric of modern social relations. It involves not only the solution of purely technical problems, but also the creation of a legal framework that will regulate the numerous issues of freedom and security associated with the use of digital technologies. Digitalization affects legal regulation. The law is changing in the context of digital transformation, as high technologies fill the law with new content. Society needs legal support for the digital economy. The time of digital transformation determines the further improvement of legal systems, predetermines the proper legal regulation and protection of new relations. The law cannot remain indifferent to the virtual and electronic phenomena of our life, which are penetrating deeper and deeper into the fabric of modern society. It is obvious that new economic and other relations that come into contact with the information environment, as well as with robotics, artificial intelligence, electronic legal reference systems, etc., require new legal regulation and reliable legal protection.

The state has taken a course towards digitalization, which involves both technical and economic support of the tasks set, as well as legal regulation and protection of new realities. Therefore, due to digital transformation, there is an improvement and further development of both the technological, economic and legal systems. In this regard, one of the most important tasks is the formation of a comprehensive legal regulation and protection of the digital economy, based on a flexible approach in each area.

In connection with the entry of modern society into a post-industrial state, a whole range of legal issues arises. One of them is related to the implementation of the principle of *humanism* in the new conditions. In the era of high technology, the principle of humanism, the legal provision of human security becomes especially acute. At the same time, the main task of the latest law is the effective regulation and reliable protection of digital relations. As emphasized earlier, the digital society and economy need legal regulation. They need legal regulation in order to protect, first of all, the human essence, so that a person and his inalienable rights always prevail and have priority over digital technologies.

Digital reality is increasingly stepping on traditional law. After all, law usually does not create new relationships, but formalizes relationships that have already developed or are developing. As the saying goes, a lawyer can only catch what is already established. However, in the digital world, we are increasingly dealing with *the principle of leading legislative reflection*. Modern law is designed to both determine the formation and accelerate the development of digital relations.

This circumstance initiates the development of *new legal tools* that are directly designed to ensure the legal regulation and protection of digital relations. When creating a new categorical apparatus, it is advisable to rely on the data of the theories of control, communication and information.

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Артур БЕЗВЕРХОВ ГЕНАДИЈЕВИЧ

Светлана ЕЛЕКИНА ВЈАЧЕСЛАВОВНА

ПРАВО У ДИГИТАЛНО ДОБА

Резиме

Закон не иде у корак са брзим развојем дигиталних технологија, што је због генерално конзервативне природе права као универзалног регулатора и чувара значајних друштвених односа. Стога законодавац често користи стари, временски проверени арсенал да регулише потпуно нову врсту понашања. Али можемо ли уз помоћ регулатора преддигиталне ере да регулишемо нове појаве? Чини се да преддигитални регулатори овде нису прикладни. Препоручљиво је благовремено осмислити постиндустријске регулаторе, јер нови објекти правне регулативе и заштите не одговарају традиционалним правним средствима и алатима који се могу користити. Налазимо се у почетним фазама трансформације правних норми у дигиталној економији. Наше традиционалне конструкције, сасвим погодне за заштиту индустријске привреде, тешко да су у стању да ефикасно издрже навалу „дигиталних“ изазова, поуздане правне подршке информационе безбедности у ери постиндустријализма. Стога је један од главних задатака данас адекватност правних алата савремене дигиталне стварности до којих се може доћи само кроз фундаментална истраживања.

Кључне речи: дигитализација, правно уређење дигиталне економије, правна заштита информационо-телекомуникационих односа, право у области високих технологија, фундаментална истраживања.

*Milosav V. MILOSAVLJEVIĆ**

Univesity in Beelgrade, Belgrade

PERSPECTIVES OF BASIC RESEARCH

Abstract: Basic research has flourished since the beginning of the 20th century, and this applies equally to natural and social sciences. Thanks to this, some modern theories and scientific knowledge were created. Attempts to create integrated basic research appeared only at the beginning of the same century, but the division between natural and social sciences, as well as within these two groups, is still visible. One can talk about multidisciplinary rather than basic research. At the same time, there was a tendency to specialize and fragment the sciences.

Partialisation, pragmatism and empiricism as characteristics of modern sciences are a significant obstacle for basic research and basic sciences.

Basic research must be aimed at determining the essence and general characteristics of some particularly important natural or social phenomena, with the intention of generalization. Basic researches delve into the core and laws of social and natural phenomena and are not most often oriented towards solving a particular problem, although they are indirectly applicative due to their influence on special sciences.

In our opinion, basic research in the future should specifically deal with the following phenomena, which are both natural and social in nature:

1. population explosion and demographic crises.
2. family, other primary communities and forms of affiliation in the future.
3. environmental problems and the survival of the world,
4. globalization and
5. poverty and quality of life.

In the study of all these phenomena, it is necessary to apply a holistic, interdisciplinary multidimensional approach.

It is also obvious, the need to review basic scientific principles and existing paradigms, both in social and natural sciences. To this should be added the need for permanent evaluations, re-examination and a critical attitude towards scientific results and ways of arriving at scientific truth.

Key words: Basic research, multidisciplinary, partialization of sciences, environmental problems, poverty, globalization.

* Full professor in retired, milosav.milosavljević@gmail.com

1 ABOUT CONCEPTUAL DEFINITIONS

Although it seems unnecessary, we will repeat here one definition of science, bearing in mind the fact that there are differences in the definition of this term. „Taking into account the common general characteristics of science, one could start from the fact that it represents an organized and systematic thought activity, which has the characteristics of human activity and civilization creation, and whose goal is to determine the peculiarity, regularity and legality of the essence and existence of man and natural or social phenomena“ (Milosavljević 2013: 47).

The main goal of science is the permanent establishment and expansion of knowledge about man, his relationships with other people, the natural and social environment, as well as about nature and society. Therefore, „scientific knowledge is only one specific type of human knowledge which, by its nature, goals, principles, content, character and method, differs from other types of human knowledge, such as philosophical, artistic and common sense.“

„Scientific knowledge is particularly different from other types of knowledge by the search for truth, the establishment of general characteristics, regularities and scientific regularities. (Milosavljević & Petrović 2017: 14)“. The main goal of every science is the constant search for truth as well as the determination of general features, regularities and laws, which most often refer to the determination of some deterministic tangles and regularities in the relationships and connections between some phenomena.

Basic or general sciences have a broadly defined field of research. For example, sociology, as the most general science, studies society in totality, while special sciences have as their subject only some part of reality (e.g. sociology of social deviations studies deviations in society), and the subject of specialized disciplines refers to an even narrower field of phenomena (e.g. sociology social disorganization). It should not be concluded from this that there is some kind of hierarchy and, conditionally speaking, subordination between the sciences. Although special and specialized sciences draw their starting points from general and basic sciences, they, for their part, by developing scientific knowledge about a part of reality, enable generalization and determination of regularities and laws, which rule in a wider area of phenomena.

When it comes to basic sciences, in most scientific and general dictionaries, the term basic sciences is related to natural sciences (Collins Dictionary, Merriam-Webster Dictionary, Encyclopedia Britannica, etc.). A similar approach is found in the International Program (ISP) of Uppsala University, where the basic sciences are: mathematics, physics, chemistry and biology. They are considered basic because they provide fundamental understandings of natural phenomena and the processes through which natural resources are transformed (op. Cit. 1. ISP, 2022). In some texts, geography is also considered a basic science.

When it comes to social sciences, there is a widespread opinion that sociology is a basic social science, because it comprehensively investigates and defines society and social phenomena, thereby creating the most general frameworks

for research and explanation of the peculiarities and specificities of special social phenomena. Economics, anthropology, psychology, history, law and political science are also considered basic. However, the practice of developing these sciences was less towards their integration, that is, towards integrative approaches to certain social phenomena. On the contrary, the desire to define the field (subject) of research of each of these sciences individually contributed to their separation and, often, distance. Empiricism and the specialization of the sciences additionally contributed to this.

2 BASIC RESEARCH

Basic research has been especially developed since the beginning of the 20th century, but most often within the framework of certain sciences, which is equally true for natural and social sciences. Some modern theories and scientific knowledge arose thanks to this. It was only at the end of the last century that ideas and examples of integrative basic research appeared, especially on the borders of touching their subjects or multidimensional problems. These researches are also known as interdisciplinary or multidisciplinary.

Attempts to create integrated basic research appeared only at the beginning of the same century, but the division between natural and social sciences, as well as within these two groups, is still visible. One can rather speak of multidisciplinary rather than basic research, although this type of research is the way to the creation of the latter. Basic research is by its nature, most often exploratory, descriptive and explanatory.

There are perceptions that ad hoc experimental research belongs to basic research. However, their character is determined by the subject and goals to which they are dedicated. Namely, basic research is aimed at determining the essence and general characteristics of some particularly important natural or social phenomena, with the intention of generalization. On the other hand, applied research tends to find ways to solve some specific problems. It is desirable, but it is not a rule in practice, that they are based on basic research.

Basic research is often optionally called 'pure' and is directed mainly towards the development of scientific theories as a way towards understanding and predicting the most important characteristics and dynamics of natural and social phenomena. They are, then, the basis of special and specialized research, as these can contribute by radically opening up some general questions.

Basic researches delve into the core and laws of social and natural phenomena and are not usually oriented towards solving a particular problem, although they are indirectly applicative through their influence on special sciences. It should be added that for a long time, applied research has had an advantage over basic research, especially in the social sciences. This is a consequence of the intersection of two separate but similar interests: financiers and research commissions, who are interested in the concrete usability of scientific results,

and scientists, who do not have the capacity for basic research or opt for an 'easier' path out of opportunity.

It is common for basic research to be related to essential questions of some individual or several sciences. Also, it is a widely accepted view that they are performed within basic sciences such as mathematics in the natural sciences and sociology in the social sciences. Following these attitudes, the division of sciences into general (basic), special and individual (specialized) sciences arose. It was the partialization and division of the sciences that led to the neglect of basic research, all the more so since specialized sciences usually have a more pronounced applied character and hence, more easily get the support of power holders and interested structures. Some paradigms, such as the neomodernist one, question this classification of sciences and, even more, the understanding of science as a system of knowledge and methods used to arrive at scientific truth.

The issue of integrative approaches becomes topical not only within groups of (natural and social) sciences, but also between them. This becomes clear if the complexity and multidimensionality of the most important problems of the modern world are taken into account.

In general, the relations between natural and social sciences went through various stages: initial integration in the framework of philosophical understandings; strict separation of natural (positive) and social sciences and convergence and attempts to connect, interdisciplinarity as a way of connecting.

Although interdisciplinarity is opposed to multidisciplinary, it is not, by itself, sufficient for the integration of the sciences. To that extent, the two authors are right when they claim: „Integration in this context means the convergence of empirical knowledge, related to the same phenomenon, collected within individual professions and interpreted within their parameters and orientations, so that any analytical synthesis would be a minimal combination of parts and maximum new perspective“ (Wolfgang & Feracuti 2012:11).

The integration of sciences and emphasis on basic research is by no means a call to create a 'new philosophy'. Although it is not in accordance with the current state of science, the need for integrative research arises from the nature of the key subjects of scientific research and the connection between natural and social phenomena.

Partialization, pragmatism and empiricism, as characteristics of modern sciences, represent a significant obstacle for integrative and basic research.

3 PERSPECTIVES OF BASIC SCIENCES AND RESEARCH

The future of basic research will depend, among other things, on the answers to the following questions:

1. is the emergence of basic sciences a matter of the ability and creative imagination of individual efforts, „think tanks“ or integrated scientific institutions and structures, or are some previous steps necessary;

2. what are the necessary changes in society's relations with science? In other words, who does science serve;

3. what are the inevitable changes in the attitude of scientific creators towards their social vocation, which is also related to the ethics of scientists. In other words, how to increase the responsibility of scientists for the implications and use of their knowledge? Will we continue to observe the „treason of intellectuals“ or will they become part of the critical consciousness and conscience of humanity;

4. can we expect the establishment and development of scientific criticism, which would tighten the scientific criteria of some knowledge and without which much is presented as scientific today;

5. in the future, what will be considered scientific truth(s) as the key goal of science and what are the elements of its definition;

6. are precision, reliability, verifiability and usability the only principles of science, or should some new ones be developed, including those beyond the scope of science (eg humanity)?

When it comes to social sciences, the essential question is whether basic research is possible within the dominant paradigms in them? This especially applies to sociology, as the most general social science. This issue is complicated by the fact that other sciences such as economic, political, legal, psychology, although special, have features that are basic for their fields of research (special conceptual-categorical apparatus, theories, methods and scientific results).

On the other hand, as Turner argues: „Sociology is not a homogeneous or seamless discipline. It has always been divided in some way due to different traditions, epistemologies, values and methodologies. Sociological theories and ideas are more open to challenge and debate because of their social and political implications (Turner 2006: 13)“.

It is our opinion that the possibilities of existing paradigms in sociology to create a base for the future of basic research are limited. They have already given rise to a number of conflicting theories (mostly of the middle range according to the idea of W. Mills), many empirical studies and a specific methodology. Then the question is open: How to proceed? In response to this query, different answers are possible:

1. the emergence of new paradigms in accordance with new scientific and social needs;

2. close association of social sciences on the basis of respect and equality under the umbrella of sociology or „new anthropology“, which implies a closer association with natural sciences, especially those whose subject is the human being and his relations with the natural and social environment. At the same time, we do not agree with the position of the author quoted above: „that the modern enthusiasm for multidisciplinary and interdisciplinarity obscures the need to preserve the basic disciplines“ (Ibid. : 13).

Our position is that multidisciplinary and interdisciplinarity are an intermediate step towards the further development of basic social sciences and

their connection with natural sciences. To this should be added the need for permanent evaluations, re-examination and a critical attitude towards scientific results and ways of arriving at scientific truth.

4 PROBLEMS (QUESTIONS) AS A PRIORITY OF BASIC RESEARCH IN THE FUTURE

There are different views of the problems that should be prioritized in future basic research. In our opinion, the choice of priorities depends on the synergy of interests of research funders and researchers. Bearing in mind the scientific, social and practical importance and complexity of natural and social phenomena, we believe that priority in future basic research should be given to:

1. population explosion and demographic crises,
2. environmental problems and the survival of the world,
3. globalization and
4. poverty and quality of life.

4.1 Population explosion and demographic crises

The demographic picture and trends in the demography of the world are made up of two contradictory processes: the population explosion at the world level and within the framework of the least developed regions, and the demographic crisis predominantly in the developed countries of the Western Hemisphere. Apparently, these are two contradictory processes, however, they are interrelated.

The population explosion is expressed in the fact of the permanent growth of the world's population starting from the great population crisis in the middle of the 14th century, when there were about 370 million people on the planet. In contrast, the number of inhabitants of the planet was almost nine billion in 2019.

Although the growth rate of the world population has stabilized in recent decades at 1.2%, which is 140 million per year, the overall growth trend continues. Existing regional differences show that the largest population is in Asia (60% of the world's population, of which 18.3 in China and 17.5 in India), while the population of Africa makes up 15%; Europe 12%; Latin America 5%, North America 5% and Australia and Oceania 0.5%.

Depopulation as a demographic process is more present in Europe than in other parts of the world due to the reduction of natural increase, emigration, refugees and similar phenomena. The population crisis also follows Serbia, which has about 7 million inhabitants, but also a negative natural increase of about 35,000 per year.

Among the demographic phenomena that require complete basic research, the process of accelerated aging of the world population should be mentioned. Thus, the number of people over 80 years old is expected to increase by 426 million in 2050 compared to the current 147.

To the plea for basic research of these phenomena, we add the necessity for scientists not to give in to the evaluations and decisions of politicians, because they strive for quick and even inhumane solutions (neo-Malthusian methods and means).

4.2 Environmental problems and the survival of the world

There are few who are not aware of the importance of air, water and soil for all living beings, including humans. However, there are few individuals, organizations and institutions that care about these sources of life. The balance between man and nature is disturbed, and many biospheres, as a symbiosis of nature and man (human communities), are threatened or destroyed. It is the last moment to replace carelessness and destruction with care for man's micro, meso and macro natural and social environment.

Modern technologies have polluted all segments of natural resources at the expense of apparent improvements in human life.

Man today has never been so far from nature to the detriment of both. Since the industrial revolution, in the search for constantly new resources, the human environment has been destroyed and polluted on a large part of the planet.

Urbanization and the disappearance of villages have led to an even greater distance from nature. The global city is becoming a gathering place for millions of people in conditions of distance from nature and other people. A special issue is the fact that the majority of the population of the megapolis lives in extremely poor conditions in every respect. With pronounced homelessness, alienation becomes a social and psychological phenomenon for many people. Today, for economic and political reasons, dirty technologies are moving from developed countries to the most underdeveloped countries, where labor is also very cheap. Thanks to the unreasonable interventions of a small part of the world's population, many animals, plants and other living organisms are disappearing, while the pollution of such vital needs is enormous (water, air, land). An example of human carelessness is the destruction of large green areas, the creation of so-called ozone holes, the „greenhouse” phenomenon and the melting of glaciers.

It is the misfortune of mankind that inventions and innovations, especially scientific ones, are not used for the benefit of man. During the entire civilization, a lot of energy has been spent on finding and applying destructive means, with which, in addition to human lives, many goods and the results of positive creation are destroyed. Destructive forces, which are always at the disposal of the most powerful, today are of such proportions that not only the entire world population but also the planet as a whole can be destroyed many times over.

Biosocial systems such as megacities and cities in general represent a special challenge for basic research in ecology; North Pole; Brazilian jungles and other sparse rainforests; large deserts, uninhabited areas; oceans and seas; production of healthy food and revitalization of villages.

Key questions for basic research in this area are:

1. what are the ways of rehabilitation of destroyed nature;
2. what are the ways and means of establishing biosocial balance at the level of the entire world;
3. who are the possible bearers of these fundamental changes since the governing structures ignore these problems and have a relationship with particular states or global capital and
4. how to strengthen the responsibility of scientists for a critical and creative attitude towards environmental problems, because no one can absolve them for participating in this scourge?

Distancing from the politics of decision-making contributes to the fact that the scientific results of the greatest minds are used to produce increasingly sophisticated means of destruction. Today, more than ever, one can talk about the betrayal of intellectuals (Benda).

Instead of serving the powerful intellectuals of the future, they should turn to finding solutions for many very complex problems of the modern world, not only environmental ones.

4.3 Globalization

Globalization has brought to light some new planetary negative phenomena such as uniformization, imposing views on life and the world, fundamentalism and xenophobia, instead of multiculturalism, tolerance, solidarity and understanding.

“Globalization basically means the spread of neoliberal ideas, models and practices around the world.” We are talking about complex processes that are established by the force of economic, political and military power on the territory of the entire country, as the basis of new economic, social, political and other relations in the modern world, which some label as a new world order. The power of the bearers of globalization is so great that individual, mostly unrelated, resistances rather appear as indicators of the inexorability and unstop ability of this universal tendency in the overall relations within the modern world, than as a different view and way out of the complex economic, political and social relations and problems with which the majority of states and population are happy” (Milosavljević 2009: 312).

Although there is no doubt that globalization has some of its positive effects related to the openness of all modern societies to the world, the expansion and quality of communication between people, the importance of human rights and different international standards, association around some common problems of the modern world, such as poverty, some mass health problems, ecology, drinking water, etc., it has its visible unfavorable social, political, economic, cultural and other effects. Globalization has significantly changed relations on the world stage and within individual societies. However, it has brought the greatest benefits to rich and powerful social structures, both within individual countries and at the global level. It has made the differentiation within individual countries even sharper and more visible, and even more so on a global scale. The already divided worlds of the poor, underdeveloped, powerless and dependent, on one side,

and the increasingly rich, developed, powerful and dominating worlds are further apart. Thus, the population within most countries is divided into the majority of the impoverished and poor and a significant minority of the rich and powerful. Part of the globalization process is the imposition of values, lifestyles, and patterns of behavior on others, especially those who are independent.

The negative consequences of globalization must and potentially can be dealt with by those who are victims of these processes, but they are basically powerless, disorganized and do not have adequate resources. Although the majority of scientists also belong to this group, they have the intellectual power to study and warn the public about the disastrous and numerous consequences of this conception and practice.

Having various aspects of globalization (economic, political, ideological, social, cultural and practical), there is an obvious need for basic and by no means partial research.

4.4 Poverty and people's quality of life

In the literature and in practice, there are different understandings, methods of monitoring and measuring poverty, but they are mostly conventional in nature and often formalized. Therefore, the statistics that monitor poverty should be taken with a grain of salt. So, for example, data from the World Bank for 2019 speak of 9.2% or 689 million people in the world living in extreme poverty. In the USA, as one of the richest countries in the world, 10.5% or 34 million people were extremely poor¹. It is clear that this measure has only a quantitative and debatable character (income per capita) and that only basic survival needs are taken into account.

On the other hand, according to data from the United Nations Development Program (UNDP) for 2020, 1.3 billion inhabitants from 107 least developed countries lived in poverty.²

In Serbia, the criteria of the World Bank are used to determine poverty, according to which those who have an income of less than 1.9 dollars per day are considered poor, which is used for comparative data on the international level. Official data speak of 10% of such persons in the total population. The poverty risk rate in Serbia in 2020 was 21.7% (RZS, October 2021)³. With all the reservations according to these criteria, it could be concluded that at least 10% of the population of Serbia live in poverty, and 21.7% are at risk of poverty.

Therefore, the poverty of a large part of the inhabitants of national states and in the world as a whole is a long-term inevitability, which requires multiple and complex measures of policy makers at the national and international level. The actual programs of specialized organizations and UN agencies

1 The measure of extreme poverty is an income of less than 1.9 dollars per day per capita.

2 The UNDP website was accessed on March 7, 2022.

3 The poverty risk threshold was RSD 22,000 per month for a one-person household, 39,600 for a household of two adults with a child under 14 years old, etc.

hardly reach the poor. At the same time, there is an interest, both of the rich within individual countries, as well as in the world as a whole, to maintain poverty in a „controlled” manner. The situation is worsened by the absolute impotence of poor citizens and states. The matter is complicated by the fact that poverty is reproduced and is most pronounced in poor and underdeveloped countries.

All these facts point to the necessity of basic research, which, in addition to searching for solutions, can also be „awakeners” of the sleeping consciousness of the developed and powerful and „wind at the back” of the poor and powerless.

Poverty certainly refers to the ability to meet needs in the areas of health, education, family and social protection, culture, housing, water and energy supply, hygiene and free time, etc.⁴

Many people in today's world do not have access to the conditions for daily survival, while a huge number of people live in poverty. All this leads to various social tensions and conflicts.

In conclusion, our opinion is that humanity has sufficient overall resources, at least to reduce extreme poverty (misery), but that they remain unused due to the existing economic, political and other divisions, diversity of interests and inequalities in the distribution of overall wealth and social power, both within of certain global societies, as well as on the international level.

When it comes to basic research in this area, it is realistic to expect that they can contribute to the understanding and reduction of poverty, especially if they cover this complex social phenomenon as a whole, and not only in some of its dimensions. This means that it is equally necessary to apply a holistic, interdisciplinary multidimensional approach in research and practice. What's more, these researches don't have to be directly directed only towards poverty but also other social contradictions.

On the basis of what has been said, it is also certain that the basic research of this complex problem must also include re-examination or redefinition of this term, as well as the creation of reliable and precise methods of measuring and monitoring this phenomenon.

An inseparable part of the problem of poverty is the issue of quality of life. This term does not mean only those needs that are defined by international standards (healthy water, food, micro and macro environment and social security), but social conditions for the satisfaction and development of all-round human needs. As the two authors write: “Human activities depend on human needs. Needs are classified in different ways, but there are two division dominant. The first distinguishes biological from social needs. It is beyond any doubt that biological needs are based on the nature of the human being, while social needs originate from human sociability (Termiz & Milosavljević: 2019:21)”.

Some authors separate biological needs from social ones. However, in this discussion, we should take into account the knowledge that biological needs

4 See: Jakšić (2002).

are also socialized and under the influence of various cultural and other factors (for example: religious). Be that as it may, it is beyond doubt the fact that human needs are mutually intertwined and interdependent and that an essential part of every human being.

The quality of life does not only refer to the spectrum of diverse human needs, but also to the equal distribution of general goods and services (especially in health, education, culture, rest and recreation and sports), perspectives of creative expression of people, participation in life and events in the community) the ability to procreate and maintain a family and a sense of security for oneself, family and loved ones.

In relation to the quality of life, artificially developed and supported needs within the commercialized society, which are especially nurtured by the most developed economies and consumer psychology, represent a special issue.

The issue of people's quality of life in the future is closely related to the problem of poverty, so it should be the subject of basic research, especially in the search for ways to improve the quality of life.

Among the resources of the future, social capital is of special importance, which especially includes the human, symbolic and cultural resources of the individual, family, other primary groups and global communities.

Social capital shares many characteristics with economic capital:

It represents value for their owners, it can be cumulated and, what is very important, it can be invested and thus create other values and benefits.⁵ In essence, the social capitals of individuals. The family, other social groups and communities are used for easier access to other, first of all, economic resources. In this sense, social networks, to which individuals and families belong and through which their power is strengthened and social capital that can be accumulated, multiplied and invested, are very important. The expansion and strengthening of social networks, along with additional political and economic conditions, is the condition of a greater role of social capital in the future, in the way that it becomes the property of people and their communities and not a tool of various powers.

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5 Compare with Jeff Manza (2006: 579): Social Capital, Cambridge Dictionary of Sociology. Cambridge University Press.

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Милосав В. МИЛОСАВЉЕВИЋ

ПЕРСПЕКТИВЕ ОСНОВНИХ ИСТРАЖИВАЊА

Резиме

Основна истраживања цветају од почетка 20. века, а то подједнако важи и за природне и друштвене науке. Захваљујући томе, створене су неке модерне теорије и научна сазнања. Покушаји стварања интегрисаних основних истраживања јављају се тек почетком истог века, али је подела између природних и друштвених наука, као и унутар ове две групе наука, још увек видљива. Може се говорити више о мултидисциплинарним него о основним истраживањима. Истовремено, постојала је тенденција специјализације и фрагментације наука.

Партијализованост, прагматизам и емпиризам као карактеристике савремених наука представљају значајну препреку за основна истраживања и фундаменталне науке.

Основна истраживања морају бити усмерена на утврђивање суштине и општих карактеристика неких посебно важних природних или друштвених појава, са намером уопштавања. Основна истраживања задиру у срж и законитости друштвених и природних појава и нису најчешће оријентисана на решавање одређеног проблема, иако су посредно апликативна због утицаја на посебне науке.

Према нашем мишљењу, основна истраживања у будућности треба да се посебно баве следећим појавама, које су природне и друштвене природе:

1. експлозија становништва и демографске кризе;
2. породица, друге примарне заједнице и облици припадности у будућности;
3. проблеми животне средине и опстанак света;
4. глобализација и
5. сиромаштво и квалитет живота.

У проучавању свих ових појава неопходно је применити холистички, интердисциплинарни вишедимензионални приступ.

Такође је очигледна потреба да се преиспитају основни научни принципи и постојеће парадигме, како у друштвеним тако и у природним наукама. Овоме треба додати и потребу перманентног вредновања, преиспитивања и критичког односа према научним резултатима и путевима долажења до научне истине.

Кључне речи: основна истраживања, мултидисциплинарност, парцијализација наука, еколошки проблеми, сиромаштво, глобализација.

*Momčilo J. SAKAN**

Independent University of Banja Luka

THE SCIENTIFIC ROLE OF HYPOTHESIS IN FUNDAMENTAL RESEARCH

“Hypotheses are the pillars for building a building.
After the completion of the building, the columns can
remain more or less visible or they can be
completely absorbed into its construction”.

The author

Abstract: In the paper, hypotheses and fundamental research are first problematized as two basic factors of the problem in question. Then, different attitudes of methodologists were pointed out regarding the understanding of hypotheses in research in general. At the end (in the applied part) the connection between hypotheses and other elements of the scientific idea in the research project (plan) is explained.

In the introductory part, the importance of fundamental research for the development of science was pointed out because it provides a methodological-logical and cognitive (epistemological) basis for other (applied and developmental) research. It was also pointed out that fundamental research does not significantly affect the choice and application of hypotheses. There are certain micro differences that are not so important to research.

Methodologists and other scientists had and still have different opinions about hypotheses. The paper shows only those differences that are brought to: understanding and creation of hypotheses, their place in research, connection with scientific theory, method of execution and verification.

At the end, the connection between hypotheses and other elements of the scientific idea - problem, subject, goals, method and justification of research - is explained.

Key words: fundamental research, hypotheses, scientific theory, research procedure, scientific idea.

* Professor Emeritus, momcilosakan@gmail.com

1. INTRODUCTION

Historically, hypotheses represented and still represent one of the most debatable elements in the field of methodology and science in general. Numerous problems of definition, creation and discovery are current; through the understanding of their function, classification and structure; until execution and verification. Those problems relate to all types of research, and this paper will discuss their specification only in applied research.

It is known that there are various gardens of research and that they are classified according to different criteria. According to the criterion of practical application of results, research is divided into: fundamental, applied and developmental. All classifications, like this one, however, should be viewed conditionally. The fact is that the fundamental (basic, fundamental) research is carried out for the purpose of acquiring new knowledge and expanding the boundaries of the existing knowledge system in a subject area, and that such research leads to such knowledge that will provide more and more explanations about the environment and the world as a whole. And the practical application of the results of fundamental research is also smaller than the results of applied research, but that does not mean that they do not exist. There are, therefore, various classifications of research, but these divisions are very conditional, especially when it comes to the research procedure and the application of hypotheses in it. There are only slight micro-differences in the formulation and structures of the hypotheses, which are not particularly emphasized in this part.

In more concrete terms, the entire process of applying the hypothesis: from noticing the problem, through the elaboration of the scientific idea, the realization of the research and verification, until the final preparation of the final document depends more on the subject than on the type of research. The same applies to the methodology of science. The methodology is one, but its application is adapted to different subjects of research. There is, for example, a general theory of the modelling method, but it is specified according to the type and characteristics of the research object. In relation to that subject, the models that best suit it is chosen. So, for example, models are used in the wind tunnel to investigate the flight characteristics of airplanes, x-rays are used for lung disease, and the like. The situation is similar with all other known and recognized scientific methods, but also with methodological rules and foundations as a whole. All that, including the choice of hypotheses, primarily depends on the type and characteristics of the subject, but they are also closely related to all other elements of the scientific imagination.

Because of all this, hypotheses still represent a very significant subject of complex research from a historical, epistemological, logical, methodological and philosophical point of view, which exceeds the ambitions of this paper. In this paper, the focus will be only on the place and role of hypotheses in fundamental and research in general, their place and role in the structure of scientific theory and connections with other elements of scientific ideas.

2. DIFFERENCES IN THE VIEWS OF METHODOLOGISTS ON THE PLACE AND ROLE OF HYPOTHESES IN FUNDAMENTAL RESEARCH

Hypotheses have a very important place and role in fundamental research, but they themselves are a very common problem and the subject of those researches. The reason is that there are still serious problems and inconsistent views regarding hypotheses in general, from conception and creation, to their role in a research project, to execution and verification.

(1) Methodologists do not have a unified position even in relation to the question of the emergence of hypotheses and problems. The poor believe that the problem is older - that it appears before the hypothesis. Others believe that the situation is reversed - that the hypothesis is older than the problem, and there is also a compromise solution that both the problem and the hypothesis arise practically at the same time.

The position that the hypothesis is older than the problem is advocated by the English philosopher Francis Bacon and long empiricists. Therefore, tentatively called Bacon's point of view, scientific research begins with the observation of facts from which scientific theories are gradually derived. This point of view is one-sided and unsustainable. First, Kant opposed him with the position that: „pure random observations, made without any preconceived plan, cannot be connected in a law - to which our mind aspires“,¹ and later other methodologists and philosophers. The basic problem is that Bacon's imagined point of view could not start from a starting point. It would be an endless process, without a goal and basic direction. Successful observation can only be realized when there is a certain assumption about the solution of the problem, that is, a certain orientation that indicates the direction and purpose of the observation.

Another point of view, advocated by many prominent methodologists (Perss, Popper, Nagel, etc.), is based on the fact that science begins with hypotheses or expectations. At the same time, by the term expectations, they mean the pre-scientific level, that is, the first beginnings of scientific knowledge, on which, in fact, the fact that science begins with hypotheses is based.

This point of view is represented by one of our most famous methodologists in that field - Staniša Novaković. To argue this point of view, he uses the following example: „If we sit and work in a room where we hear the ticking of a clock, which we do not notice, we can 'hear' if that clock suddenly stops and that only makes us aware of the fact that we are - we were yelling for the clock to continue ticking despite the fact that we were not aware that we were actually hearing it.“² Then, further, states that there are thousands of such unconscious „expectations“ and that a person forms them under the influence of the environment

1 Kant, I: (1958) *Critique of the pure mind*, Preface to the second edition, „Kulture“, Belgrade, p. 66-67.

2 Staniša Novaković, (1984) *Hypotheses and knowledge*, Nolit, Belgrade, p. 23.

in early childhood. He calls these expectations in everyday life and in the beginning of scientific research hypotheses or theories. According to his opinion, the primary hypothesis is that „every process of knowledge begins with the fact that we are faced with some problem arising from unfulfilled practical expectations, or because some already formed, tacitly assumed or explicitly formulated hypothesis or theory has run into difficulties for us.”³ According to him, then, knowing begins with noticing a problem or difficulty in relation to a previous expectation or hypothesis. A further logical procedure that can be expected is to know that problem to the extent that it is sufficient to set up a hypothesis about its solution.

Karl Popper advocates a similar point of view, but with a more cautious approach.⁴ Trying to realize the famous dialectical trinity (thesis, antithesis, synthesis), interpreting it as a method of trying to eliminate error, he proposes that the entire scientific discussion begins with the problem (**P1**). For that problem, a kind of tentative solution is then offered - a tentative theory (**PT**), and that theory is later criticized through an attempt to eliminate error (**EG**). That process, further, renews itself according to the law of dialectics, that is, that theory and its critical revision give birth to new problems (**P2**).

He expressed this entire process in the form:

$$P_1 \rightarrow PT \rightarrow EG \rightarrow P_2$$

What is very important is the fact that Popper starts from the problem (**P1**), but he was very careful, that is, restless (as he himself points out). Starting from the fact that every problem arises in some theoretical context (that it is immersed in theory), he pointed out that the next form can be started anywhere (with **PT**, **EG**, etc.).

Further analysis of the creation of hypotheses leads the researcher to the initial position, i.e. to solving the eternal dilemma: „What is older, the chicken or the egg“, i.e.: „What is older, hypothesis (**H**) or observation (**O**)“.

The aforementioned dilemma about the emergence of hypotheses obviously cannot be resolved in military or any other sciences. In traffic, for example, it can happen that the car breaks down and stops. So, a problem arose. That problem, however, did not arise suddenly, without prior expectations of the driver that it might actually appear. The appearance of a car breakdown can completely surprise only those drivers who have not even thought about the problem or followed the behaviour of the car. Unlike them, drivers who thought about the possibility of this problem, they made assumptions about its possible solution: they were supplied with spare parts and other equipment in time, they collected information about the roadside assistance service and the like.

In practice, therefore, situations most often occur when facts are available on the basis of which problems can be predicted and hypotheses

3 Staniša Novaković, (1984) *Hypotheses and knowledge*, Nolit, Belgrade, p. 22-23.

4 Karl Popper, (1991) *The Endless Quest*, Nolit, Belgrade, pp. 170-172.

can be set (derived, defined). From this, further, follows the attitude that hypotheses are not derived from anything, i.e., without prior knowledge of the problem. They are always set on the basis of a certain number of facts about the problem - sufficient for setting hypotheses, but not yet sufficient for a complete understanding of the solution to the problem, that is, the verification of those hypotheses. Therefore, it can be concluded that there is no strict boundary between the emergence of problems and hypotheses, nor a precise answer to the question which is older than them. The only thing that is certain is that they are in a direct relationship with each other and that this relationship is interwoven and imprecisely determined in time, which has been observed by numerous authors in the field of the theory of scientific knowledge. So, for example, Popper points out that for him it was a very unexpectedly fruitful and difficult answer to the question: „what comes first, the problem or the theory.“⁵ He well observes that „practical problems arise because something went wrong, because of some unexpected event.“ He also observes that there was a previous adaptation to that problem, that is, that there was some preconscious form of theory development, which is why these practical problems are, in essence, imbued with theories. That's why there is an interesting consequence: „the first theories - that is, the first tentative solutions to problems - and the first problems had to somehow arise together.“⁶

It is obvious, therefore, that the problem of creating scientific hypotheses has not been sufficiently researched and is still very current. Based on the current state of affairs, we still cannot see a solution that would introduce radical changes to the existing system of scientific knowledge. However, „transitional“ solutions can be expected, which will „bridge“ the mentioned gaps and enable the education of staff, the development of research practice and the methodology of science in general.

Conventional solutions about the creation of hypotheses and their place in the research process are still represented in the methodology of science today. The essence is that in the process of looking at the problem situation, one starts from the goal that one wants to achieve with the requested solution, that is, a tentative theory. In relation to that goal, the initial data is restructured, and this restructuring, later, can grow into a source of a specific solution.

Now, in methodological theory and research practice, the conventionally accepted position is that the entire research procedure begins with a scientific problem that represents the logical-epistemological hub of an imagined (first of all, research) process. After the formulation of the problem, the subject and objectives of the research are elaborated, and based on them, a system of hypotheses is established. Hypotheses (in more precise words, indicators) directly condition the way of research, that is, the choice of: methods, techniques and instruments, data sources and scope of research.

5 Karl Popper, (1991) *Search without end*, Nolit, Belgrade, p. 171.

6 Ibid., p. 171

(2) There are certain differences in the understanding of the very concept of hypothesis. The following definitions are characteristic: (1) „A hypothesis represents what we predict.“ (2) „A hypothesis is a question posed in such a way that a certain answer can be given to it in a certain way.“ (3) „A hypothesis is an attitude that can be subject to a test to determine its validity.“ (4) „A hypothesis is a thought-that assumption about the subjects under investigation.“ (5) „A hypothesis is a statement of a certain object-target meaning and assumed cognitive value that has yet to be verified.“ (6) „Hypothesis is a distribution statement about the set of units S in the space of variables X1, X2,...Xn.“ (7) „A hypothesis is a statement about the specification P (X1, X2,...Xn).“ (8) „A hypothesis is a relationship between variables. (9) Hypotheses represent thought-theoretical additions to certain gaps in the knowledge of a certain phenomenon or the entire field of phenomena whose certain moments, parts or aspects we already know.“⁷ (10) „A hypothesis is a position or a complex of positions of undetermined cognitive value that are attempted to give an explanation of certain empirical or theoretical facts, or assumed objects, phenomena, processes or relationships.“⁸ (11) hypothesis is „a claim that can be put to the test in order to establish its validity.“ (12) „In practice, a theory is an elaborate hypothesis that deals with more types of facts than a simple hypothesis does... The difference... is not clearly defined.“ (13) „A hypothesis is a necessary link between theory and research that leads to the discovery of new knowledge.“⁹ (14) „Hypotheses are grounded assumptions about the subject of research as a whole, its factors, properties, relationships and connections, situation, dimensions, essence, content, shape and form.“ (15) Hypotheses are „theoretically based thought, objective assumptions that have yet to be proven by research results.“ (16) „A hypothesis should be a clear, meaningful, logically and experientially admissible, theoretically well-explained and experientially verifiable answer to the question that expresses the problem.“ (17) „A hypothesis is a meaningful, informative, verifiable factual statement that talks about an assumed relationship between two or more variables.“¹⁰ (18) „Hypotheses are theoretical formulations that claim relationships between entities in the area of reality to which the theory applies.“¹¹ (19) „A hypothesis is a proposition, condition or principle, which is assumed, perhaps without conviction of its correctness, in order to draw its logical consequences and, using that method, check its agreement with facts that are known or that (only subsequently)

7 Definitions from (1) to (9) are taken from: Šešić, B: (1978) *Basics of methodology of social sciences*, second edition, Science book, Belgrade, p. 208.

8 Zaječaranović, G: (1977) *Basics of the methodology of science*, Science book, Belgrade, p. 187-190.

9 Definitions (11), (12) and (13) are taken from: Gud, V.-Het, P: (1966) *Methods of social research*, Vuk Karadžić, Belgrade, p. 56-57.

10 Definitions (16) to (17) are taken from: Ristić, Ž., (1995) *On research, method and knowledge*, Institute for Pedagogical Research, Belgrade, p. 310.

11 Hypotheses are meant as integral elements of a theory. (Ristić, Ž, *On research, method and knowledge*, same, p. 150)

can be determined.¹² (20) „A hypothesis is a tentative statement about the relationship between two or more variables. It is a specific, testable prediction about what you expect to happen in a study.“¹³

Analyses of the above definitions show that all of them, from a certain point of view, cover the concept of hypothesis, but not completely.¹⁴ For this occasion, it is important to point out that hypotheses could be defined in a broader and narrower sense.

The term hypothesis, in the broadest sense, means any thought creation, that is, a statement that points to knowledge about a subject or process or to potential solutions to problems in general that have yet to be verified. By hypothesis, in a broader sense, we mean: a theory that has not been fully proven, elements of the structure of a scientific theory, positions, assumptions, assertions, generalizations and all other statements that are assumed to be true, but that truth should be verified.

By hypothesis, in the narrower sense, is meant any meaningful, informative, a generalized statement based on a certain number of facts about the subject of research or its parts that should be verified by scientific research (scientific facts, value judgments or logical arguments). The term hypothesis, in a narrower sense, is therefore understood to mean statements in the scientific idea of a research project that direct the research towards the solution of the problem, establish a connection between the abstractly given subject and the goal of the research, indicate contradictions and possible elimination of gaps in the scientific knowledge, as well as the development of new methods, techniques and instruments. Those hypotheses (hypotheses in the narrower sense) are at the same time the subject of analysis in this paper.¹⁵

(3) Methodologists do not fully agree on what is defined in general. Some believe that the original (object, phenomenon, process) should be defined. Others prefer to define only the concept of that original (object, process phenomenon), and the third - to define a term or syntagma that names that original (object, process phenomenon). In practice, however, there is a dominant understanding that a term is defined, but that definition refers to both the original and the expression that names that original.

(4) There are differences in attitudes and regarding the understanding of the place and role of hypothesis in the structure of scientific theory. It is the kind

12 Websters New International Dictionary, of the English Language, Second Edition, 1956. (Cited in: Ilić, M., *Scientific research*, General methodology, University of Belgrade, Faculty of Philology, Belgrade, 1994, p. 80).

13 <https://www.verywellmind.com/what-is-a-hypothesis-2795239> (20 September 2022)

14 A complex analysis of the above definitions can be seen in: Momčilo Sakan, (2005) *Hypotheses in science*, Prometej, Novi Sad, p. 23-48.

15 There are also metaphors related to defining hypotheses, such as: (1) „Hypotheses are the heart of scientific research“ (Đuro Šušnjić); (2) „Hypotheses are networks, only the one who throws the catch“ (Novalis); (3) „Hypotheses are scaffolding that is erected before the building and demolished when the building is completed.“ They are necessary for the worker; just don't think of scaffolding as a building“ (Goethe); and others.

of theory in general that has an objective, scientific character, i.e., that explains phenomena, objects and processes and, as such, enables a deeper understanding of reality. At the same time, it is a means by which, on the basis of verified scientific principles, laws or hypotheses, phenomena and processes, real or imaginary objects in a certain scientific field are described and explained. It arises as the origin of complex thought and practical activity of people and has a double role; it represents the process of learning and at the same time the result of that process. It can also exist in two forms, as a theory of a certain science and as a concrete scientific theory. The theories of all sciences are dialectically connected, through general regularities and laws and make up the general theory of science. Scientific theory is, therefore, more systematic, more universal and more permanent. It is linked to practice in multiple ways and contains deeper scientific knowledge.

A scientific theory is also more complex than a general one because it has all the elements of the structure built. These are: (1) subject of scientific theory, (2) basic concepts (vocabulary), (3) basic attitudes, i.e. principles and postulates, (4) hypotheses, (5) scientific laws and (6) theorems.¹⁶

From the above structure, it can be seen that hypotheses are one of the elements of scientific theory and that it has certain differences, but also similarities. Hypotheses are narrower than scientific theory. They are an integral part of the structure of scientific theory and arise from it, but there are also those hypotheses that do not relate to theory but to practice. The formulated hypothesis is verified on the basis of scientific facts and, in the form of attitudes, of laws or theorems, returns to the composition of the theory. If the hypothesis is of the highest level of generality, it can, after verification, represent the theory as a whole. The verified hypothesis is therefore returned to the theory in a modified or original form. In the modified form, if it has been confirmed and translated into other elements of the structure of scientific theory, and in the original, if it has not been scientifically verified, it still retains its original meaning.

The basic similarity between theory and hypothesis is that it is very difficult to identify criteria on the basis of which one can reliably determine when one hypothesis passes into other elements of the structure of a scientific theory (or into a theory as a whole) and vice versa. When a certain gap, i.e. a problem, is noticed in the theory, a hypothesis is put forward that directs the research towards the solution of that problem. On the basis of the collected data, the verification of the hypothesis is approached. The confirmed hypothesis is translated into the elements of the theory, but the question of the validity of the verification is raised. It may happen that the facts, on the basis of which the hypothesis was verified, are not enough to convince other people (primarily those who did not participate in the process of research and verification of the hypothesis). Thus, it can happen that one and the same statement represents a hypothesis for one group of people, and for another - some of the elements of the structure of a scientific theory or the theory as a whole.

16 Sestic, B. (1978) *Fundamentals of social science methodology*, second edition, Scientific book, Belgrade, p. 292.

There are also a number of philosophers who identify theories and hypotheses. Thus, for example, Karl Popper believes that theories, on the whole, are hypothetical and that, in a logical sense, they do not differ from hypotheses. In this sense, he points out: „First, although in science we do everything we can to find the truth, we are aware of the fact that we can never be sure that we have found it. We have learned in the past, through many disappointments, that we must not expect finality. We have learned that we must no longer be disappointed if our scientific theories are disproved because, in most cases, we can determine with great confidence which of any two theories is better. We can, therefore, know that we are making progress; it is the knowledge that for most of us makes up for the loss of the illusion of finality and definiteness. In other words, we know that our theories must always remain hypotheses (underlined by MS), but that, in many important cases, we can find out whether or not the new hypotheses are better than the old ones.“¹⁷ In this regard, he also points out: „The key point in all this, the hypothetical character of all scientific theories, was in my opinion a completely logical consequence of the Einsteinian revolution, which showed that even the most successfully verified theories, such as Newton's, should not be viewed as anything more than a hypothesis (underlined by MS), an approximation of the truth“.¹⁸ Therefore, he believes that theories are in constant development, that in science (apart from pure logic and mathematics)¹⁹ there are no solid proofs that establish the truth of a theory once and for all, and that scientific theories are, therefore, probable, from - identical to the hypotheses.

A similar opinion is represented by Staniša Novaković, who wrote the book: *Hypotheses and knowledge*, and the text contains almost no mention of hypotheses. Instead of hypotheses, he uses the term theory. So, for example, he points out: „I add the term hypothesis or theory because - regardless of the scientifically hypothetical character of our scientific knowledge - we don't have to talk only about hypotheses. It is quite appropriate to use the term theory, with the fact that this would mean the hypothesis that we checked and indefinitely accepted as the true solution to a certain problem; that, of course, does not mean that some of our new knowledge cannot open up the possibility of re-examining that scientific knowledge that we have called theory...“²⁰

(5) There are different views regarding the understanding of the role of hypotheses in the research project (research plan). Some believe that hypotheses do not have a significant place and role in the project. Namely, according to this understanding, it is important to elaborate the subject of research and define the basic terms that are usually deduced from the title. The definition and elaboration

17 Karl Popper, (1993) *Open society and its enemies*, Volume II, BIGZ, Belgrade, p. 22.

18 Karl Popper, (1991) *The Endless Search*, Nolit, Belgrade, p. 102.

19 Pure mathematics and logic, according to Popper, allow evidence, but cannot provide „information about the world, but only develop the means to describe it.“ (Karl Popper, *The Open Society and its Enemies*, *ibid.*, Volume II, p. 23.).

20 Staniša Novaković, (1984) *Hypotheses and knowledge*, Nolit, Belgrade, p. 127.

of general, special and individual terms lead to the fourth level, the level of indicators, on the basis of which the method of research can be determined, that is, the methods, techniques and instruments for research can be chosen. According to this understanding, the research can therefore be realized without deriving a system of hypotheses and additional involvement of the researcher in their formulation and harmonization with the operational determination of the research subject. The second understanding contradicts the first. Its advocates start from the fact that hypotheses are the backbone of the research process and that other elements of the scientific idea are not significant. According to this opinion, it is important to correctly develop only the system of hypotheses and indicators, and this is a sufficient condition for the realization of the research. There are also those who rightly claim that all elements of a scientific idea are significant and that it is incomplete without a subject or hypothesis. The subject is the central and most important element of a scientific idea, the complex elaboration of which should precisely answer the question: „What is being researched?“ Hypotheses, however, form a link between that, abstractly given, subject and the real practice of research.²¹ In addition, they are closely connected with other elements of scientific thought.

(6) Differences are also evident in connection with the method of deriving hypotheses. Some believe that the hypotheses in the project for all problems should be defined the way it is done in empirical research - explicative (cause-effect) level. It implies a situation where the variables are clearly separated with clear connections and a strict relationship: independent variable - assertion - dependent variable. If this cannot be realized for certain problems, then, according to that opinion, the problems should be changed, not the hypotheses. In contrast to them, there is another group that, with reason, believes that methodology must not be an obstacle to solving any problem and that all problems (regardless of type and origin) can and should be designed. They are opponents of templated hypotheses in the project. Also, they believe that there are hypotheses even without clearly identifiable variables, then with a larger number of positive and negative statements, with a certain number of hidden variables and the like. Generally speaking, according to this understanding, a hypothesis can be defined with a larger number of sentences, and not just with one, and in the way it has been practiced in research projects so far.

(7) Indicators are also one of the elements of individual hypotheses about which the opinions of individual researchers differ significantly. Some consider that only simple quantitative indicators are valid. Indicators related to qualitative properties and which are not clearly recognizable by the senses, in their

21 The basic functions of hypotheses are: (1) directing research towards problem solving; (2) establishing connections between abstractly (theoretically) given subjects and research goals, on the one hand, and experiential reality, on the other; (3) assisting in scientific explanation, prediction, and discovery; (4) elimination of contradictions and gaps in scientific knowledge; (5) developing new methods, techniques and instruments. (Momčilo Sakan, (2005) *Hypotheses in science*, Prometheus, Novi Sad, pp. 78-82).

opinion, cannot be accepted as true manifestations of the essence and used in the research process. Another group, especially researchers in the field of psychological and andragogic sciences, goes much further and believes that only those indicators that can be measured and used as indicators in the process of applying statistical methods, including multivariate analysis methods, are significant for research. The third are much more cautious and believe that the indicators depend on the type of problem and the subject of research. They do not ignore the importance of measurement in science, but they believe that there are also phenomena where precise measurements are not possible. That is why, in their opinion, qualitative indicators, derived facts, and value judgments of experts in a certain field should be used in the research process.

(8) There are also differences regarding the verification of hypotheses. The problem is not in the very understanding of the concept of verification, which is precisely defined in the methodological literature. Under that term is meant the determination of the truth of the position of the hypothesis, and this is not disputed. It is debatable, however, that the majority of methodologists believe that a complete determination of the truth (one hundred percent verification) of the hypothesis is not possible. They believe that no theory can be exposed to all possible relevant tests and checks. Therefore, they do not talk about whether the theory was verified, but above all they ask about its probability in the light of the currently existing records. That is why they advocate for more flexible terms of verification, such as: *verification and substantiation* of the hypothesis. The above-mentioned positions have a logical basis that is particularly related to the verification of general hypotheses and their translation into specific elements of the structure of scientific theory or the theory as a whole. A general hypothesis is, in principle, always theoretical, and its connection with empirical facts is realized through special and individual hypotheses. Individual hypotheses, especially hypotheses of an empirical character, are directly related to empirical facts. Therefore, there is a possibility of determining their veracity by directly comparing the collected data with the position of the hypothesis and indicators. The degree of truth directly depends on the closeness of the hypothesis' position with practice and the relevance of the collected data. Therefore, the process of hypothesis verification cannot be excluded from the research procedure, regardless of how it will be called in the specific research. And, the basic criterion of valid verification is, without a doubt, real practice.

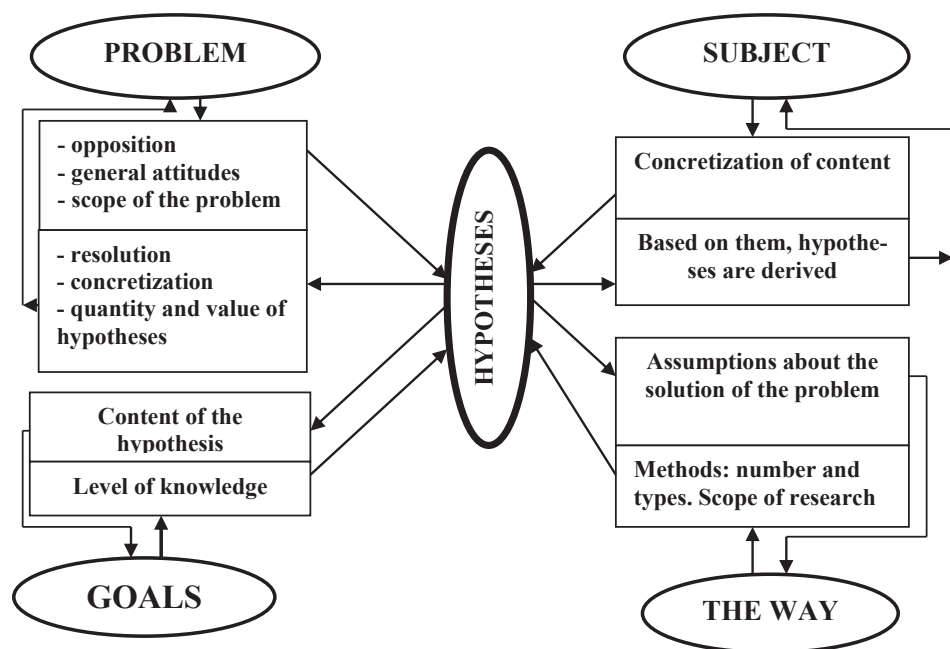
3. PLACE AND THE ROLE OF HYPOTHESES IN THE RESEARCH PROJECT

Hypotheses are needed in all areas of scientific activity. They are necessary both in professional work and in the everyday life of individuals or groups of people who are engaged in some common tasks. Their greatest application, however, is in the research process (more specifically, in the research project),

because without valid formulation of hypotheses, it is not possible to direct the research towards the solution of the problem.

Hypotheses are in direct and indirect connections with other elements of the scientific idea (problem, object, goals, method, and partly also with the justification of research).

Hypotheses are, for the most part, indirectly related *to the problem*. That connection is obvious with all elements of the problem, especially with the essence and hypothetical positions. From the formulation of the problem as a whole, and especially from the essence of the problem, the scope and complexity of the problem can be seen, on which the scope of the research subject and the depth of scientific knowledge depend, and on them: the number, type and cognitive value of hypotheses. In essence, the problem is broken down into factors that are problematized by noticing the existence of connections between them and hinting at the direction and intensity of those connections and relationships. In essence, therefore, contrasts between factors are observed, and hypotheses hint at the possibility of overcoming and solving these contrasts. Hypothetical positions clearly define statements (attitudes and judgments) about the solution of the problem, which (through the operational determination of the research subject) are concretized and systematized by hypotheses. After the partial hypothetical statements, a basic question or a summary hypothetical statement is derived. The basic question implies a preliminary determination (title) of the subject of research, and the underlying hypothetical position – a general (founding) hypothesis



Scheme: Connections of hypotheses with other elements of the scientific idea

There are direct and indirect connections between the hypotheses and the subject of research. In the preliminary determination, based on the principles of precision, reality and limitations, the title of the research subject is clearly and unambiguously defined. According to that title, a general (or foundational) hypothesis is formulated. In the first part of the theoretical determination, knowledge about the subject of the research is given, which is later elaborated in the second part (definition of basic terms). Namely, in that second part, a general theoretical model of the research subject is created, on the basis of which (through the operational determination of the research subject) a system of hypotheses is created. If the concepts are properly defined and elaborated up to the third level (for a system of hypotheses with two levels of generality), i.e., the fourth level (for a system of hypotheses with three levels of generality), it is possible to arrive at indicators that are directly transferred and linked to individual (elaborating) hypotheses. On the basis of the theoretical model (definition of terms) the operational determination of the research subject is formulated (according to the defined terms) by which the system of hypotheses is directly derived.

Hypotheses are operational determining the subject of research (structure of part) in the immediate relationship. Symmetrically with the course of the object is performed by a hypothesis system, so it is a general (establishing) hypothesis at the level, special - at the level of segments, and individual (elaborating) at the level of elementary content.

Parts of the content of operational determination of the research objects are, in principle, variable in hypotheses. Those parts belonging to the famous and scientifically checked knowledge about the research object, refer to an independent variable using which is usually described, explains or envisions dependent variable. Unlike independent, dependent variable from-carried to segment or elementary content in an operational definition that belongs to unknown or unverified knowledge about the subject of the research. This is, in fact, that segment in the opening of research objects investigated. Therefore, the variable dependent, in principle, variable (conditioned, caused) is tailored to independent variables.

With the *scientific objectives* of the *hypothesis* are in the immediate relationship. Scientific goals are defined by the level of scientific knowledge to be reached by research. These are: description, classification, explanation and prediction. There is also a scientific discovery, but this level of scientific goals is not a project. The contents of the hypothesis are directly adapted to these levels. The scientific objectives are de-finished the lower limit of scientific knowledge, and the hypotheses can be given a statement and higher levels. In accordance with scientific goals and hypotheses, I can: descriptive, classifying, explicitly and prognostic content.

There are direct and indirect connections between *hypotheses* and *research methods*. In relation to the type, content and number of hypotheses and indicators, methods, techniques and instruments, data sources and scope of research

are selected. The hypothesis connection with the method of research is, mostly silent-made through indicators. If, for example, indicators relate to the likelihood of guessing, then mathematical models and the experiment method (shooting from the said type of weapons and simulating the process on the electronic computer) are imposed. If, however, the indicators of qualitative character and refer to morality or other area where valuable courts are required, then the test method and the like is required. Indicators, therefore, non-indirectly imply scientific methods that will be used in the research. The verification of the hypothesis is realized in reverse direction. First, the facts are collected with indicators, based on which individual (elaborate) hypotheses are verified; Then, over the individual (elaborating) verify special, and through them - general (based) hypotheses.

There is an indirect connection between the *hypothesis* and *justification of the research*. In relation to the importance of the problem and knowledge of it, as well as knowledge of the case, a hypothesis system is performed through operational definition, which directly indicates the possibility of solutions to the problem. In relation to this possibility, the scientific and social justification of this research, i.e. solutions to the problem are presented.

4. CONCLUSION

Hypotheses are a complex and very important element in the methodology of science in general. In this paper, we discussed only the different views of scientists regarding their: creation, definition, connection with scientific theory, role in research, method of execution, indicators and verification.

There are different interpretations of scientists about the creation of hypotheses in the methodological literature - from those who advocate the position that facts are older than hypotheses and that research begins by observing facts, through those who consider it pointless to research and prove „which is older - the chicken or the egg“, to those who give preference to hypotheses, that is, expectations. The problem of generating hypotheses, therefore, remains relevant.

Hypotheses, without a doubt, can be defined in a narrower and wider sense. In the narrower sense, a hypothesis is understood as any meaningful, an informative, generalized statement based on a certain number of facts about the subject of research or its parts that should be verified by scientific research. The narrower meaning of the term hypothesis refers to those statements in the scientific idea of the research project that: direct the research towards the solution of the problem; establishes a connection between the abstractly given subject and the goal of the research; indicates contradictions and possible elimination of gaps in scientific knowledge; indicates the development of new methods, techniques and instruments. The term hypothesis, in a broader sense, means any thought creation, that is, a statement that indicates knowledge about

a subject or process or potential solutions to a problem in general that should be verified by research (or in another way).

A number of methodologists, for justified reasons, in parallel with the use of the term hypothesis, he most often uses the term theory, that is, when he talks about hypotheses, he usually means theory by that, and vice versa. The justification of that attitude stems from the fact that hypotheses arise from a scientific theory and that, after verification, they return to other elements of the structure of that theory.

Indicators, as visible manifestations of the essence of the variable (phenomenon under investigation), are very important in research and the choice of methods, techniques and instruments directly depends on them. In research, simple (preferably quantitative) indicators are preferred, but complex ones are also used - especially in social sciences.

The problems of hypothesis verification, regardless of the large number of written materials, occupy a central place in the field of hypothesis theory. The problems are not only related to the verification process,

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Момчило Ј. САКАН

НАУЧНА УЛОГА ХИПОТЕЗЕ У ФУНДАМЕНТАЛНИМ ИСТРАЖИВАЊИМА

Резиме

У раду су прво проблематизовани хипотезе и фундаментална истраживања као два основна чиниоца проблема о којима је реч. Затим је указано на различите ставове методолога у вези са схватањем хипотеза у истраживању уопште. На крају (у примењеном делу) је објашњена веза хипотеза са осталим елементима научне замисли у пројекту (плану) истраживања.

У уводном делу је указано на значај фундаменталних истраживања за развој науке зато што обезбеђују методолошко-логичку и сазнајну (епистемолошку) основу за друга (примењена и развојна) истраживања. Указано је, такође, да фундаментална истраживања битније не утичу на избор и примену хипотеза. Постоје извесне микро разлике које нису толико битне за истраживање.

О хипотезама су постојала и данас постоје различита мишљења методолога и других научника. У раду су приказане само оне разлике које се доносе на: поимање и настајање хипотеза, њихово место у истраживању, везу са научном теоријом, начин извођења и верификовања.

На крају је објашњена веза хипотеза са осталим елементима научне замисли – проблемом, предметом, циљевима, начином и оправданости истраживања.

Кључне речи: фундаментална истраживања, хипотезе, научна теорија, истраживачки поступак, научна замисао.

*Ivan B. PETROVIĆ**

Defense University, Military Academy, Belgrade

*Miodrag L. GORDIĆ***

Union Nikola Tesla University, Faculty of Business Studies and Law, Belgrade

EVALUATION OF CRITERIA FOR SELECTION OF WEAPONS SYSTEM USING TRIANGULAR INTERVAL TYPE-2 FUZZY SETS IN PROCESS OF MULTI-CRITERIA DECISION MAKING

Abstract: The paper presents the possibility of using triangular Interval type-2 fuzzy sets in process of the basic criteria's evaluation for the selection of a weapons system. This type of fuzzy sets is used for solving problems in organizational sciences and organizational systems, which present symbiotic of human resource and technical and technological solutions of modern industry. Thus, in the paper is shown a special kind of problems which belongs and social and technical-technological science, and for solving this problem, special kinds of soft computing methods were used. In the first chapter, based on the analysis of the literature, the selection of the basic criteria for the selection of the weapons system was carried out. The basics of triangular IT2FS and the calculation of basic arithmetic operations on IT2FS are carried out in the second chapter. In the third chapter, the criteria were prioritized using the IT2FS-DEMATEL method. After the prioritization of the criteria, a model for the selection of the combat system was formed. For the purpose of the research in this case study, five experts was tested by questionnaire with linguistic variables, adapted to the application of the DEMATEL method. Finally, the paper shows ability of applying a various specter of methods for solving interdisciplinary problems (including problems in social science), in methodological sense.

Key words: Weapons System, DEMATEL, Triangular IT2FS, Multi-Criteria Decision Making.

1 INTRODUCTION

The capabilities of modern combat systems, their sophistication and simplicity of use, have a major impact on the outcomes of conventional armed conflicts. We are witnessing the use of a wide range of modern combat systems in armed

* Assistant professor, ivanpetrovic1977@gmail.com

** Full professor, gordicmiodrag@gmail.com

conflicts (combat and non-combat unmanned aerial, water and terrain types, weapons of high precision and great destructive potential, aerodynamic and ballistic air combat vehicles with sophisticated guidance systems); they are slowly undertaking a decisive role in the realization of war goals. The wide diapason of application of the most diverse weapons and equipment systems is perhaps best seen in the example of armed conflicts that are taking place today or have taken place in the recent past around the world. The best examples of this are: the armed conflict in Ukraine (the largest armed conflict in Europe since the end of the Second World War), the armed conflict on the territory of the Republic of Artsakh (the conflict on the territory of the Republic of Nagorno-Karabakh between the army of this self-proclaimed republic, Azerbaijan and Armenia), the armed conflict in Syria between the regular forces of Bashar Al-Assad, the Syrian opposition, the Islamic State, the armed forces of the Russian Federation as well as the USA, the armed conflict in Yemen and the like.. All these armed conflicts present certain common indicators that can be separated by applying the method of abstraction and which point to: increasingly rapid qualitative changes in the development of modern weapon systems of the mostly unmanned type (on the ground, in the air or on water) and their increasingly massive use during the realization of combat tasks, new organizational characteristics of units, the use of the universe for warfare, especially satellites for the purposes of precise targeting of combat weapons in real time, as well as for the purposes of reconnaissance, as well as the ever-present use of new tactical procedures as a consequence of adapting to the use of new weapons. Furthermore, these armed conflicts show certain specificities that are special characteristics of these wars. For example, in Nagorno-Karabakh, the mass use of drones (especially drones of Turkish production - Barjaktar) and suicide drones qualitatively affected the results of combat operations. Less than a year and a half later, the impact of drones and unmanned aerial vehicles has been significantly reduced in the conflict in Ukraine. As a matter of fact, the huge fire, electronic and anti-electronic power of rocket and artillery rocket means of the Russian Federation completely neutralized the possibility of using unmanned weapon systems and equipment of the Ukrainian army and its allies. On the other hand, the power of aviation and especially artillery in the implementation of aerial fire support tasks at the level used by the military forces of the Russian Army and the self-proclaimed Republic of Lugansk and Donbass has not been seen since World War II. Actually, the use of artillery and aviation in the creation of so-called boilers is so present in both qualitative and quantitative terms that it seriously exceeds anything seen in the previous more than seventy years.

All of these means (including suicide drones, unmanned aerial vehicles, aviation and artillery) are mostly of an offensive type, and are usually used by the technologically, economically, militarily, diplomatically stronger side in conflicts, which, today, are mostly asymmetric. In such conditions, the weaker side in a potential conflict tries to arm itself with combat systems (either by equipment or production), the use of which, with the maximum use of combat capabilities and

a high degree of training of combat units, could reduce the combat superiority of a potential enemy. The choice of such combat systems has its own legalities, which are based on the historical-comparative analysis of modern armed conflicts, the economic possibilities of the state („cost-benefit“ analysis), as well as the achieved level of development of its own military industry and modernization of the army.

Given the above, the following text presents one of the possible approaches to multi-criteria decision-making, defining the relative weight of criteria when choosing a combat system to arm a combat unit. The research implementation algorithm is presented in Figure 1.

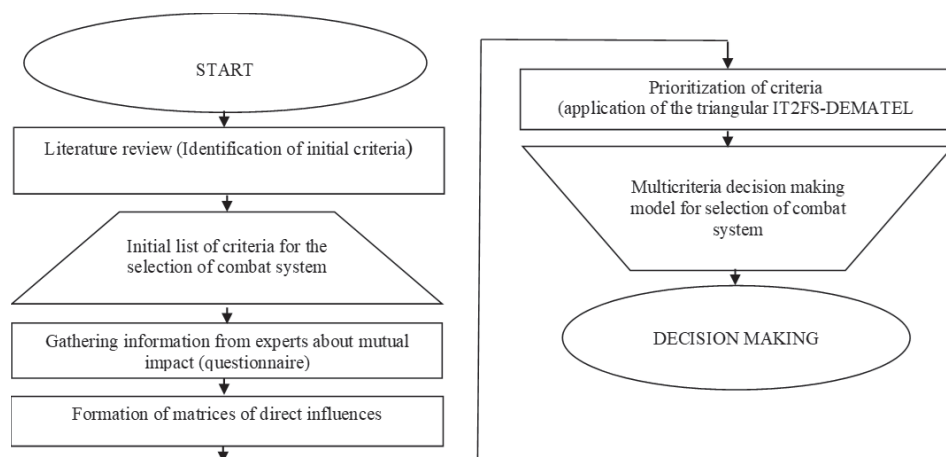


Figure 1: Research implementation algorithm

The research has been carried out by determining the basic criteria using content analysis in the first step. Due to the application of subjective methods of multi-criteria decision-making, the data necessary for the application of the DEMATEL method were collected using questionnaires filled out by five experts. The obtained results were then transformed into appropriate linguistic variables in the form of triangular ITF2S on which the procedures of the DEMATEL method were implemented in order to form a multi-criteria model.

2 DETERMINATION OF THE BASIC CRITERIA FOR THE SELECTION OF A COMBAT SYSTEM

Most of the criteria, by which a certain combat system is selected in armies around the world, are interpreted in military terminology using the terminological phrase tactical-technical requirements. In this paper, the selection of the initial criteria was made based on the literature analysis (Petrović et al. 2018; Petrović, Kankaraš 2018; Pamučar et al. 2018; Dagdeviren et al. 2009; Mavris, DeLaurentis 1995). In this case study, the determination of the basic criteria was carried out for the selection of a multi-task combat aircraft.

Based on the qualitative analysis of the content of the abovementioned references, based primarily on the concept of overall evaluation criteria, the basic criteria for the selection of a combat aircraft were determined, which can also be applied during optimization in the selection of other combat systems. The basic criteria, which were chosen for prioritization, are the following: K1 - accessibility (investment and operating costs), K2 - reliability (coefficient of combat capability, protection of forces, mean time of trouble-free operation, design defects, mean time to bring it into working order), K3 - fire ability (type and lethality of combat weapons, the ability to shoot and the probability of destroying the target from the rear and front halfsphere), K4 - time ability (reaction time, transition from one level of readiness to another, time of introduction into combat, etc.), K5 - spatial ability (maneuvering characteristics, possibility of maximum range and maximum effect, etc.).

2.1 Triangular Interval Fuzzy Sets of the Second Type

Unlike T2FS, which represent an extended type of T1FS, IT2FS are somewhat simpler to calculate, and ensure the validity of the obtained results in conditions of a high level of uncertainty of the subjective opinion of experts (Kahraman *i drugi*, 2014). This type of fuzzy sets is widely used in the research of phenomena on linguistic variables. IT2FS ensure greater representativeness of decision-making when examining a small group of experts. Two types of IT2FS are most often applied, namely: trapezoidal (Huang et al., 2014); Milošević et al, 2019; Castillo and Melin, 2014; Hsiao et al., 2014; Chen and Wang, 2013; Wu and Mendel, 2019; Abdullah and Zulkifli, 2015; Runkler et al. 2017, et al.) and triangular IT2FS (Nagarajan et al., 2019; Qin and Liu, 2014; Singh and Garg, 2018; Lathamaheswari et al., 2020, Petrovic and Petrovic, 2022, et al.).

T2FS \tilde{A} as an element of the set X , is represented by the following membership functions (Kahraman et al., 2014):

$$\tilde{A} = \{((x, u), \mu_{\tilde{A}}(x, u)) \mid \forall x \in X, \forall u \in J_x \subseteq [0, 1], 0 \leq \mu_{\tilde{A}}(x, u) \leq 1\} \quad (1)$$

Or,

$$\tilde{A} = \iint_{x \in X, u \in J_x} \mu_{\tilde{A}}(x, u) / (x, u) \quad (2)$$

Whereas:

$J_x \subseteq [0, 1]$ i \cup represents the union of all x and u .

The type of T2FS \tilde{A} for which there is $\forall \tilde{A} \Rightarrow \forall \mu_{\tilde{A}}(x, u) = 1$ represents IT2FS.

$$\tilde{A} = \{((x, u), 1) \mid \forall x \in X, \forall u \in J_x \subseteq [0, 1], \mu_{\tilde{A}}(x, u) = 1\} \quad (3)$$

In other words:

$$\tilde{A} = \iint_{x \in X, u \in J_x} 1 / (x, u), J_x \subseteq [0, 1] \quad (4)$$

The triangular ITFS \tilde{A}_i can be represented in the following form (Kahraman et al., 2014):

$$\tilde{A}_i = (A_i^U, A_i^L) = (a_{i1}^U, a_{i2}^U, a_{i3}^U; H(A_i^U)), (a_{i1}^L, a_{i2}^L, a_{i3}^L; H(A_i^L)) \quad (5)$$

Whereas:

$H(A_i^U)$ element membership value a_{i2}^U in the upper function of membership, while the $H(A_i^L)$ element membership value a_{i2}^L is in the lower function of membership, $H(A_i^U) \in [0,1], H(A_i^L) \in [0,1] \quad 1 \leq i \leq n$.

The graphic representation of the shape of the triangular IT2FS is presented in Figure 2.

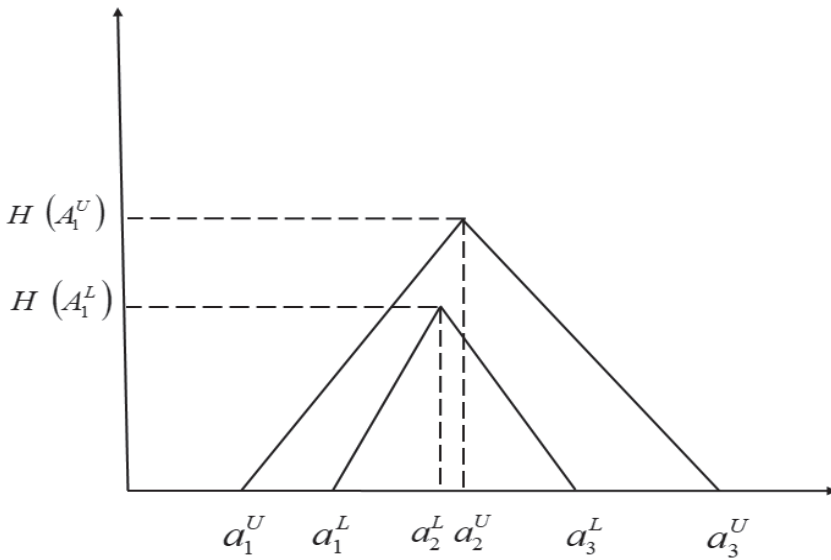


Figure 2: The form of triangular IT2FS

Triangular IT2FS are used less than trapezoidal ones. Nevertheless, unlike type 1 fuzzy numbers, they provide more representative results when researching a small sample. This is caused by the fact that these fuzzy sets take into account the value of the fuzzy set both on the abscissa and on the ordinate. Basic calculation operations, which are valid for trapezoidal IT2FS (Petrović and Petrović, 2022; Petrović and Kankaraš, 2020; Kahraman et al., 2014) can be presented analogously for triangular IT2FS.

For two trianguars IT2FS:

$$\tilde{A}_1 = (A_1^U, A_1^L) = (a_{11}^U, a_{12}^U, a_{13}^U; H(A_1^U)), (a_{11}^L, a_{12}^L, a_{13}^L; H(A_1^L))$$

$$\tilde{A}_2 = (A_2^U, A_2^L) = (a_{21}^U, a_{22}^U, a_{23}^U; H(A_2^U)), (a_{21}^L, a_{22}^L, a_{23}^L; H(A_2^L))$$

The sum of two triangles IT2FS represents:

$$\begin{aligned} \tilde{A}_1 + \tilde{A}_2 = & [a_{11}^U + a_{21}^U, a_{12}^U + a_{22}^U, a_{13}^U + a_{23}^U; \min(H(A_1^U)), \min(H(A_2^U))] \\ & [a_{11}^L + a_{21}^L, a_{12}^L + a_{22}^L, a_{13}^L + a_{23}^L; \min(H(A_1^L)), \min(H(A_2^L))] \end{aligned} \quad (6)$$

The difference of two triangular ITFS is calculated as follows:

$$\begin{aligned} \tilde{A}_1 - \tilde{A}_2 = & [a_{11}^U - a_{23}^U, a_{12}^U - a_{22}^U, a_{13}^U - a_{21}^U; \min(H(A_1^U), H(A_2^U))] \\ & [a_{11}^L - a_{23}^L, a_{12}^L - a_{22}^L, a_{13}^L - a_{21}^L; \min(H(A_1^L), H(A_2^L))] \end{aligned} \quad (7)$$

The multiplication product of two triangular ITFS represents:

$$\begin{aligned} \tilde{A}_1 \times \tilde{A}_2 = & [a_{11}^U \times a_{21}^U, a_{12}^U \times a_{22}^U, a_{13}^U \times a_{23}^U; \min(H(A_1^U), \min(H(A_2^U))] \\ & [a_{11}^L \times a_{21}^L, a_{12}^L \times a_{22}^L, a_{13}^L \times a_{23}^L; \min(H(A_1^L), \min(H(A_2^L))] \end{aligned} \quad (8)$$

The operation of dividing two triangles ITF2S is presented in the following formula:

$$\begin{aligned} \frac{\tilde{A}_1}{\tilde{A}_2} = & \left[\frac{a_{11}^U}{a_{23}^U}, \frac{a_{12}^U}{a_{22}^U}, \frac{a_{13}^U}{a_{21}^U}; \min(H(A_1^U), H(A_2^U)) \right], \\ & \left[\frac{a_{11}^L}{a_{23}^L}, \frac{a_{12}^L}{a_{22}^L}, \frac{a_{13}^L}{a_{21}^L}; \min(H(A_1^L), H(A_2^L)) \right] \end{aligned} \quad (9)$$

The operations of multiplication and division of the triangular IT2FS with a scalar are shown by the following formulas:

$$\begin{aligned} k \times \tilde{A}_i = & k \times (A_i^U, A_i^L) = (k \times a_{i1}^U, k \times a_{i2}^U, k \times a_{i3}^U; H(A_i^U)), \\ & (k \times a_{i1}^L, k \times a_{i2}^L, k \times a_{i3}^L; H(A_i^L)) \end{aligned} \quad (10)$$

$$\frac{\tilde{A}_i}{k} = \left[\frac{a_{i1}^U}{k}, \frac{a_{i2}^U}{k}, \frac{a_{i3}^U}{k}; H(A_i^U) \right], \left[\frac{a_{i1}^L}{k}, \frac{a_{i2}^L}{k}, \frac{a_{i3}^L}{k}; H(A_i^L) \right] \quad (11)$$

The reciprocal value of the triangular IT2FS is determined as follows:

$$\frac{1}{\tilde{A}_i} = \left[\frac{1}{a_{i3}^U}, \frac{1}{a_{i2}^U}, \frac{1}{a_{i1}^U}; H_1(A_i^U) \right], \left[\frac{1}{a_{i3}^L}, \frac{1}{a_{i2}^L}, \frac{1}{a_{i1}^L}; H(A_i^L) \right] \quad (12)$$

For each triangular IT2FS \tilde{A}_i , $\sqrt[m]{\tilde{A}_i}$ is determined as follows:

$$\sqrt[m]{\tilde{A}_i} = \left[\left(\sqrt[m]{a_{i1}^U}, \sqrt[m]{a_{i2}^U}, \sqrt[m]{a_{i3}^U}; H(A_i^U) \right), \left(\sqrt[m]{a_{i1}^L}, \sqrt[m]{a_{i2}^L}, \sqrt[m]{a_{i3}^L}; H(A_i^L) \right) \right] \quad (13)$$

Defuzzification of a triangular IT2FS \tilde{A}_i is performed in the following way (Kahraman et al, 2014):

$$DTroT\tilde{A}_i = \frac{1}{2} \left\{ \left[(a_{i3}^U - a_{i1}^U) + (a_{i2}^U - a_{i1}^U) \right] / 3 + a_{i1}^U + H(\tilde{A}_i^L) \times \right. \\ \left. \left[(a_{i3}^L - a_{i1}^L) + (a_{i2}^L - a_{i1}^L) \right] / 3 + a_{i1}^L \right\} \quad (14)$$

2.2 ITF2S-DEMATEL METHOD

The prioritization of the basic criteria for the selection of a fighter aircraft was carried out using the triangular IT2FS - DEMATEL method. By applying this method („Decision – Making Trial and Evaluation Laboratory”) on the basis of determining the direct and indirect mutual influences of the basic criteria, the values of the relative weights of the criteria were determined.

The procedure of the triangular IT2FS -DEMATEL method is as follows (Petrović i Petrović, 2022; Petrović i Kankaraš 2020):

By aggregating the initial values of the linguistic IT2FS, an average assessment matrix of the mutual influence of the initial requirements was obtained $\tilde{M} = [\tilde{A}_{ij}]_{n \times n}$

Whereas $\tilde{A}_{ij} = (A_{ij}^U, A_{ij}^L) = (a_{ij1}^U, a_{ij2}^U, a_{ij3}^U; H(A_{ij}^U)), (a_{ij1}^L, a_{ij2}^L, a_{ij3}^L; H(A_{ij}^L))$ and it represents a triangular IT2FS element of a non-negative matrix.

Analogously, by applying the DEMATEL formula for the “crisp” value on the triangle IT2FS we get the following $s = 1 / \max \left(\sum_{j=1}^n a_{ij3}^U, \sum_{i=1}^n a_{ij3}^U \right)$ on the basis of which the normalized matrix of direct influence is equal to:

$$\tilde{X} = s \times \tilde{M} \quad (15)$$

The next step is to calculate the total impact matrix:

$$\tilde{T} = \tilde{X}(\tilde{I} - \tilde{X})^{-1}, \tilde{T} = [\tilde{t}_{ij}]_{n \times n}, i, j = 1, 2, \dots, n \quad (16)$$

Whereas:

\tilde{I} – IT2FS unit matrix of influence, whose diagonal values of the elements are equal to:

$$\tilde{i}_{ij} = (1, 1, 1; H(A_{ij}^U)), (1, 1, 1; H(A_{ij}^L)), 1 \leq i \leq n, 1 \leq j \leq n, i = j,$$

while the other values of the elements are equal to:

$$\tilde{i}_{ij} = (0, 0, 0; H(A_{ij}^U)), (0, 0, 0; H(A_{ij}^L)), 1 \leq i \leq n, 1 \leq j \leq n, i \neq j$$

\tilde{T} – IT2FS the total impact matrix,

$$\tilde{t}_{ij} = (A_{ij}^{U'}, A_{ij}^{L'}) = (a_{ij1}^{U'}, a_{ij2}^{U'}, a_{ij3}^{U'}; H(A_{ij}^{U'})), (a_{ij1}^{L'}, a_{ij2}^{L'}, a_{ij3}^{L'}; H(A_{ij}^{L'}))$$

- IT2FS the element of the total impact matrix.

Whereas:

$$\text{Matrix}[a_{ij1}^{U'}] = \text{Matrix}[x_{ij1}^{U'}] (\text{Matrix}[i_{ij1}^{U'}] - \text{Matrix}[x_{ij1}^{U'}])^{-1}, \\ \text{Matrix}[a_{ij3}^{U'}] = \text{Matrix}[x_{ij3}^{U'}] (\text{Matrix}[i_{ij3}^{U'}] - \text{Matrix}[x_{ij3}^{U'}])^{-1} \quad (17)$$

After determining the total impact matrix, the elements of the matrix were dephased in accordance with formula 14, after which the relative weights of the criteria were determined.

3 RESEARCH AND RESULTS

The research of the importance of the initial criteria and their evaluation was carried out using the DEMATEL method. The first step in the application of the DEMATEL method is the initial pairwise comparison of the mutual influence of the criteria by experts. The influence that one criterion can have on other criteria, as well as the influence it can receive from other criteria, is as follows: no impact, small impact, medium impact, big impact and very big impact. The criterion in relation to itself has no effect. Table 1 shows the influence values expressed by linguistic variables.

Table 1: DEMATEL linguistic variables of mutual influence of criteria

Linguistic variables of impact	Triangular IT2FS
No (N)	$((0,0,0;1),(0,0,0;0.8))$
Small (L)	$((0,0.2,0.4;1),(0,0.1,0.3;0.8))$
Medium (M)	$((0.2,0.4,0.6;1),(0.1,0.3,0.5;0.8))$
Large (H)	$((0.4,0.6,0.8;1),(0.3,0.5,0.7;0.8))$
Very large (VH)	$((0.6,0.8,1;1),(0.5,0.7,0.9;0.8))$

Table 2 shows the aggregated values of the mutual influence of the criteria after receiving the experts' answers. The values were obtained using formulas 6 and 11.

These criteria are marked from 1 to 5: K1 - accessibility, K2 - reliability, K3 - fire capability, K4 - time capability, K5 - spatial capability.

Table 2: Matrix of direct impact of criteria

K	K1	K2	K3	K4	K5
K1	$((0,0,0;1), (0,0,0;0.8))$	$((0.52,0.72,0.92;1), (0.42,0.62,0.82;0.8))$	$((0.4,0.6,0.8;1), (0.3,0.5,0.7;0.8))$	$((0.52,0.72,0.92;1), (0.42,0.62,0.82;0.8))$	$((0.56,0.76,0.96;1), (0.46,0.66,0.86;0.8))$
K2	$((0.44,0.64,0.84;1), (0.34,0.54,0.74;0.8))$	$((0,0,0;1), (0,0,0;0.8))$	$((0.2,0.4,0.6;1), (0.1,0.3,0.5;0.8))$	$((0.28,0.48,0.68;1), (0.18,0.38,0.58;0.8))$	$((0.32,0.52,0.72;1), (0.22,0.42,0.62;0.8))$
K3	$((0.48,0.68,0.88;1), (0.38,0.58,0.78;0.8))$	$((0.44,0.64,0.84;1), (0.34,0.54,0.74;0.8))$	$((0,0,0;1), (0,0,0;0.8))$	$((0.36,0.56,0.76;1), (0.26,0.46,0.66;0.8))$	$((0.28,0.48,0.68;1), (0.18,0.38,0.58;0.8))$
K4	$((0.56,0.76,0.96;1), (0.46,0.66,0.86;0.8))$	$((0.04,0.24,0.44;1), (0.04,0.14,0.34;0.8))$	$((0.24,0.44,0.64;1), (0.14,0.34,0.54;0.8))$	$((0,0,0;1), (0,0,0;0.8))$	$((0.28,0.48,0.68;1), (0.18,0.38,0.58;0.8))$
K5	$((0.52,0.72,0.92;1), (0.42,0.62,0.82;0.8))$	$((0.4,0.6,0.8;1), (0.3,0.5,0.7;0.8))$	$((0.36,0.56,0.76;1), (0.26,0.46,0.66;0.8))$	$((0.16,0.36,0.56;1), (0.06,0.26,0.46;0.8))$	$((0,0,0;1), (0,0,0;0.8))$

By applying the calculation rules of triangular IT2FS shown by formulas 7, 8, 9 and 12 to formulas 15-17, a total impact matrix is obtained, presented in table 3.

Table 3: Total impact matrix

K	K1	K2	K3	K4	K5
K1	(0.11,0.34,1.41;1), (0.06,0.19;0.56;8)	(0.21,0.44,1.43;1), (0.15,0.3,0.66;0.8)	(0.17,0.4,1.34;1), (0.11,0.26,0.6;0.8)	(0.2,0.43,1.4;1), (0.14,0.29,0.61;0.8)	(0.22,0.46,1.49;1), (0.16,0.31,0.64;0.8)
K2	(0.18,0.41,1.36;1), (0.12,0.27,0.64;0.8)	(0.06,0.21,1.02;1), (0.03,0.11,0.4;0.8)	(0.1,0.3,1.1;1), (0.05,0.18,0.5;0.8)	(0.13,0.32,1.15;1), (0.07,0.2,0.51;0.8)	(0.14,0.34,1.22;1), (0.08,0.22,0.54;0.8)
K3	(0.21,0.45,1.47;1), (0.14,0.3,0.7;0.8)	(0.18,0.39,1.3;1), (0.12,0.26,0.62;0.8)	(0.06,0.22,1.04;1), (0.03,0.12,0.41;0.8)	(0.16,0.37,1.26;1), (0.1,0.24,0.57;0.8)	(0.14,0.36,1.31;1), (0.08,0.23,0.57;0.8)
K4	(0.21,0.42,1.39;1), (0.15,0.29,0.65;0.8)	(0.07,0.27,1.13;1), (0.04,0.15,0.48;0.8)	(0.11,0.3,1.11;1), (0.06,0.18,0.49;0.8)	(0.05,0.2,1;1), (0.03,0.1,0.36;0.8)	(0.13,0.33,1.24;1), (0.08,0.21,0.52;0.8)
K5	(0.21,0.45,1.45;1), (0.15,0.3,0.69;0.8)	(0.17,0.38,1.26;1), (0.11,0.25,0.6;0.8)	(0.15,0.35,1.19;1), (0.09,0.23,0.56;0.8)	(0.11,0.32,1.19;1), (0.05,0.19,0.2;0.8)	(0.07,0.24,1.12;1), (0.03,0.13,0.42;0.8)

By applying formula 14 we get the 'crisp' value of the total impact matrix ($DTriT_{ij}$) from which the relative weights of the criteria are obtained in a simple procedure (summation by rows D and columns R for each criterion and normalization of the total of the sums of rows and columns D+R).

Table 4: Defuzzified matrix of total impacts ($DTriT_{ij}$) with calculated criteria weights

K	K1	K2	K3	K4	K5	D	R	D+R	W_i
K1	0,425	0,509	0,458	0,493	0,524	2,410	2,435	4,844	0,234
K2	0,475	0,289	0,350	0,378	0,405	1,897	2,034	3,931	0,190
K3	0,522	0,456	0,296	0,428	0,429	2,131	1,868	3,999	0,193
K4	0,496	0,339	0,357	0,276	0,397	1,865	1,950	3,815	0,184
K5	0,517	0,441	0,406	0,374	0,319	2,057	2,073	4,131	0,199

The relative weights of the basic criteria are presented graphically in Figure 3.

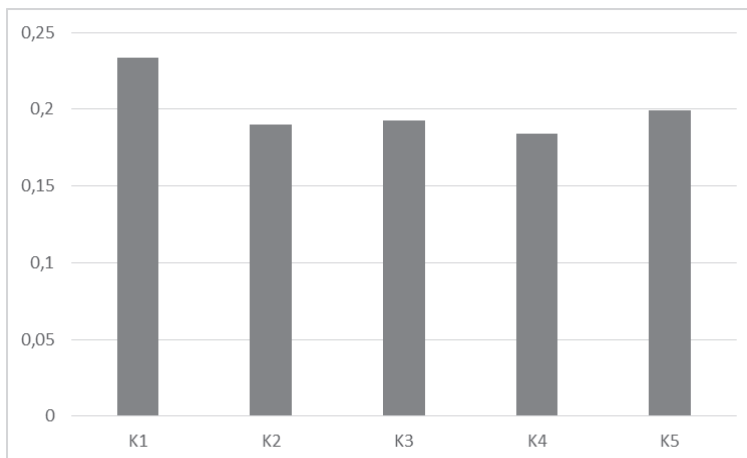


Figure 3: Relative weights of the criteria

Based on the obtained results, it is concluded that the value of the basic criteria is approximately the same, that is, that all criteria have approximately the same importance.

4. CONCLUSION

The obtained model shows the values of the relative weights of the basic criteria. In the same way we can calculate the attributes of the basic criteria. The paper presents only one approach, which can be modified either by applying another method (for example: ANP, AHP) or by applying other numbers (for example: fuzzy sets of the first type, trapezoidal IT2FS, intuitive fuzzy sets, „rough“ numbers with or without combination with phase sets and the like).

Furthermore, it should be noted that future research can be focused on testing the existing model using other multi-criteria of decision-making methods such as: TOPSIS, COPRAS, MAIRCA, VIKOR MABAC and the like. By applying these methods, a unique model could be formed, the output of which would represent the choice of the optimal alternative in accordance with the previously defined criteria. All these models and methods (which are included in the methods of solving operational problems), despite being in the domain of studying soft computing, are also successfully applied in solving problems in the social sciences, especially those of a subjectively oriented type. Fuzzy sets provide an increase in the representativeness of results that are the consequence of subjective thinking and reasoning of a small group of people (most often experts), while operational problem solving methods are most often used to solve poorly structured problems, with a special emphasis on solving such problems in social sciences.

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Иван Б. ПЕТРОВИЋ
Миодраг Л. ГОРДИЋ

ЕВАЛУАЦИЈА КРИТЕРИЈУМА ЗА ИЗБОР СИСТЕМА ОРУЖЈА
КОРИШЋЕЊЕМ ТРОУГАОНОГ ИНТЕРВАЛА ТИП-2 FUZZI СКУПОВА
У ПРОЦЕСУ ВИШЕКРИТЕРИЈСКЕ ОДЛУКЕ

Резиме

У раду је приказана могућност употребе расплинутих скупова троугластог Интервал типа-2 у процесу оцењивања основних критеријума за избор система наоружања. Ова врста расплинутих скупова се користи за решавање проблема у организационим наукама и организационим системима, који представљају симбиозу људских ресурса и техничко-технолошких решења савремене индустрије. Тако је у раду приказана посебна врста проблема која припада и друштвеној и техничко-технолошкој науци, а за решавање овог проблема коришћене су посебне врсте метода меког рачунарства. У првом поглављу, на основу анализе литературе, извршен је избор основних критеријума за избор система наоружања. Основе троугластог IT2FS-а и прорачун основних аритметичких операција на IT2FS-у изводе се у другом поглављу. У трећем поглављу критеријуми су приоритетизовани методом IT2FS-DEMATEL. Након одређивања приоритета критеријума, формиран је модел за избор борбеног система. За потребе истраживања у овој студији случаја, пет експерата је тестирано упитником са лингвистичким варијаблама, прилагођеним примени DEMATEL методе. Коначно, у раду се показује способност примене различитог спектра метода за решавање интердисциплинарних проблема (укључујући проблеме друштвених наука) у методолошком смислу.

Кључне речи: систем оружја, DEMATEL, троугласти IT2FS, вишекритеријумско одлучивање.

*Srdan V. STARČEVIĆ**

University of Defence, Military Academy, Belgrade, Serbia

*Srdan M. BLAGOJEVIĆ***

University of Defence, Military Academy, Belgrade, Serbia

FUNDAMENTAL RESEARCH IN SOCIAL SCIENCES AND PUBLIC INTEREST

Abstrakt: During the last few decades, objections have often been raised against fundamental research. This kind of research, especially in social sciences, has been the target of criticism for being irrelevant and of no practical use for solving social problems. In defence of fundamental research in social sciences, it is usually pointed out that they contribute to the increase of the corpus of scientific knowledge, the elaboration of social theories and a better understanding of social reality. The challenges for fundamental research also come from the fact that they are either perceived as an impractical form of pure science or their results are perceived as part of social engagement of intellectuals, which casts a shadow of doubt on the objectivity of their results. An additional problem is epistemological relativism in modern/postmodern approaches in social sciences. The paper examines the possibility of social sciences to contribute to the achievement of public interest through fundamental research. Also, the paper presents the limitations of fundamental research in this regard. In the paper, the methods of analysis, synthesis and generalization were used, along with the general scientific methods, with the hypothetical-deductive method being dominantly used.

Key words: fundamental research, social sciences, public interest, progress, political will.

INTRODUCTION

Most often, the research problem is selected and formulated in order to solve a specific practical problem or to conduct an appropriate activity, or to satisfy the scientific interest in the narrow sense (Ilić, 1976: 115). The possibility to classify scientific research according to the criterion of practical application

* Associate Professor, srdjan.starcevic@vs.rs

** Associate Professor, srdjan.blagojevic@mod.gov.rs

of research results is derived from the potentially ambiguous intent of the researcher which, in practice, usually boils down to the either-or choice (Sakan, 2008: 253). However, this classification caused researches to be biased towards applied research in social sciences. In contrast, fundamental research in social sciences have often been criticized as irrelevant in past four decades, as they allegedly lead to no reliable facts and produce no practical knowledge that can be used to solve contemporary social problems (Turner, Kiesler, 1981: 177). Such criticism was especially frequent in the first decades of the XXI century (Schauz, 2014: 274).

The most frequent arguments in favour of fundamental research in social sciences are their undoubtable contribution to the increase of scientific knowledge, establishment, development and criticism of social theories and better understanding of social reality.

Criticism took two directions: the first, towards theory and theoretical knowledge as opposed to practice; the second, towards understanding of social phenomena.

Fundamental research in general, and particularly in social sciences, have been criticized as a type of scientific research which stemmed from the discourse of pure science, as an impractical form of science, almost science for its own sake, which results in the increase of insufficiently applicable theoretical knowledge. Tendency to downgrade the theoretical level from grand theories to mid-scale theories was only able to lessen, not to overcome this sort of criticism. In modern development conditions, with utilitarian norms and consumer values, reminding of ancient ideals and their apotheosis of theoretical knowledge gains much less traction than deserved (Šušnjić, 2021: 8). Comparison with epistemological reaches and technical knowledge produced by natural and technical sciences also emerges in discussions on this topic (Flivbjerg, 2012:15–20). Finally, extreme empiricism and deified “scimetry” also landed powerful blows.

When discussing the possibilities of fundamental research in social sciences to contribute to better understanding social phenomena, the blade of criticism is pointed at subjectivity, value-orientation and social engagement of the scientist-intellectual. Criticism identifies the results of these research in an ideological plain (or perhaps relocates them to it); however, if we take into account views on value-dependant determination of many social sciences, we can argue that there is a twofold ideological underlying to them – both of the scientist’s perspective on the studied social problem and of the critic’s, different, perspective on the same issue.

The collapse of ontological monism, epistemological and axiological absolutism brought by the postmodern „activation of diversity” caused relativization of the significance of establishing general principles, similarities and wholeness of phenomena and a singular (exclusive) truth about the research subject (Liotard, 1995: 24; Starčević, 2022: 62-63).

Still, even in these unfavourable conditions, fundamental research, meta-research and grand theoretical endeavours in social sciences have not disappeared,

just like the need for protection and realization of common public interest has not vanished under the influence of intensified focus of contemporary man and social groups on personal and particular interest. It is justified to raise the issue of potential contribution of fundamental research in social sciences to realization of public interest. Simultaneously, limits of its contribution to the realization of this interest also ought to be identified.

1. POTENTIAL FOR CONTRIBUTION TO REALIZATION OF PUBLIC INTEREST OF FUNDAMENTAL RESEARCH IN SOCIAL SCIENCES

History of social ideas and theories has been the arena for numerous grand disputes. The topic of one such dispute was the existence and definition of public interest. Certain social theories rejected the very existence of public interest, in favour of private, particular, and class interest. Among those theories which promoted the importance of public interest there are differences in how it is perceived and defined. Different theoretical concepts are based on different standards: individualistic, ideal-communitarian, deliberative-communitarian, unitarian, and the standard of realistic needs (Bezmek, Dumbrovsky, 2020). Without going into wider discussions regarding different theoretical concepts of public interest, we shall accept the argument that public interest in contemporary societies does exist, as every society has certain aims, common to its members (Cordoba, 2010: 381-384). These aims (which can lead to generation of plural public interests, much like the heterogeneity of contemporary society) are significant for all members of society and for development of society as such (for example – education, healthcare and public health, social protection, sustainable development, state's freedom and independence, environment preservation, corruption suppression, consumer protection, etc.).

If we were to attempt to find a way to realized public interest, analysis of possibilities to actually realize it would lead to partitioning of the process into three components: 1) definition of desired aims, 2) determination of current situation and means necessary for accomplishing the defined aims, and 3) determination of methods of using means purposefully along with predictions of decisions' outcomes and corrections of the aim-realization process.

Given the fact that the good practice of solving problems rationally is present in contemporary society, a scientific approach to this matter is implied and welcomed. The importance of empirical approach is obvious and essential when determining the positive facts in all three segments of the public interest realization process. Nonetheless, while some of the sub-processes can be produced by applied research, others can't. For example, if we wished to improve results of certain knowledge tests performed by students of elementary and high schools, results of applied pedagogical research would suffice. Yet, if our goal would be to produce citizens with a certain level of political culture through

education provided by elementary and high schools, then we would necessarily have to ask questions regarding the essence and meaning of political culture, its significance for society, politics, political system and democracy, the relationship between politics and education, state's influence on education and needs of the economy and labour market, etc. Besides, it wouldn't be unexpected for voices to emerge which would dub such an intent as ideological, which would also require a scientific approach to issues of the relationship between the state and society, state and education, education and the individual, etc. In other words, in this case conduction of a multidisciplinary fundamental research, or several such research, would be necessary before any relevant suggestions regarding modification of education system could be given.

However, definition and realization of public interest depends not solely on identification of facts, but also on reflexive analysis based on the facts. It is precisely the fundamental research in social sciences that include reflexive analysis of „aims, means, values, and interests, which represents the precondition of enlightened development in every society” (Flyvbjerg, 2012: 77). When Flyvbjerg highlights the strong suits of social sciences in the phronetic approach to research problem, he sums up the starting point of phronetic research in three questions: 1) Where are we going? 2) Is this desirable? and 3) What should we do? (*Ibid.* 88). These questions clearly indicate a value-rational dimension of human reality, accessible only to social sciences. In the value-rational plain, it is the context that determines phenomena, while their evaluation is in the hands of ethics.

Fundamental research in social sciences is necessary in order to develop new social theories that represent „a collection of interconnected ideas which enable systematization of knowledge of society, explanation of society, and prediction of its future” (Ricer, 2012: 36). Social institutions enable society's existence and functioning. Once established, social institutions will contribute to reproduction of social relations. When substantial social change occurs, one that can transform the type of society, social order and social institutions also change, as well as the norms and values upon which they rest. At this point, old social theories no longer provide adequate explanations of social phenomena and a need emerges for new theoretical approaches and concepts. Social sciences will develop them, mostly thanks to fundamental research. Thus, development of new theories will enable (new) understanding of (altered) reality and scientific prediction to the extent to which prediction is possible in social sciences. Besides, existence and confrontation of „rival theoretical approaches and theories is but an expression of vitality of sociological science. In the study of human beings – ourselves – theoretical variations save us from dogma” (Gidens, 2001: 350).

Fundamental research in social sciences is also necessary for naming things properly, to speak in Confucian terms. Social changes cause modification which is minimally twofold: in the content of notions and in the use of notions. Therefore, they also have consequences on the language of social sciences. This is why social sciences are focused on frequent discussion about the notions used:

conceptual confusion must be resolved. Without this step grows the danger of misunderstanding, the breakdown of the culture of dialogue and eventually manipulation which can endanger public interest.

An additional reason why the contribution of fundamental research in social sciences to realization of public interest is important lies in the fact that results and knowledge yielded by these research are useful for applied research in spheres of various sciences belonging to the field of social sciences and humanities, but also to other scientific fields. Even when perceived as „overly theoretical” by often “naïve” understandings of scientists belonging to other scientific fields, this knowledge enables a more realistic perception of social and political context in which application of other sciences’ knowledge is expected, as well as a better understanding of social consequences of the said application (Gagnon et al., 2017). In this manner this research indirectly affects good practice in realization of public interest.

A conclusion can be reached that, precisely because of its focus on the public sphere, financing of fundamental research in social sciences is in crisis. A common trend can be identified: financing of scientific research by the public sector has significantly declined in the past three decades in which all things characterized as „public” were proclaimed as „inefficient, expensive, and utterly useless”, while financing by private companies and NGOs took an ever-larger percent of the total financing of scientific research. The problem here lies in the fact that there are no guarantees that benefits of market-oriented research overlap with social needs and public interest; there are serious arguments that corroborate the assertion that fundamental research funded by the public sector contributes more to the growth of scientific knowledge (Archibugi, Filippetti, 2018). Perhaps the awakened consciousness about ecological problems facing the world will lead to awakening of the other, more important and wider, consciousness - about the significance of public interest. In that case, allocation of additional funds for financing fundamental research in social sciences would provide new answers to the old question implicitly or explicitly posed by all societies in all eras: how to establish a society in which it is possible to live (Levi-Stros, 2011: 437)?

2. CRITIQUE OF THE POTENTIAL OF FUNDAMENTAL RESEARCH IN SOCIAL SCIENCES TO CONTRIBUTE TO REALIZATION OF PUBLIC INTEREST

Critique of the potential of fundamental research in social sciences to contribute to realization of public interest could start with difficulties in research of social phenomena, including scientists’ subjectivity, as well as the problems of scientific prediction in social sciences (Starčević, 2022: 19–20; Bezmeck, Dumbrovsky, 2020). But, aside from these, there are other very significant reasons why the potential of fundamental research in social sciences to contribute

to realization of public interest in contemporary states is limited. These reasons are external in relation to the researches themselves. They are generated in the process of publishing and presenting the research results to the public, their effect on social and economic elite, political decision makers and public opinion. We shall attempt to name the most important ones.

Research results can, but don't have to be, codified into norms mandatory for all members of society, i.e., political decision, because the position of political decision-making is located outside of science. It is politics, not science, the social activity in which such decisions are made (Diverže, 1966: 9). George Ritzer already identified the reference points of political processes and relations of political power in society which determine the dissemination and impact of sociological theories (Ricer, 2012: 37–38). They are also relevant to the potential of fundamental research in social sciences to contribute to realization of public interest. Nevertheless, Ritzer's list consisting of only four items can be supplemented.

According to Sartori, democracy is a form of rule based on opinion, meaning that significant decisions in democracies are made based on the public opinion. Public opinion is formed in three ways: „cascading descent from the elite downwards”, „boiling ascent from the basis upwards” and “identification with benchmark groups” (Sartori, 2001: 122–126).

If we follow the lead of the „boiling ascent from the basis” model of forming opinion (for the sake of decision making or influencing decision making), we can conclude that results of scientific research could affect the decision if they were able to induce the described „boiling”. Such possibilities are, however, significantly limited, despite the enormous quantity of information that is published and fed to the public on a daily basis; or perhaps even due to this fact, because the explosion of information caused the implosion of meaning (Uzelac, 2004: 593). It seems that mass culture has two dominant outcomes. One is the creation of a hedonistic, frivolous lifestyle, which implies the awakening of the lowest forms of human desires and futile attempts to satisfy them by a never-ending consumption of new produces of the „industry of entertainment, dreams and oblivion” (Šušnjić, 2015: 109). The other, borrowed from the inherent ability of capital to transform everything into merchandise, is the creation of a social ideal of a market-oriented consumer – Baumann warns: an egoistic man with no social bonds (Bauman, 2009: 87). Individuals with no social bonds and ties cannot induce „boiling from the basis”, at least until they become so threatened that they are forced to reconnect with society. Both outcomes contribute to reproduction of existing social relations and sedation of masses.

In regards to the impact of scientific thought on public opinion following the „boiling ascent from the base upwards” model, various opinions have been expressed and many important discussions have been had. It seems that today's situation was best described by academician Ljubomir Simović, when receiving the „Dositej Obradović” award on February 22nd, 2017. At the ceremony, academician Simović reminded that Dositej Obradović published

his *Život i priključenje* in 300 copies back in 1783. Then, commenting on the volume of book publication today, wondered „who will take our books, which are published in 300 copies today, like in 1783, seriously?” (Simović, 2017). With such low volume of book publishing, which perfectly depicts not only the position of literature but also of entire social thought in fluid modernity, there is no fear that results of social sciences research could produce „boiling from the base”. Even the hope awakened by „the expansion of intellectual profession and its more or less restless dispersion across the entire social body” (Sartori, 2001: 127) is blurred by the flood of information, different attitudes and opinions, often pseudo-scientific, which remain unsanctioned and difficult to distinguish from the truth due to epistemological and axiological relativism. If we allow ourselves to briefly venture into military sciences, this can be compared with ideas of Chinese strategists concerning information war: according to them, the enemy ought to be „drowned in an ocean of information offensive” (Wei, 1998: 412).

The other thread of Sartori’s thought, which identifies the top of political organization as the place of decision-making, leads us to the state. Traditionally, the state has been the place of political decision-making. Tomas Aquinas considered that there are two types of good in a community – private and common – and based his apology of state authority on the necessity to protect the common good. Namely, every community member takes care of his private good, but as no individual is capable of taking care of the common good, this task is taken care of by the state (Kajtez, 2019: 178-179; Mićunović, 2010: 168). Indeed, during the major part of history, the state as the highest and most significant political organization in a society, was the address for all demands for protection of public interest made by individuals and social groups. The problem of protection of public interest faced by contemporary societies is partly derived from redefining of the notion of sovereignty and weakening of state sovereignty in the process of globalization. This process favored globalization of market and capital, while political organizations of society, including the state, remained local. At the beginning of the XXI century, a „divorce between power and politics” (Bauman) occurred: financial power, becoming global, left the reach of state politics which can no longer control it using its local resources (Starčević, 2022: 71). Moreover, states often found themselves in-between confronting demands of their citizens for protection of public interests and demands of multinational capital for more favourable business conditions. If this interpretation of the relationship between power and politics is true, it implies that all appeals to state institutions, based on research results, are of limited capacity. In order to make a greater impact, it would be necessary to gain the favour of the free-market masters. The problem that arises at this point is how to win over the global extraterritorial elite for the cause of local public interest? The expanded concept of individualization offers a consoling answer (Kastels, 2018: 220-221): public interest can be realized because it is connected with particular and individual interest for which social action takes place.

The third mode of forming public opinion is based on group identification. It concerns opinions which are formed before information, i.e., opinions which are „defended from information and which aim to remain, despite the obviously opposite conditions of reality” (Sartori, 2001: 128). Therefore, no further analysis is necessary for the sake of this paper. It is sufficient to recognize that the rational path of science is not always attractive for people and social groups, and that they will not necessarily take it just because science recommends it.

CONCLUSION

Fundamental research in social sciences have been criticized in past decades for its alleged inapplicability. However, when it comes to realization of public interest, such research is beneficial in defining desired aims, in determining the current state of affairs and means necessary for accomplishing the defined aims, and in determining the methods of using means purposefully. Relying on hermeneutical and phronetic potentials, they enable comprehension of context and prescribe correct actions in a value-rational plain accessible only by social sciences. With their ability to establish new, or deepen old, theoretical knowledge, fundamental research in social sciences enables theoretical approach to issues of public interest, with all the benefits that a good theory provides. Results and knowledges gained by such research indirectly affect good practice in realization of public interests as they are useful for applied research in all fields of science.

Fundamental research in social science was, is and will be very significant for development of social sciences, confirmation, refutation, and establishing of new social theories and opening new perspectives of social development and progress. Whether their potential to contribute to realization of public interest will be used in contemporary democratic societies essentially depends on phenomena outside of science, which affect the formation of public opinion. They often determine financing of scientific research and financing of scientific institutions as such, which are at the same time the object of their study. Accordingly, a well designed and conducted fundamental research could parry them.

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Срђан В. СТАРЧЕВИЋ

Срђан М. БЛАГОЈЕВИЋ

ФУНДАМЕНТАЛНА ИСТРАЖИВАЊА У ДРУШТВЕНИМ НАУКАМА И ЈАВНИ ИНТЕРЕС

Резиме

Током неколико последњих деценија често се износе примедбе на рачун фундаменталних истраживања. Ова истраживања, нарочито у друштвеним наукама, на мети су критика као ирелевантна и без практичне користи за решавање друштвених проблема. У одбрану фундаменталних истраживања у друштвеним наукама уобичајено се истиче да она доприносе увећању корпуса научног знања, разради друштвених теорија и бољем разумевању друштвене стварности. Изазови за фундаментална истраживања, по мишљењу аутора, долазе и отуда што се она или доживљавају као непрактична форма чисте науке – као наука ради науке – или су њихови резултати перципирани као део друштвеног ангажмана интелектуалаца, због чега на објективност њихових резултата пада сенка сумње. Додатан проблем представља гносеолошки релативизам у савременим (постмодерним приступима у) друштвеним наукама. У раду се испитује могућност друштвених наука да путем фундаменталних истраживања допринесу остваривању јавног интереса. У раду су коришћене методе анализе, синтезе и генерализације, а од општих научних метода доминантно је коришћена хипотетичко-дедуктивна метода.

Кључне речи: фундаментална истраживања, друштвене науке, јавни интерес, напредак, политичка воља.

Nataša N. STANOJEVIĆ*

Institute of International Politics and Economics, Belgrade

THE CONTEMPORARY PROCESSES IN THE GLOBAL ECONOMY AND METHODOLOGY OF ECONOMIC SCIENCES¹

Abstract: The paper explores the shortcomings of the fundamental assumptions of economic methodology and the limitations of their application due to the modern processes that have led to radical changes in the very foundations of the world economy. The focus of the research is the incompatibility of the methods of positive economic science with the goals of applied economics. The general hypothesis is: *If the fundamental postulates of positive economics are applied consistently, without including actual, especially radical changes in the functioning of the modern world economy, their reliability and precision are significantly reduced.* The paper has two key parts that relate to the two most critical contemporary processes that pose new challenges to economic methodology in the world economy. The first is the impact of technological development, which leads to an increase in the unexplained values of economic growth in classical econometric models. The second analyzed process is the economic globalization that has placed global value chains (GVCs) at the centre of international business. The increase in the volume of international trade within GVCs has led to distortions of statistical data on trade and the devaluation of fundamental research results. The results showed that fundamental research can still be important for economic policies, but with continuous monitoring of real processes and their inclusion in basic methods, either by including new factors, corrections of input data or models.

Key words: economic methodology, economic growth, international trade, globalization, technological progress, economic policies.

1. INTRODUCTION

From the emergence of economics as a separate scientific discipline or rather as a skill, until the 1970s, economists' most important task and goal was to provide guidance and advice to economic policymakers. This primarily referred

* Research fellow and full professor, natasa.stanojevic@diplomacz.bg.ac.rs

1 The paper presents findings of a study developed as a part of the research project „Serbia and challenges in international relations in 2022,” financed by the Ministry of Education, Science, and Technological Development of the Republic of Serbia, and conducted by Institute of International Politics and Economics, Belgrade.

to forecasts of economic trends (prices of key goods on the world market, domestic and international supply and demand). The role of an economist involved the mastery of relatively simple skills and techniques, most of which are still in use today. The goal of economics set in this way did not support the development of the methodology of economic sciences as a separate discipline. Therefore, before the 1970s, the literature on economic methodology was limited to a few classic treatises and short methodological statements. In these early stages, the formal separation of applied economics from fundamental (positive) economics, which refers mainly to quantitative methods, was of little importance and probably impossible, as general theories were developed *from* specific applications.

The development of the idea of the possibility of fundamental research led during the 1980s to a sudden expansion of the literature on economic methodology. In ten years, more than thirty monographs appeared, as many textbooks, and three journals, which specialized in whole or in part in economic methodology, were founded. The number of articles and books on economic methodology continued to increase, as well as the coverage of analyzed areas, so this can be considered the period when the foundations of methodology as an independent discipline within economic science were laid.

With the expansion of economics as a science and the demands placed on academic economists, the need to make a more apparent distinction between fundamental research in positive economics and applied economics grew over time. Consensus on many general economic topics became widespread, and these general insights were transposed into formal models. Similar to the natural sciences, models in the field of economics represent a simplified version of reality. In form, empirical economic models usually consist of a set of mathematical equations or diagrams which describe a theory of economic behavior. Through their simplicity, economic models help to illustrate how economic entities function.

Due to the increasing technical sophistication of positive economic research, quantitative methods in economics began to develop more rapidly. They became massively applied by consolidating liberalism as the dominant economic concept but probably would have been massively used even without a political background because they enabled far more precise scientific explanations and predictions of economic phenomena than could have been imagined. Nevertheless, quantitative models are set dogmatically, and similar to the laws of natural sciences, they are viewed as general laws, and the relationships they explain as causal instead of stochastic. In a short time, the positive methodology in economics turned on itself and moved away from the applied methodology and thus from reality and economic policy as the former basic goal. Methodological literature in the modern period is dominantly related to the positive economy methodology and focuses on broad rules that can be reduced to developing a formal model, hypothesis formation and empirical testing of hypotheses using, again, technical econometrics. „These broad rules may or may not be appropriate for building and testing general theories, laws, or insights that should become

the structural basis for economic thinking” (Colander, 2004, p. 35). They cannot be the basis for formulating economic policies.

The subject of this research is the significant mismatch of the fundamental methods of economic science with the goals of applied economics, which occurs when the dynamics of real processes in the global economy disprove the set basic “laws”. The general hypothesis can be formulated as follows: *If the fundamental postulates of positive economics are applied consistently, without including actual, especially radical changes in the functioning of the modern world economy, their reliability and precision are significantly reduced.*

Under the dynamics of real processes, that is, radical changes, we mean: a) the impact of rapid technological development based on the functioning of the world economy; and b) intense economic globalization that has placed global value chains (GVCs) at the center of international business. The effects of these two processes on the methodological assumptions of economics are analyzed in separate chapters. First, the problems of applying classical econometric models to the most common macroeconomic topic – economic growth, which in the modern period is primarily determined by the expansion of technology – are investigated. The second part illustrates the devaluation of the fundamental methods used in the key area of the international economy – foreign trade, which since the end of the 20th century has been taking place to the greatest extent within international production chains.

2. TECHNOLOGY DEVELOPMENT AND INNOVATION IN ECONOMIC GROWTH MODELS

According to the classic model, the product (output) is generated using two factors of production, labor L (labor) and capital K (capital) (eq. 1). Any increase in productivity, therefore, would have to be caused by an increase in invested capital or the number of workers.

$$Y = F(K, L; t) \quad (1)$$

The sudden technological rise of the 1980s, the growth of investments in IT and the evident application of new technological solutions in the economy did not show up in productivity statistics. According to econometric models, productivity growth in the world economy lagged during the 1970s and 1980s, while at the same time, the computer and technological revolution was apparently making production more and more efficient. Economist Robert Solow famously said in 1987 that *the computer age was everywhere except in productivity statistics*. This phenomenon became known as the Solow paradox. At the same time, with the development of technology, the classic model began to show increasing residual values, which indicated that significant causes of economic growth remained beyond researchers’ understanding.

Significant progress in the discovery of this phenomenon was represented by the works of Abramovitz (1956), Denison (1962; 1979) and Solow (1957; 1959),

which refer to the neoclassical or exogenous theory of economic growth. In their empirical research and theoretical elaborations based on it, they pointed out that economic growth, apart from the nature of labor and capital, is influenced by other, unconventional factors, such as the role of knowledge, technique and technology in economic growth (Kotlica, Stanojević, 2017). However, more than a decade passed before their inclusion in the methodology of economic research, that is, until it was possible to assess their impact.

The most frequently used model of exogenous growth is the Solow-Swan model, which, in addition to the accumulation of capital, labor or population growth, explains economic growth by increasing productivity caused by technological progress. The model has the following form:

$$Y(t)=K(t)^{\alpha} (A(t)L(t))^{1-\alpha} \quad (2)$$

where t stands for time, $Y(t)$ is the total production over a certain period, while A is a new variable related to technology, i.e. „knowledge”, so that AL represents the effective labor force instead of just the previous L , which was related to the number of workers. Even this model did not fully explain the nature of modern economic growth.

It also has a certain unexplained value – the residual, but it is reduced to many times smaller values compared to the classical model. This lower unexplained value can be attributed to “improvement in the quality of work, better training and experience (labor-neutral and labor-materialized technical progress) and inventions that are materialized, incorporated in the construction and application of new machines” (Kotlica, Rankov, 2014).

By including the knowledge variable, productivity growth became visible in the model. Further fragmentation at the national level, specifically in the example of the largest economy – the USA, established mechanisms by which knowledge ‘spilled’ into productivity. In part, the productivity growth of the 1990s reflected rapid, fundamental innovations in semiconductor manufacturing, which translated into increased productivity in that sector (technology) and higher-quality, higher-value inputs for downstream computer manufacturers. In addition, labor-intensive sectors such as retail and wholesale, whose productivity had stagnated for years, have increased productivity sharply, using technology that has made supply chains and distribution centers more efficient.

The new or endogenous theory of growth and technological progress (Arrow, 1962; Romer, 1986; Romer, 1990; Lucas, 1988) offers more radical explanations of the residual and long-term growth of the production potential of economic entities. It emphasizes the role of economies of scale, investment in the sector of Research and Development (R&D), human capital and the role of investment in the diffusion and promotion of technical change. Like the previous model, growth is attributed to technological progress, with the key difference being that it originates from within the economic system – a state or a company. These authors assumed that investment in R&D and intellectual improvement of labor, helped foster endogenous innovation and fuel persistent economic growth.

One of the most frequently cited models of endogenous growth is Romer's (1990). It can be presented in the following form:

$$Y_t = K_t^\alpha (A_t L_t) (A_t H_t) TL \quad (3)$$

where K is capital; A – knowledge, ideas; L – labor in production; H – human capital – which includes activities such as formal education and training of employees; TL – the index of technology level.

Today, the methodology of economic science is faced with an almost identical problem: a kind of second round of the Solow paradox created due to the digitalization process, which cannot be subsumed under earlier technological development and knowledge development. Digitization refers to newer digital technologies such as cloud computing, e-commerce, mobile internet, artificial intelligence, machine learning and the Internet of Things. Digitalization improves production in a sense that goes far beyond the optimization of economic processes in the classical sense. Business models are being fundamentally transformed, value chains are changing, and the boundaries between economic branches are blurring to such an extent that it is no longer possible to identify the sectors into which technological development has „spilled over”.

Adhering persistently to the goal of attributing the universal and exact character of natural sciences to the economy, the official statistics of international organizations are moving in the direction of adding an increasing number of variables, which actually explain a smaller and smaller part of the processes in the world economy. This direction does not improve the economic methodology but increasingly distances macroeconomics from its original application and practical contribution to improving the economy, society, and standards, which is not necessarily the same as economic growth.

3. GLOBALIZATION AND METHODOLOGY OF INTERNATIONAL TRADE

International trade, as a branch of macroeconomics, has many specially designed research methods and techniques. Quantitative models enable significant scientific explanations and predictions and provide the basis for creating a successful foreign trade policy.

Thanks to the massive use of information technologies, statistical data on foreign trade are very precise and readily available, enabling and expectedly leading to the expansion of scientific research and published works in this area. Empirical research mainly refers to applying existing theoretical models to individual countries or groups of countries, while most theoretical contributions to the study of international trade refer to minor modifications of existing models. The most commonly used models in international trade are regression analysis, gravity model, *Heckscher-Ohlin* model, *Coefficient of conformity*, and *Balassa* and *Grubel-Lloyd* index.

We will briefly explain the most common methods in foreign trade to illustrate the information these methods provide to economic policymakers. Regression analysis and the Gravity Model are the standard frameworks for analyzing trade directions and, more precisely, the potential of trade flows.

$$Y = a + b_1 * X_1 + b_2 * X_2 + \dots + b_p * X_p \quad (4)$$

They are very similar in form, and both aim to quantify the impact of factors affecting international bilateral trade (Y in equation 4). These are usually GDP or GDP per capita, geographic distance (as a representative of transport costs), price level, common language, customs duties, colonial history and others ($b_1, b_2 \dots$ equation 4). The goal is to predict the volume of trade in the short term, determine the “free space” in the target markets for increasing exports (Stanojević, 2016) or correct one of the factors that can be influenced by economic policies (dummy variables), in order to increase export chances.

Establishing a competitive advantage based on price is not enough for a successful trading strategy. It is also necessary to determine which goods the observed economy can export to marked markets, that is, what it is likely to export if the real exchange rate is favorable. For this purpose, the Coefficient of conformity – CC is often used, which analyzes the degree of conformity between the export of one country and the import of another country of a certain product.

$$CC = \frac{\sum_{i=1}^n XiMi}{\sqrt{(\sum_{i=1}^n XiXi) (\sum_{i=1}^n MiMi)}} \quad (5)$$

Contrary to previous models, it does not assess the total export potential of one country to another but is an assessment of potential export directions for a specific group of products.

Balassa index, i.e. Revealed Comparative Advantage (RCA), determines the comparative advantage of a specific country in producing a selected group of products, i.e. sector. The input parameters are the share of exports of a particular sector in total exports at the level of the observed economy and the global level.

$$RCA_{ij} = \frac{X_{ij} / \sum_j X_{ij}}{\sum_i X_{ij} / \sum_i \sum_j X_{ij}} \quad (6)$$

The Grubel-Lloyd index defines a certain trade direction as intra-industry trade (IIT). X and M in equation 7 are export values for the observed activity or product grouping, which is distinguished by its effects on the economy as a significantly different category concerning total exports (Grubel 1967; Grubel and Lloyd 1971;1975).

$$I = 1 - \frac{|X - M|}{X + M} \quad (7)$$

All these methods have provided relatively precise and valuable information for creating economic policies for several decades. Contrary to the aforementioned methodological problem of the appearance of factors for which economic methods do not have appropriate variables, in the case of foreign trade, the key methodological problem is the validity of statistical data. Their veracity in the sense of keeping up-to-date documentation on crossing the border of a specific product is not questionable, but rather the validity of the changed meaning and content of this information.

The changed meaning of trade statistics is a consequence of the international fragmentation of production. This is the most critical characteristic of the last wave of globalization and refers to the dispersion of production, that is, the production chain in several countries. Jones and Kierzkowski (1990) initially proposed the term production fragmentation. Subsequently, Arndt (1997), Venables (1999), Jones and Kierzkowski (2001, 2005), and Deardorff (2001, 2005) made significant contributions to the theory of international fragmentation of production and trade in semi-finished products.

Fragmentation of production, that is, production through internationally dispersed production chains, significantly degrades the validity of statistical data on international trade, especially in the context of the specific goals for which the aforementioned methods of trade research are intended. These data no longer provide an accurate answer to the most common research questions: where, what or how much an economy can potentially export to accelerate growth and development.

Production fragmentation began due to extensive foreign direct investment (FDI), which developed countries invest in low-cost countries. Export statistics show that the host country records increased exports. However, most of the value of exported products actually belongs to the investor (Stanojević, Kotlica 2015). Although it can bring certain benefits, this type of export is not necessarily the goal of economic policies, nor is it an adequate subject of interest for trade policymakers but investors. Fragmentation of production occurs even without the participation of FDI. In current conditions, almost all export companies in different countries, with or without the participation of foreign capital, are part of international production chains.

Another problem for the methodology is that world trade, according to customs data, has a value many times higher than the total produced value. This is also the result of fragmented production and the high volume of trade within production chains. It is about the fact that the goods in the production process, before finalization, cross the border several times. Less developed countries usually import all components of the product, add a part resulting from their own production and export further, or just assemble the product. At the same time, the customs services do not have a mechanism, and in international statistics it is not expected, to calculate only the added value in the exporting country (link of the chain). Each time the value of the entire product is recorded, which is increasing with each stage of production. The initial value of low-grade products or parts, for example cars or machines, is recorded at each border crossing.

Such imports and exports exist only on a statistical level, while the positive effects on economic growth are far smaller, and the impact on the qualitative development of the economy is usually completely absent. Exchange within the value chain since the 1990s has far more value than exchange within the former term. At the beginning of the 21st century, there are almost no products, except for raw materials, that are entirely produced on the territory of one country. If the share of exports within the GVC is large, this, apart from the absence of advantages for the economy of the host country, represents an obstacle for all quantitative research, because it presents a very distorted picture of the volume of exports. As every quantitative method of international trade has as input data statistical data on imports and/or exports (equations 4-7), any research based on standard trade statistics leads to more or less wrong estimates and forecasting.

International trade methods, by themselves, can still be very useful, but with input corrections. For OECD countries, there are statistics of flows within production chains (OECD, 2012), which should be subtracted from the total volume of trade, and only then should the corrected value be applied in the mentioned models. For countries that are not members of the OECD, in the article Stanojević, Kotlica (2018), a procedure for calculating vertical intra-industry trade is proposed. Subtracting this value from the total trade is approximate, but it allows a more realistic representation of the exports of a given country.

Another type of correction needed is also related to globalization and fragmented production. Although the mentioned models were created for the assessment of the trade directions of total exports, in the modern constellation of highly open and closely connected economies, the analysis of total exports actually provides almost insignificant information. Foreign trade models can provide relatively reliable estimates only if they are applied to trade statistics for products of lower levels of aggregation, that is, sub-sectors or product groups.

4. CONCLUSION

The most important question of applied economics is how the insights of positive economic theory can be translated into policies that achieve the goals of a concrete society, taking into account real institutions, sociological and political dimensions of politics?

Despite the precision of quantitative models as the backbone of a positive, fundamental methodology in economics, this type of research, when applied to a specific economy or segment of the economy, in the modern era provides less and less reliable predictions and estimates. A successful methodological approach cannot exclude the importance of qualitative aspects of economic research, such as understanding the specifics of the analyzed economy, its social aspects, internal or external processes and changes. As shown in this study on the example of a key macroeconomic issue - economic growth, and a key issue of the international economy - foreign trade, real changes in the world economy are not only fast and frequent, but transform the very foundations of its functioning.

By setting the fundamental rules of positive methodology in economics, the fact that economics is a social science was neglected, that is, consciously ignored. Quantitative methods and models are important, but not as an end in themselves.

The analysis of the validity of the economic growth model showed that the current dynamics of technological development continuously changes the foundations of the economies themselves, which is why important aspects of economic growth and development remain unrecognized by the application of fundamental methods. Econometric models enable objective and useful analyzes only by continuously adapting to real changes in the domestic or world economy and applying them to specific research questions.

Another problem in the application of the fundamental principles of economics arose from the changes in the basis of production resulting from the modern process of economic globalization. The international dispersion of production chains has led to a significant distortion of data on the volume of foreign trade. In the models most commonly applied in the field of foreign trade, statistical data no longer provide the correct answer to the most common research questions: where, what or how much an economy can potentially export in order to accelerate growth and development. The information that econometric methods offer economic policymakers becomes imprecise or completely wrong. In this area, the methodology has a technically more complex, but achievable requirement for data corrections in two directions. The first is the assessment of the value of trade that, within the production chain, has been customs recorded multiple times and the reduction of trade data by these amounts. Another methodological requirement is the application of methods only to products of the lowest available level of aggregation, because estimates of potential markets for the total exports of any country, in the modern, highly globalized world economy, are completely inappropriate.

After more than a century, the methodology in economics must return to Keynes' neglected definition of what he called the art of economics, which is the linking of insights gained in positive economics with the goals established in normative economics.

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Наташа Н. СТАНОЈЕВИЋ

САВРЕМЕНИ ПРОЦЕСИ У ГЛОБАЛНОЈ ЕКОНОМИЈИ И МЕТОДОЛОГИЈА ЕКОНОМСКИХ НАУКА

Резиме

У раду се истражују недостаци темељних претпоставки економске методологије и ограничења њихове примене услед савремених процеса који су довели до корених промена у самим основама светске привреде. У фокусу истраживања је некомпатибилност метода позитивне економске науке са циљевима примењене економије. Општа хипотеза је: уколико се основни постулати позитивне економије примењују доследно, без укључивања стварних, посебно корених промена у функционисању савремене светске привреде, њихова поузданост и прецизност се значајно смањују. Рад има два кључна дела која се односе на два најкритичнија савремена процеса који постављају нове изазове економској методологији у светској економији. Први је утицај технолошког развоја, који доводи до повећања необјашњивих вредности привредног раста у класичним економетријским моделима. Други анализирани процес је економска глобализација која је поставила глобалне ланце вредности (GVC) у центар међународног пословања. Повећање обима међународне трговине унутар GVC-а довело је до изобличења статистичких података о трговини и девалвације резултата фундаменталних истраживања. Резултати су показали да фундаментална истраживања и даље могу бити значајна за економске политике, али уз континуирано праћење реалних процеса и њихово укључивање у основне методе, било укључивањем нових фактора, корекцијама улазних података или модела.

Кључне речи: економска методологија, економски раст, међународна трговина, глобализација, технолошки напредак, економске политике.

*Olja M. ARSENIJEVIĆ**

*Nenad N. PERIĆ***

Institut for Serbian Culture Priština – Leposavić

INTERDISCIPLINARYNESS AND DIFFERENT APPROACHES OF CRITICAL DISCOURSE ANALYSIS***

Abstract: Critical discourse analysis cannot be defined as one-way, nor as a specific branch of linguistics that deals with discourse studies. In the paper, the authors advocate the thesis that critical discourse analysis is not a discipline or a theory, but that eclecticism is significant for it, as it is characterized by a non-unique theoretical framework and methodological apparatus. Or, on the other hand, it can be pursued within or in combination with any approach or sub-discipline of the humanities or social sciences. The paper presents the approaches of different world authors (Vezovnik, Meyer, van Dijk, Wodak, Rasmussen, Ager, etc.) to critical discourse analysis, and through their analysis it is pointed out that critical discourse analysis is used by epistemological theories, general social theories, theories of the middle range and microsociological, social-psychological, discursive and linguistic theories. Approaches that are critically determined according to the analyzed texts are grouped under this name. Critical analysis is a key element by which critical discourse analysis approaches differ from linguistic style analyses, which do not consider language in relation to society, and therefore do not thematize the relationship between language, power and ideology. CDA critically approaches social problems by using language to expose power relations that are often hidden, while at the same time trying to reach practically relevant conclusions.

Key words: qualitative methodology, content analysis, standard of objectivity, standard of subjectivity, latent constructs.

1 BASIC STARTING POINTS

Critical discourse analysis originates from the field of critical linguistics (CL), but at the same time it is increasingly asserting itself as the successor of the theory that was known under this name (Wodak 2004). CDA views language

* Full Professor, Institut for Serbian Culture – Priština, Leposavić, arsnijevicolja@gmail.com

** Full Professor, Institut for Serbian Culture – Priština, Leposavić, nesaperic@hotmail.com

*** This paper was written as part of the scientific research work of NIO under the Contract concluded with the Ministry of Education, Science and Technological Development Republic of Serbia, number: 451-03-47/2023-01/ 200020, date 03.02.2023

as a social practice (Fairclough, Wodak, 1997) and attaches key importance to the context in which certain language use occurs, and is particularly interested in the relationship between language and power. The term critical discourse analysis has recently been more specifically used to name that approach of critical linguists, which takes a longer discursive unit of text as the basic unit of communication (Wodak 2004).

The roots of CDA go back to the period before the Second World War, that is, to the critical theory of the Frankfurt School (van Dijk 2001:352). CDA's current focus on language and discourse was developed by the so-called critical linguists who emerged in the late 1970s mainly in Great Britain and Australia. Somewhere in this period, other sciences also began to develop their branches of criticism, such as sociolinguistics, psychology and social sciences. Van Dijk attributes the emphasis on criticality in the mentioned disciplines to a reaction to the dominant official (often „non-social“ or „non-critical“) paradigms of the 1960s and 1970s.

Criticism of CDA therefore derives from the ideas of the Frankfurt School, especially from the work of Jürgen Habermas (Wodak 2004), but today in a broader sense it means the discovery of practical connections between social and political engagement and the sociologically informed composition of society (Wodak 2004), as recognized. that in social issues, mutual connections and chains of cause and effect are often obscured and that it is criticality that draws our attention to these connections (Wodak 2004). One of the tenets of CDA is that all discourses are historically conditioned and therefore can only be fully understood in relation to their context (Meyer 2004).

Thus, the critical component in discourse analysis indicates a distancing from language-oriented discourse researchers who only analyze the choice of vocabulary, without placing it in a wider social context and without problematizing power relations in discourse and analyzing the potential charge of discourse for social change. Critical linguistics and critical discourse analysis are mostly interested in the analysis of hidden but also transparent relationships between structures that express dominance, discrimination, power and control in language. In short, CDA tries to critically investigate social inequality, how it is expressed, indicated, constructed, legitimized, etc. in the use of language or in discourse (Vezovnik 2008; Bulatović, Bulatović, Arsenijević 2012).

Unlike other paradigms of discourse analysis and textual linguistics, KL and CDA do not focus only on written or spoken text, but are interested in the wider process of text creation. A complete critical treatment of a particular discourse therefore requires theorization and description of both those social processes and structures that enable the creation of a text, as well as those within which individuals or groups as socio-historical subjects create meanings in their interaction with texts (Bulatović, Bulatović, Arsenijević 2010). Accordingly, the following three concepts are present in all critical analyzes of discourse:

- power,
- history and
- ideologies (Vezovnik 2008; Fairclough 2010; Kress, Leeuwen 1996).

Unlike some approaches of pragmatics and traditional sociolinguistics, in which, according to critical linguists, contextual variables are too simply connected to language as an autonomous system (Wodak 2004:3), KL and CDA try not to make simple deterministic connections between texts and society. They assume that discourse is constructed according to dominance, that every discourse is historically created and interpreted - ie. located in time and space, and that the ideologies of powerful groups justify structures of domination. Conjunction in Habermas's sense assumes that every speech situation is distorted by power structures, especially in contrast to his utopia of an ideal speech situation in which rational discourse becomes possible (Vezovnik 2008). The complex approach offered by critical discourse analysts enables the analysis of pressures from above and the possibilities of resistance to the unequal distribution of power in society, which appear as social conventions. Dominant structures enforce conventions and naturalize them, that is, in the process of creating meaning, the effects of power and ideology are blurred and take on stable and natural forms – those that are self-evident. Rebellion therefore manifests itself in breaking these conventions and established discursive practices, or in other words – in creative actions (Kairclough 2010).

2 INTERDISCIPLINARITY AND DIFFERENT APPROACHES OF CRITICAL DISCOURSE ANALYSIS

2.1 Interdisciplinarity

Critical discourse analysis cannot be defined as just another direction, school or specific branch of linguistics dealing with discourse studies. Its aim is to give a different way or a different perspective to the formulation of theories, analysis and utility of the whole field of linguistics (van Dijk 2001:352). Therefore, with more or less critical perspectives, he intervenes in very different fields, for example in the field of pragmatics, conversation analysis, rhetoric, stylistics, sociolinguistics, media analysis, etc. CDA is not a discipline or a theory, it is characterized by eclecticism, as it is characterized by a non-unique theoretical framework and methodological apparatus (Vezovnik 2008:84). Or, put another way: CDA can be conducted within or in combination with any approach or sub-discipline of the humanities or social sciences (van Dijk 2004:96).

In CDA we find epistemological theories, general social theories, middle-range theories and micro-sociological, social-psychological, discursive and linguistic theories. Approaches that are critically determined according to the analyzed texts are roughly grouped under this title. Critical analysis is a key element in which CDA approaches differ from language-style analyses, which, unlike CDA, do not treat language in relation to society, and therefore do not thematize the relationship between language, power and ideology. In short, CDA critically approaches social problems using language to expose power

relations that are often hidden (Miljković, Arsenijević, Trnavac 2018), while at the same time trying to reach practically relevant conclusions (Meyer 2004:15).

Interdisciplinarity or transdisciplinarity, as Fairclough calls it, is one of CDA's research strengths. It aims to explain the subject of study from a very wide range of perspectives, while at the same time constantly working from feedback during analysis and data collection (Meyer 2004:16). In addition to interdisciplinarity, which presupposes the integration of different research approaches and methods, Fairclough uses the term transdisciplinarity to emphasize the simultaneous development of all participating sciences. Namely, it is about the cooperation of different disciplines, in which joint work helps them in their (individual) development. Disciplines develop through a collaborative research process, in which each accepts the logic of the other to help advance its research approach, for example, social theory can be developed with the help of some insights from linguistics (Fairclough 2005:53). Since the relations between language and society are so complex and diverse, it is impossible to explain them with only one linguistic science.

Let's take for example politics in the narrower sense, or politicians as a specific but by no means homogeneous group of elites. We can see them as creators of specific public opinions and interests, as well as seismographs that reflect, predict and react to possible changes in public opinion and the expression of changed interests of certain social groups. The relations between the media, politics and the people are so complex that social scientists have not until now could get clear answers about who influences whom and in what way (Wodak 2004:64; Bulatović, Bulatović, Arsenijević 2011). Therefore, only an interdisciplinary approach can make these complex connections more transparent. CDA is only one component of the combination of state-of-the-art approaches in this type of research, as we must not limit ourselves to discursive practices, but also examine a wider range of material and semiotic practices. Therefore, research in CDA must be multi-theoretical and multi-method, critical and self-reflective.

2.2 Different approaches

There are different approaches within CDA, but they mostly have common theoretical and methodological starting points. They deal with power, dominance, hegemony, inequality and the discursive processes of their proclamation, concealment, legitimation and reproduction (Vezovnik 2008:84). Critical discourse analysts rely on Halliday's systemic functional grammar, Bernstein's sociolinguistics, as well as the works of literary critics and social philosophers such as Pessault, Foucault, Habermas, Bakhtin and Voloshinov (Wodak 2004). In principle, CDA procedures are defined as a hermeneutic process, although this characteristic is not always clearly visible due to the positions some authors have taken in their work (Meyer 2004). If we compare hermeneutics with the causal explanations of the natural sciences, it can be

understood as a method that deals with explanations of meaning. However, we must note that the hermeneutic circle - which implies that the meaning of a part can only be understood in the context of the whole, which, on the other hand, is the sum of individual parts - indicates the problematic nature of hermeneutic interpretation. Therefore, it is absolutely necessary to document the analysis process itself in detail.

A common characteristic of CDA approaches is, last but not least, that they do not include the analysis of a large number of linguistic categories, but mostly choose to study only some linguistic devices, for example agents, metaphors, sentence processes, sentence inflection (Fairclough 2001, 2004, 2005; van Dijk 2001, 2004, 2005; Meyer 2004; Wodak 2004), which they connect with the wider social context.

From the point of view of diversity within CDA, the difference between the approaches of Norman Fairclough and Theun van Dyk is most often highlighted, and one of the more important is the approach of Ruth Wodak (Meyer 2004; Wodak 2004). Fairclough defines the relations between language and society according to Halliday's systemic functional grammar and sees concepts of discursive orders based on Foucault. Van Dijk and, to a lesser extent, Wodak also introduce the sociocognitive level, because as a component of text interpretation they use a social-psychological model of the process of social cognition, whereby the context is understood as a mental model that serves as a link between discourse and society (van Dijk 2001, 2004, 2005; Wodak 2004). The essence of this approach is to determine how cognitive models influence the understanding and production of texts, whereby the concept of cognition serves as a link between discourse structure and social structure..

Wodakova is the originator of the discursive-historical approach and is mostly linguistically oriented. Unlike the other two, she, together with Martin Reisigl, is explicitly focused on discourse theory. They understand discourse as a complex bundle of simultaneous and sequential, interconnected linguistic actions, which manifest as thematically connected semiotic - spoken or written - signs within and through social spheres of action (Reisigl, Wodak 2017). Very often they appear as texts belonging to certain semiotic types, i.e. genres. The discursive-historical approach describes and classifies the connections between acts, genres, discourses and texts. Although this approach is committed to critical theory, compared to discourse and historical analysis, social theory does not play a significant role in this, as the context is viewed predominantly from a historical perspective. The historical dimension of discursive actions is analyzed or the ways in which certain genres of discourse are subject to temporal changes are studied..

Wodak supports Mouzelis' conceptual pragmatism because she believes that social science theory is in crisis and needs a new impetus (Wodak 2015). Therefore, the researcher should not exhaust himself in theoretical labyrinths, nor should he try too hard with the applicability of useless grand theories, but should develop conceptual tools that will be useful for concrete social problems (Wodak 2015).

The central point of research of the discursive-historical approach is the political field, where an attempt is made to develop the conceptual framework of political discourse. Vodak tries to fit linguistic theories into his model of discourse, using argumentation theory or the topic list. However, it is not necessary that the concepts arising from the findings of argumentation theory be in perfect harmony with other research questions. For Vodakov, the most important thing is a pragmatic approach.

Fairclough, unlike van Dijk, does not place much emphasis on the cognitive processes that take place in the production and understanding of discourse, but instead focuses on social conflicts according to the Marxist tradition and tries to discover their linguistic manifestations in discourses, where he is particularly interested. for the elements of dominance, difference and resistance. According to Fairclough, every social practice has its own semiotic element (Fairclough 2001). The process of creation, means of production, social relations, social identities, cultural values, consciousness and semiotics are dialectically connected elements of social practice, or CDA represents the analysis of dialectical relations between semiotics and other elements of social practice (Meyer 2004; van Dijk 2004; Wodak 2015).

This approach oscillates between a focus on structure and a focus on action, both of which deal with a specific problem, since CDA must pursue emancipatory goals and face the problems of losers or losers in certain forms of social life.

Fairclough's model of analysis represents a fusion of three different theoretical traditions:

- linguistic analyses,
- interpretive or microsociological traditions, which observe social practices as products of social actors, and
- macrosociological traditions of analyzing social practices in relation to social structures.

At each level, it is a different form of analysis and a different subject of research. The first level is descriptive and refers to the linguistic analysis of the text, based on critical linguistics and Halliday's systemic functional grammar. Ways of naming, use of metaphors, sentence processes, etc. are analyzed.

At another level, Fairclough's approach interprets the relationship between text and interaction. Empirically, it focuses on the analysis of discursive practice that includes the processes of text production, distribution and consumption. In addition to the study of the linguistic means used, it is determined which ideology is expressed by bordering neo-modern discursive elements with elements of political discourse.

At the highest level, it is an explanation of the relationship between interaction and social context. Here, Fairclough deals with social practice, so he is interested in the study of discourse in relation to ideology, hegemony and power.

Critical discourse analysis is essentially connected with certain concepts on which Fairclough's method is based.

Fairclough starts from the realization that language or semiotics is an inseparable element of all material social processes. Social life can be seen as interwoven networks of different types of social practices (economic, political, cultural, family, etc.). The reason Fairclough puts the concept of social practice at the center of social science research lies in the fact that it allows him to combine the perspective of the social structure of a particular practice and the social action that this practice achieves - both perspectives are indeed necessary in social science research and analysis. Thus, by the term social practice, Fairclough means a relatively stable form of social activity (Fairclough 2004 : 205). Every practice is a practice of production, it is the articulation of various social elements within a relatively stable configuration of which discourse is an integral part. The act of production, means of production, social relations, social identities, cultural values, consciousness and semiotics are dialectically intertwined elements of social practice. So these are different elements, but they are not completely separate, unconnected. They exist in a way that each internalizes the others, without changing them in any way or limiting their functioning (Fairclough 2004; 2001). In other words: all social relations, social identities, cultural values and consciousness are partly semiotic (Fairclough 2004 : 206).

Discourse as an uncountable noun or semiotics, according to Fairclough, generally appears in three forms in social practices.

First, it appears as part of the social activity within the practice. For example, one part of performing a profession (eg, president of a country) is using language in a certain way (Fairclough 2004 : 206).

Second, semiotics appears in performances or presentations. Social actors within any practice during their activity, according to their role, create presentations about other practices, as well as „reflexive“ presentations of their own practice. In short, they „recontextualize“ other practices, ie. they include them in their own (Fairclough 2004 : 206). Presentation can therefore be defined as a process of social creation of practices, which also includes feedback on one's own creation - presentations enter social processes and practices and change them.

Thirdly, semiotics appears in ways of being, in the creation of identity - for example, the identity of a political leader, which is partly a discursively created way of being (Fairclough 2004: 206).

Semiotics as a part of social activity forms genres. Genres are the semiotic result of the way of acting and creating social life. Examples: everyday conversation, meetings in various types of organizations, political and other interviews, etc. Semiotics forms discourses in the representation and self-presentation of social practices. Discourses are different presentations of social life, in accordance with assigned roles - differently positioned social actors see and represent social life in different ways, in different discourses. For example, the lives of the poor and neglected are represented through different discourses in the social practices of governance, politics, health and social sciences,

and through different discourses within each of these practices, depending on the different roles of social actors. Finally, semiotics as a way of being creates styles. Fairclough states that one can talk about the styles of businessmen or political leaders (Fairclough 2004: 207).

Social practices, networked in a specific way, form a social order (Fairclough 2001, 2003, 2004). Fairclough calls the discursive or semiotic part of the social order the discursive order. Discursive order tells us how different genres, discourses and styles are interconnected, or in other words: discursive order shows semiotic differences within and between social orders. Different ways of creating meaning, ie. different discourses, genres and styles, namely, reveal what kind of relations prevail in a certain society (Fairclough 2004:124).

One aspect worth studying in these relationships is dominance. It turns out that in a certain discursive order, some ways of creating meaning are dominant, while others are marginal, opposite or alternative. For the analysis of discursive orders, the political concept of hegemony can be very useful. The establishment of semiotic differences in a certain social field can become hegemonic. In other words, in a certain social order there are discourses that have won a hegemonic position and become part of common sense. This further means that these discourses support the supremacy of some people over others. On the other hand, we must not forget the fact that at the same time hegemony is always, to a greater or lesser extent, under attack from the struggle for supremacy. Therefore, the discursive order cannot be seen as a strictly closed and unchanging system, but as an open system, which always depends on what happens in real interactions (Fairclough 2004)..

Dialectical connection between discourse and other elements of social practice

The relationship between discourse and other elements (actions and means of production, social relations, social identities, cultural values, consciousness) of social practice is dialectical and is internalized in other elements without changing each other. If we look at the dialectic of discourse from a historical point of view, that is. from the point of view of the process of social change, the question arises as to how the processes of internalization take place (Fairclough 2004).

We will illustrate the answer by explaining the terms „knowledge economy“ and „knowledge society“. The mentioned concepts assume that rapid changes in economic and social processes are directed by knowledge - that is, that these changes occur due to the production, circulation and realization of knowledge in economic and social processes. Of course, knowledge (science, technology) has always played an important role in economic and social change, but, in this case, the desire is to indicate a dramatic increase in that importance. Indeed, „knowledge management“ essentially also means „discourse management“: knowledge is created and circulated as discourses, and the process through which discourses are realized in economies and societies is precisely the process of the dialectics of discourses and other elements of social practices.

Discourses include representations of how things were and are, as well as imaginations of how things could or should be. Knowledge in the knowledge economy and knowledge society are in that sense imaginary images, that is, projections of multiple states of affairs of „possible worlds“. These imaginary images can be enacted as real networks of practices, i.e. depicted activities, subjects and social relations that are real. In this case, it is the materialization of discourse – economic discourses become materialized, for example, in the tools of economic production, including hardware and software.

Fairclough also uses the term inculcation in the context of discourse processing, namely that discourses as imaginary images can be imposed as new ways of being, new identities. It is common knowledge that new economies and social forms depend on new subjects - for example, „Taylorism“ as a system of production and management depended on changes in the way of being, identity, workers, etc. The process of „changing the subject“ can be viewed from the point of view of the imposition of new discourses. Imposition refers to people beginning to „own“ discourses, positioning themselves within them, in short, beginning to act, think, speak and see themselves in terms of new discourses. Imposition is a complex process and, in Fairclough's view, generally less rigid than enactment. A step on the road to imposition is the spread of rhetoric, but we must note that although people can learn new discourses and use them for certain purposes, they can at the same time consciously maintain a distance from them.

On the other hand, one of the mysteries of discursive dialectics is the process in which what started with the conscious introduction and spread of some new rhetoric, eventually becomes „inextricably linked“ with the practice itself - people do not even know when they have become an integral part of a certain discourse (Okado Gough 2017). In other words: if the workers heard about flexibility, liberalization and similar terms with the advent of neoliberalism, they realized only after the shutdown of the factory where they worked for twenty or more years that they became an indivisible part of the discourse about new opportunities, challenges, as the neoliberal discourse calls job loss.

However, the dialectical process does not end with implementation and imposition. Social life is reflective. This means that people not only act interactively within networks of social practices, but at the same time interpret and represent to themselves and to each other what they do. These interpretations and presentations, in turn, shape and transform their actions. People constantly interpret and represent other people, and various experts and scholars in the field of social sciences (including discourse researchers) are no exception. All of these affect how modes of action and interaction, as well as modes of being (including discursive aspects, genres and styles) are represented in discourses. For example, the public speaking of experts on climate change significantly influenced the fact that politicians became aware of this problem and began to include it in their speeches and agendas. At the same time, this has encouraged

at least some people to start living in a more environmentally friendly way. And this additionally contributes to the creation of new imaginary images, which can then be implemented and imposed. In short, it is a dialectic that involves movements through different social elements, including shifts between material and immaterial, and shifts within semiotics between discourses, genres and styles (Cap, Okulska 2013).

In modern social science, there is an established belief that social entities (institutions, organizations, social agents) are constructed through social processes. Since people have accepted these processes, it shows the effectiveness of discourse: social entities are in a sense the effects of discourse. But social constructivism can prove to be a problematic subject if the relative fragility and impermanence of economic entities and their resistance to change are not taken into account. Indeed, even powerful discourses, such as new governance discourses, can encounter levels of resistance that can prevent both their application and their imposition. Therefore, Fairclough repeatedly points out that when using the dialectical theory of discourse in social science research, it is necessary to take into account the circumstances in which the actors created the discourse on a case-by-case basis. Indeed, it depends on these circumstances whether social subjects will resist the new discourses and, accordingly, what level this resistance will reach.

3 CONCLUSION

Critical discourse analysis has become a well-established social science discipline in the last twenty years. At the same time, this has led critics to scrutinize her research approaches.

Sometimes implicitly, sometimes explicitly, CDA claims that its work has a demystifying and emancipatory effect (Fairclough 2001, 2004, 2005; Meyer 2004; Wodak 2015). In doing so, the question arises as to whether scientific effort can lead to social and political motivation at all. Some authors express doubts about the credible effectiveness of CDA as a means of social justice (Chilton 2005:21).

For Widdowson, the very concept of critical discourse analysis is contradictory, because it is an ideological interpretation and therefore cannot be called analysis. The mentioned author is convinced that the CDA is doubly biased: first it takes the side of some ideological belief, and then it selects for analysis texts that confirm the favored interpretation. Analysis should involve studying different interpretations, which is not possible with CDA, because it forms its own opinion from the very beginning (Widdowson 2004).

Грег Фило (Philo 2007) указује на тематизацију контекста у КДА. КДА критикује да се фокусира само на анализу текста, а заборавља на важне утицаје које његова производња и пријем код публике имају на текст. КДА пречесто аналитички остаје на нивоу текста и не показује одакле потичу појединачни конкурентски дискурси и како су повезани са различитим

друштвеним интересима. Ерјавец (2004) истиче да КДА схвата дискурс првенствено као текст и занемарује производњу и рецепцију овог текста. Из овога следи и тешкоћа у препознавању различитих спољашњих, посебно идеолошких фактора репрезентације и недостатак анализа које би показале како различита публика тумачи поједине текстове (Philo 2007:185).

Although in van Dijk's approach cognition acts as a link between the structure of discourse and the structure of society, according to some critics, one of the most neglected aspects of CDA is precisely the psychological and cognitive side of receiving and creating discourse. Chilton argues that CDA ignores the insights of psychology and cognitive science, that it avoids not only generative linguistics but also cognitive linguistics (Chilton 2005:21). Namely, the aforementioned author believes: if CDA deals with human understanding and knowledge, then it should first of all be interested in what happens in a person's head. Language is created and interpreted in the human brain, therefore it cooperates with other cognitive capacities and motor systems (Chilton 2005:23). So, if the use of language (discourse) is related to the creation of knowledge about social objects, identities, processes, etc. then this creation can only take place in the brains of the participants of the interaction.

Chilton is also critical of CDA from the point of view of social effects. Namely, he doubts her theoretical contributions to the social sciences, more precisely to linguistics (2004: 22).

If CDA sets scientific research goals, then - according to the tradition of Western scientific research - it must necessarily be separated from social and political goals.

Based on the analyzed scientific texts of CDA critics, we can say that they criticize the shortcomings, which are mostly recognized by the critical discourse analysts themselves. The most justified criticism seems to be the biased selection of material for analysis or its inadequate processing, since the discourses that CDA members deal with in their work most often confirm the ideological theses set at the beginning of the research (Fairclough 2001, 2003, 2004, 2005; van Dijk 2002, 2004, 2005 ; Wodak 2004, 2015).

To some extent, we can agree with the criticisms about theoretical deficiency, but we cannot fully agree with Chilton that CDA completely ignores the knowledge of cognitive sciences and psychology, since van Dyck's model of critical analysis is based on cognition. It could be said that CDA theoretically sets research approaches decently. A good CDA should include the best works of different people, famous or not, from different fields, countries, cultures and lines of research. What is visible later in the research process itself is the fact that CDA is bad at incorporating theories about the socio-economic and political conditions in which verbal communication is produced, or in certain places the practical findings of the analysis lack a decent theoretical treatment.

That CDA sets itself emancipatory goals is part of the essence of its mission, so we cannot treat it like other traditional social sciences, as Widdowson does, and accuse it of a lack of scientificity in its research.

As we have seen in previous chapters, CDA itself recognizes its pragmatic orientation and the introduction of more modern approaches, i.e. those who give useful results and can positively contribute to changes in society and do not imagine that they meet the traditional criteria of scientific research. Essential to researchers using CDA methods is their awareness of the role they play in society. They are convinced that science and discourse are particularly indivisible parts of the social structure, because they arise in social interaction and are therefore sometimes subject to social influences. Rather than denying these relationships between science and society, CDA researchers seek to study them, evaluate them, and then use the findings to establish new practices of scientific study.

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Оља М. АРСЕНИЈЕВИЋ

Ненад Н. ПЕРИЋ

ИНТЕРДИСЦИПЛИНАРНОСТ И РАЗЛИЧИТИ ПРИСТУПИ КРИТИЧКОЈ АНАЛИЗИ ДИСКУРСА

Резиме

Критичка анализа дискурса не може се дефинисати као једносмерна, нити као посебна грана лингвистике која се бави проучавањем дискурса. У раду аутори заступају тезу да критичка анализа дискурса није дисциплина или теорија, већ да је за њу значајна еклектицизам, јер се одликује нејединственим теоријским оквиром и методолошким апаратом. Или, с друге стране, може се пратити у оквиру или у комбинацији са било којим приступом или поддисциплином хуманистичких или друштвених наука. У раду су приказани приступи различитих светских аутора (Везовник, Мејер, ван Дајк, Водак, Расмусен, Агер и др.) критичкој анализи дискурса, а кроз њихову анализу се указује да критичку анализу дискурса користе епистемолошке теорије, општег. друштвене теорије, теорије средњег домета и микросоциолошке, социјално-психолошке, дискурзивне и лингвистичке теорије. Под овим називом груписани су приступи који се критички одређују према анализираним текстовима. Критичка анализа је кључни елемент по коме се приступи критичкој анализи дискурса разликују од анализа лингвистичких стилова, које не разматрају језик у односу на друштво, па самим тим не тематизирају однос између језика, моћи и идеологије. ЦДА критички приступа друштвеним проблемима користећи језик да разоткрије односе моћи који су често скривени, док у исто време покушава да дође до практично релевантних закључака.

Кључне речи: квалитативна методологија, анализа садржаја, стандард објективности, стандард субјективности, латентни конструкти

*Ermin H. KUKA**

University in Sarajevo, Faculty of Administration, Bosnia and Herzegovina

DESIGN OF SCIENTIFIC RESEARCH OF PUBLIC POLICY AS A RESULT OF FUNDAMENTAL RESEARCH IN THE METHODOLOGY OF POLITICAL SCIENCE

Abstract: Public policy represent an essential segment of political and overall social action aimed at making rational decisions that solve numerous socio-political problems of citizens. This activity primarily refers to state governments and their supporting agencies, offices, and services. Public policy act and influence people and the environment of their lives, which is very important, but in some aspects also dangerous, since the implementation of public policy is the meeting of selected solutions with concrete social reality. Because of its importance, public policy have developed as a separate subdiscipline or specialist discipline within political science. Through this discipline of political science, new knowledge can influence the resolution of several public and collective problems. Public policy are, therefore, an applied discipline within political science, which has its developed subject and research method. Public policy research and the issue of public policy are primary factors of social science methodology. To be able to research public policy, it is necessary first to identify and discover a research problem suitable enough for research. It is also the first stage of creating public policy, i.e., a model of the cycle of public policy. After that, the determination of the type follows, i.e., the type of scientific research. These are, in the end, the prerequisites for joining the development of a public policy research project and their research. When such a project passes the validation check, field research aimed at obtaining data, arranging it, processing it, and finally drawing conclusions based on it follows. Public policy research ends with creating a policy study (public policy study) or policy analysis (public policy analysis) in which recommendations and the application of the acquired scientific knowledge in the concrete social practice of solving problems are stated. The purpose and goal of this research will be the overview and elaboration of the complete process of creating an applied scientific research project of public policy, which is created through all the critical stages and phases of the scientific research process within the framework of political science methodology. All statements about the design of scientific research within the methods of political science are also valid for

* Asstant professor, ermin.kuka@fu.unsa.ba

creating public policy research. The design of public policy research fully implements the methodology of the general research project, with fewer specific adjustments, coordinated according to the characteristics and characteristics of public policy. Since the design of scientific research on public policy is the result of fundamental analysis within the contemporary methodology of political science, the research within the mentioned topic will be conducted with the application of all primary and general scientific research methods. For empirical research, the analysis (content) of documents will be applied.

Key words: design, scientific research, public policy, political science methodology.

1. INTRODUCTION

Public policy research design is a significant area within public policy. The design of public policy research should be based on scientific principles and principles within the framework of contemporary social sciences methodology, especially the methods of political science.¹ Therefore, public policy research², in the first place, should fulfill all the requirements and criteria of scientific research.

In general, scientific research is understood and marked as „a very complex, organized, systematic, subject-specific and objectively determined process of true knowledge about nature and society by applying cognitively penetrating, reliable and valid, scientifically constructed and verified procedures, methods and techniques and coherent, consistent approaches and conception.“³

The essence of all scientific research is knowing, acquiring, and discovering the truth (accurate knowledge) about phenomena and processes in society and the world.

All scientific research is classified according to the subject and research method into theoretical and empirical. When it comes to public policy research, these researches have the characteristics of both theoretical and practical (multidisciplinary) research. This is particularly important, bearing in mind that academic and empirical analysis „interpenetrate each other and serve as arguments. They, interconnected, form the whole process from scientific knowledge of individuals and special to scientific knowledge of general and general.

1 Termiz, Dževad i Slavomir Milosavljević (1999). *Uvod u metodologiju politikologije*. Sarajevo: „DAX” Trade.

2 The mainstay of knowledge about public policy in this research is a textbook and a book: Kuka, Ermin (2018). *Javne politike*. Sarajevo: Štamparija Fojnica d.o.o.; Tahirović, Emir i Ermin Kuka (2020). *Osnove javnih politika*. Sarajevo: Univerzitet u Sarajevu, Fakultet za upravu-pridružena članica.

3 „Research has been given the role of the only truly scientific way of acquiring true knowledge of the past, present and future with the clear task of discovering, describing, classifying and typologising them, explaining them and, based on scientific law and explanation, predicting them and enabling their direction“ (Termiz, Dževad (2022). *Metodologija društvenih nauka (treće izmijenjeno i dopunjeno izdanje)*. Sarajevo/Beograd: Fakultet političkih nauka Univerziteta u Sarajevu/Međunarodno udruženje metodologa društvenih nauka, str. 262).

They simultaneously use various methods of scientific knowledge and practically connect them into a methodological-methodological system."⁴

Since the subject of scientific research determines and defines research methods, it is evident that research into public policy and the subject of public policy are primary factors in the methodology of social sciences. More specifically, the design of public policy research is the result of fundamental research in the methods of political science.⁵

2. DESIGNING PUBLIC POLICY RESEARCH

To have a more complete and comprehensive understanding and realization of the design of public policy research, it is necessary first to determine and define the very essence and essence of scientific research's design (structure). According to the methodologist professor Dževad Termiz, the construction of a phenomenon, that is, a process is „a set of mutually functionally connected important factors. Unlike structure, the composition of a process, phenomenon, etc., made by all its factors.“⁶

The structure of scientific research can be approached in several ways and from different positions, and two approaches are dominant. The first, which understands the form of scientific research as „a process consisting of constant necessary stages (first stage: the existence of a problem to be solved, the discovery of sources of knowledge about the problem and identification of the problem, preliminary determination of the possible subject of research; second stage - conceptualization of the research: choice or formation of paradigmatic settings, the definition of the project task and creation of conceptual sketch - conceptual project); third stage: the creation of a research project; fourth stage: preparation of the report... Another approach to the research structure is the so-called „Acoff's scheme,“ which operates with research actors, actor actions, and relationships in research.“⁷

The statements above about the structure (design) of scientific research have been applied and are found in public policy research.⁸ The methodology of the general form of scientific research has been fully implemented in designing public policy research, with less specific adjustments and alignment according to the characteristics and characteristics of public policy. The starting point is the primary identification of a problem that exists realistically, socially, and politically.

4 Ibid, str. 195.

5 A demonstration of a specific research design process within the methodology of political science is presented in the following: Termiz, Dževad i Slavomir Milosavljević (2018). *Praktikum iz metodologije politikologije (drugo izmijenjeno, dopunjeno i prošireno izdanje)*. Sarajevo/Beograd: Fakultet političkih nauka Univerziteta u Sarajevu/Međunarodno udruženje metodologa društvenih nauka, str. 145-315.

6 Termiz, Dževad (2022). *Metodologija društvenih nauka (treće izmijenjeno i dopunjeno izdanje)*. Sarajevo/Beograd: Fakultet političkih nauka Univerziteta u Sarajevu/Međunarodno udruženje metodologa društvenih nauka, str. 58.

7 Ibid, str. 59.

8 "In the structure of the research, the goals and purposes of the research play an important role" (Ibid, str. 60).

The structure (project) of public policy research, shown through the stages applied in the form of all scientific research, is as follows:⁹

According to the first approach:

1. definition (formulation) of the policy problem;
2. discovering sources of knowledge about the problem and identifying scientific and other, more or less reliable and inspiring knowledge about the policy problem;
3. preliminary determination of a possible research subject and its articulation in the form of a research topic;
4. selection, i.e., formation of paradigmatic settings;
5. defining the project task;
6. creation of conceptual sketch - conceptual policy project;
7. development of a research project as a scientific and operational document;
8. prepare a report on the results of policy research and the course of the study and prepare attachments to the policy report.

According to another approach:

- ordering policy research;
- articulation and organization of policy research;
- obtaining and transferring collected data from data sources;
- data processing;
- conclusion based on processed data;
- acquainting the client with the results of policy research.

All scientific research, including public policy research, is implemented and conducted according to the same basic rules of scientific methods.¹⁰ Within this framework, the paradigms and methodological, theoretical directions and methods applied in that research are derived, so they have an identical basic structure. The basic form of any scientific study is as follows:¹¹

1. ascertaining the problem, that is, its discovery, articulation, and determination of its place in the system of science based on its provisions;
2. evaluation of the suitability of the problem for research and the type and type of research;
3. creation of a scientific-cognitive basis for approaching conceptualization;
4. preliminary research, if necessary, with the fact that primary research can be theoretical, empirical, and combined;
5. creation of conceptualization and its consideration, which also includes the result of the project assignment and conceptual design;

9 Adjusted to: Termiz, Dževad (2022). *Metodologija društvenih nauka (treće izmijenjeno i dopunjeno izdanje)*. Sarajevo/Beograd: Fakultet političkih nauka Univerziteta u Sarajevu/ Međunarodno udruženje metodologa društvenih nauka, str. 59.

10 „Essential elements of research are the problem, subject, goals, objectives, activities, and means for solving problems, results, and their application“ (Ibid, str. 67).

11 Termiz, Dževad (2022). *Metodologija društvenih nauka (treće izmijenjeno i dopunjeno izdanje)*. Sarajevo/Beograd: Fakultet političkih nauka Univerziteta u Sarajevu/Međunarodno udruženje metodologa društvenih nauka, str. 66-67, prema: Ristić, Živan (1995). *O istraživanju, metodu i znanju*. Beograd: Institut za pedagoška istraživanja, str. 260.

6. determination of the research topic - preliminary definition of the research subject, which is one of the most critical and complex moments;

7. creation of an (implementation) research project, which consists of draft scientific ideas, research plans, methods, techniques, and research instruments;

8. proceeding according to the research project, starting from the formation and training of the research team until its verification;

9. testing the research project and the team and interventions based on the results of the test (pre-research);

10. schedule of tasks and associates for specific jobs;

11. field (or just cabinet) work, depending on whether it is theoretical or empirical research;

12. control of fieldwork;

13. organizing work and working with collected data;

14. drawing conclusions based on data about each hypothesis (each variable, indicator, and relationship between them);

15. ascertaining the results of the research as scientific knowledge gained through research and as the fulfillment of the goals and objectives of the study;

16. preparation of reports and presentation of research results;

17. statement and recommendation for the application of research results.

Creating public policy and their implementation in practice requires abilities and skills to understand issues and problems and, based on that, to define optimal solutions to the identified problem. These optimal solutions are presented as policy documents or proposals (proposals for public policy).

3. TYPES OF PUBLIC POLICY RESEARCH

The results of scientific research on public policy so far show that in the theory and practice of public policy, there are two types (groups) of public policy research, namely:

- policy studies¹² or public policy studies,
- policy analysis¹³ or analysis of public policy.

Policy studies or public policy studies (eng. policy study) mean „a proposal for a public policy intended for other experts in the field of public policy; in it, a certain practical political problem/question is investigated in detail, to formulate certain recommendations.“ IZVORPublic policy researchers (policy researchers) prepare and write policy studies. They are, above all, directed and focused on constructing theories, classifications, and typologies within the framework of public policy and are often carried out for scientific purposes.

12 Young, Eoin i Lisa Quinn (2007). *Pisanje djelotvornih prijedloga za javne politike – Vodič za policy savjetnike u zemljama Središnje i Jugoistočne Europe*. Zagreb: DIM – Udruga za građansko obrazovanje i društveni razvoj, str. 29.

13 Petak, Zdravko (2009). *Pojmovnik*, u „Hrvatska javna uprava, god. 9, br. 1, str. 283-295.

On the other hand, policy analysis or analysis of public policy represents „the process of producing specialist knowledge for public policy and about public policy and the political process.“¹⁴

Therefore, political name analysis is often used in the literature.¹⁵ Policy analysis, in contrast to policy studies, is focused on research related to the evaluation (evaluation) and valuation of partial (individual) public policy and problems (issues) to change the researched public policy. The following table presents the differences between policy proposals within policy studies and policy analysis:

Table 1. Differences between policy proposals within policy studies and policy analysis

AREA OF DIFFERENCE	TYPE OF POLICY-PROPOSAL	
	Policy-study	Policy analysis
Target group	Other policy experts	Decision makers
Orientation	On the problem: general recommendations and data on policy problems	On the client: shaping of special policy to be implemented in a particular case
Methodology	It may involve a significant amount of background research	It rarely contains fundamental research
Ideas/ Language used	It can be entirely the language of the profession (discipline)/ technical language	It must be very clear and simple
Length	Up to 20,000 words	As a rule, it is no longer than 5,000 words

(Source: Young, Eoin i Lisa Quinn (2007). *Pisanje djelotvornih prijedloga za javne politike – Vodič za policy savjetnike u zemljama Središnje i Jugoistočne Europe*. Zagreb: DIM – Udruga za građansko obrazovanje i društveni razvoj, str. 29)

What is particularly important for one and the other form of a policy proposal is that both should be as substantive and long as they can offer practical and feasible argumentation. It is necessary to know all these features when writing a policy proposal. According to the criteria of role and function in scientific knowledge, both types of research represent applied social research.¹⁶ Therefore, the fundamental goal and task of knowledge and understanding acquired based on policy studies and policy analysis is their concrete application in solving socio-political problems.

With the development and affirmation of political science, new paradigms were established within the design and research of public policy. Given the

14 Grdešić, Ivan (2006). *Osnove analize javnih politika*. Zagreb: Fakultet političkih znanosti Sveučilišta u Zagrebu, str. 180.

15 Termiz, Dževad i Slavomir Milosavljević (2008). *Analitika I tom*. Lukavac: NIK „Grafit“.

16 „Scientific knowledge is gained through applied research about the possibilities, ways, and spheres of application of knowledge.“ (Termiz 2022). *Metodologija društvenih nauka (treće izmijenjeno i dopunjeno izdanje)*. Sarajevo/Beograd: Fakultet političkih nauka Univerziteta u Sarajevu/Međunarodno udruženje metodologa društvenih nauka, str. 64).

increasing influence of politics, contemporary understandings of public policy are systematized through three research dimensions and determinations of public policy. This enables a broader insight and a better elaboration of the phenomenon of public policy, representing three basic traditions in public policy research. They are presented in the following table:

Tabela 2. Three research traditions of public policy and policy analysis

Understanding public policy	TRADITIONS OF PUBLIC POLICY RESEARCH		
	Choice based on power	Structured interaction	Social construction
Ontological-epistemological assumptions	Positivism	Critical realism	Interpretativism
Basic methodology	Quantitative methodology (large sample)	Qualitative methodology (small sample)	Interpretive methodology (small sample)
Examples of typical methods of data collection and analysis in public policy research	Statistical models;	Interviewing;	Ethnography;
Key explanatory category	Survey on a large sample;	Document analysis;	Discursive analysis;
Kind	Statistical data processing.	Actor analysis.	Narrative analysis.
Policy analysis	Interests	Institutions	Ideas

(Izvor: Petek, Ana (2016). *Politološka ekspertiza za javne politike*, u „Suvremene teme“, god. 8, br. 1, str. 7-23)

The previous typologies and dimensions of public policy enable the acquisition of interdisciplinary knowledge and understanding of public policy. Since it is about their different research positions and pluralistic character, it can be concluded that such research acquires a wealth of ideas and knowledge necessary for application in solving specific issues and problems of the human community. Indeed, the initial and critical step in that direction, with all types of public policy research, is designing public policy research.

4. HOW TO WRITE A PUBLIC POLICY PROPOSAL?

Essential for every policy expert and policy analyst is the question of how and in what way to write a policy proposal (proposal for public policy). This issue is gaining more and more importance, both because of the complexity and variety of problems in current conditions and because of the diverse audience toward which the policy proposals are directed. In this context, it is necessary for policy experts who prepare and write policy proposals to have the relevant

abilities, skills, competencies, and knowledge that will help them structure and write the policy proposal as best and efficiently as possible.

Previous scientific research in policy science has offered a general framework (general structure) that is common to all policy proposals, primarily policy studies as the most represented form of policy proposals. The system of the policy proposal consists of the following:¹⁷



However, there are minor differences in the structure of policy proposals, so the previously mentioned structure model serves as a guide for writing the best possible policy proposals.

Before writing the text itself, most policy experts recommend that it is helpful to prepare a short outline of the policy proposal. This sketching allows „to decide what is the key message of the proposal and what approach is most effective in framing it, to convey the message convincingly.“¹⁸ The essential concepts of text outline are message and approach. Sketches are critical when several actors are involved; that is when the group works on the proposal itself. They are a perfect tool for moving from the design, research, processing, and analysis phase to the actual writing of the policy proposal.

The first part of the policy proposal is the title of the policy proposal. The title should say a lot, but only some things. Therefore, it is essential to know how to use terms so that the tags are as striking, practical, attractive, clear, and certainly as concise as possible.¹⁹ It is not at all straightforward but quite demanding for every policy expert.

17 Young, Eoin i Lisa Quinn (2007). *Pisanje djelotvornih prijedloga za javne politike – Vodič za policy savjetnike u zemljama Središnje i Jugoistočne Europe*. Zagreb: DIM – Udruga za građansko obrazovanje i društveni razvoj, str. 31.

18 Ibid, str. 32

19 Termiz (2022). *Metodologija društvenih nauka (treće izmijenjeno i dopunjeno izdanje)*. Sarajevo/Beograd: Fakultet političkih nauka Univerziteta u Sarajevu/Međunarodno udruženje metodologa društvenih nauka, str. 288-294.

A compelling title should be:²⁰

- described, i.e., determine the topic and problem discussed in the document;
- as understandable as possible;
- as brief and concise as possible;
- interesting to readers.

Fulfilling the above tasks is the backbone of a severe approach to defining the policy proposal's title. It is realistic to expect a higher expenditure of reasonable time for that work, mainly because it is a subjective decision of a policy expert.

The results of the analysis of several examples of policy titles show several exciting and essential features of all those titles, and they are as follows:²¹

- most titles are not complete sentences;
- keywords are often not embedded in the title;
- some authors divide titles into two parts using a colon;
- some authors mention the most significant discoveries they have made in the title;
- if written in English, all words are capitalized, except for conjunctions (e.g., but), prepositions (e.g., from), and pronouns (e.g., our).

After the initial determination of the title of the policy proposal, we move on to shaping (constructing) the proposal's content. It represents the skeleton (overview) of the structure of the policy proposal itself and consists of a significant number of headings and subheadings marked numerically.

The main features of the content of the policy proposal are:²²

- plays the role of a guide, leading the reader through the entire document;
- facilitates different approaches to reading;
- the numbering system that serves to distinguish sections and subsections;
- indent feature in subsection marking.

After stating the structure of the content of the policy proposal, it is customary to make lists of the data presented in the policy proposal, namely: a list of tables, a list of pictures, a list of graphs, and the like.

Once the content of the policy proposal is set, the next activity is to provide a brief content or operational summary (or just a summary). The straightforward content provides a quick overview of the policy proposal, while the operative summary or just the summary presents a detailed (broad, large) description of the entire policy proposal.

A brief content/Operational summary contains the following: the purpose of the policy proposal, definition and description of the policy problem, evaluation of policy solutions, and conclusion and recommendations.²³

20 *Priručnik za analizu javnih politika: Uvod u proces kreiranja javnih politika na lokalnom nivou*. Goražde: ALDI – Agencija za lokalne razvojne inicijative, 2007, str. 33.

21 *Ibid*, str. 34-35.

22 *Ibid*, str. 36-38.

23 *Ibid*, str. 44.

This part is essential since it provides a short or somewhat broader (more detailed) overview and description of everything contained in the entire text of the policy proposal. This is particularly important for those subjects who only have a little time to read the whole text of the policy proposal or those who only want to familiarize themselves with the essential things in the proposal.

The introduction to the policy proposal, in the simplest terms, represents the front door to the policy proposal. The introduction opens the policy proposal and, at the same time, determines the main content of the policy proposal. The warm-up prepares (introduces) the reader to the broader text and context of the policy proposal. In the opening of the policy proposal, it is standardized to state the following:²⁴

- the context of the policy problem;
- definition of the policy problem;
- declarations of purpose;
- study methodology and its limitations;
- maps of documents.

After the introductory part, there follows a description of the problem that the results and recommendations of the policy proposal try to solve. When describing the problem, the decisive facts are:²⁵

- description of the problem identifies, defines, and elaborates the type of problem that the policy-proposal deals with;
- the description of the problem should convince the reader that the problem addressed by the policy proposal requires government action;
- the description of the problem should focus on placing the issue on its own and not in the general context;
- the description of the problem should build a framework within which the policy options will be argued.

In this part, it is necessary to identify and get to know the background (past) of the problem in question and its current position (current policy context).

Policy options represent the next stage in the structure of policy proposals. In that part, possible and desirable ways of solving the concrete public policy problem are discussed. This part of the policy proposal:²⁶

- provides an overview of possible policy solutions, evaluates and compares them;
- provides convincing arguments in favor of the policy solution that the author prefers;
- reports on the adopted decision;
- builds a clear and coherent connection with the part of the policy proposal in which the conclusion and recommendations are presented.

The offered policy options (construction of policy options) comprise a framework of analysis and evaluation of the provided policy solutions.

24 Ibid, str. 47.

25 Ibid, str. 51.

26 Ibid, str. 67.

The conclusion and recommendations are the last of the policy proposal's primary (key) parts. They synthesize all research results and present the plan and activities of specific activities and activities that are proposed in the policy proposal for solving the problem. Three structural features often included in the conclusion and recommendations synthesize the most critical research findings; a set of policy recommendations and final remarks.²⁷

After the conclusions and recommendations come the appendices. They present some particular specific data which should have been mentioned in the text of the policy proposal. They further support and strengthen research findings and policy-proposal recommendations and supplement the primary data.

The bibliography serves as a part that lists the sources used, i.e., relevant scientific and professional literature used when writing policy proposals. This list provides readers with an insight into the current context of the written policy proposal, its scientific foundation, as well as the research ability of the policy expert himself to consult a broad theoretical basis (sources).

Possible additional notes are placed at the end of the policy proposal. Sometimes these notes are given in footnotes, but in most cases, they are given at the end of policy proposals. They provide additional information and explanations of the concepts and terms used and refer readers to other (broader) literature if they want to analyze these things in more detail.

After the policy proposal is written, according to the structure mentioned above, it needs to be publicized and published so that it can be made available to all interested actors (narrow, but also the wider public).

5. HOW TO PUBLISH A PUBLIC POLICY PROPOSAL?

The final activity in writing a policy proposal is an activity related to the publication of the policy proposal so that it can be delivered to the client or made available to the broader and narrower social community and interested actors. Of course, the very publication of a policy proposal requires the previous involvement of several actors, who will prepare it linguistically, stylistically, and technically for final publication in hard copy or one of the electronic formats. If the policy proposal remains unpublished, in that case, it cannot fulfill its function and task. In that case, his recommendations and suggestions cannot experience concretization in social and political practice.

Also, it is very significant and essential to ensure a respectable and capable publisher when publishing a policy proposal. That publisher must be established in the business it deals with and accessible to the public. Therefore, it is essential to establish an effective relationship between the author of the policy proposal and its publisher. In this context, the author of the policy proposal is expected to harmonize it or consent to adjust the text with the form and standards

²⁷ Ibid, str. 82.

of the publisher. Each publisher has its conditions, style, and criteria below which it will not accept the publication of any manuscript, including a policy proposal. Generally speaking, the publisher's guidelines refer to „the expected structure, style, length, formatting, citation standards, copyright, and topics to be addressed in policy studies, as well as the editing and revision process.“²⁸ The author should respect the stated standards of the publisher and ensure that the best possible version of the policy proposal is submitted to the publisher. Therefore, it is essential that the author of the policy proposal, before submitting the manuscript to the publisher, review the text of the policy proposal several times if necessary, especially the style, clarity, coherence, brevity, and language...

Numerous authors of policy proposals use another form of self-auditing, giving the text of policy proposals to third parties, most often their close associates. Their task, immediately before submitting the reader to the publisher, is to read and review the final version in detail and possibly make corrections. All of the above is part of the ways and forms of revising the text of the policy proposal before submitting it to the publisher.

After all the mentioned revisions have been made, the policy-proposal manuscript is officially submitted to the publisher for further processing. And in that part, publishers have their procedures and methods, so they often give their deadlines for submission, require the form of request (in person, by regular or registered mail, by electronic mail), require the number of copies, and the state. The editing and proofreading phase follows if the publisher accepts the policy-proposal manuscript. Editing implies „a process of collaboration and negotiation aimed at satisfying the author and the publisher.“²⁹ The editor's job is to ensure, through a process of cooperation and negotiation, the best possible manuscript of the policy proposal and give the final approval (decision) for publication. Suppose the policy proposal has yet to receive a positive opinion from the editor. In that case, the author can ask for a written or oral statement explaining why the policy proposal was rejected.

If the editor makes suggestions to improve and refine the policy proposal, it is essential to achieve constructive cooperation between him and the author of the policy proposal. The positive collaboration will enable a rational and reasoned dialogue. Based on such a dialogue, it is possible to ensure the satisfaction of the interests and goals of the authors and editors of the policy proposal.

6. CONCLUSION

Knowledge about essential provisions and characteristics of public policy is acquired through various research characterized by certain specificities. Relevant, scientifically valid, and reliable scientific knowledge about public policy is achieved through scientific research. In the process of acquiring scientific knowledge through scientific research on public policy, certain specificities and various and numerous

28 Ibid, str. 93.

29 Ibid, str. 100.

problems are evident, starting with specific preparatory work in the function of creating an applied (operational) research project, creating a scientific research project, realizing scientific research, and especially obtaining data, arranging and processing data and conclusions, preparation of reports on research and research results, presentation of scientific knowledge gained through the research in question and their application in science and social practice.

A research project as a scientific and operational document with multiple functions and parts is determined by conceptualization; it must agree with conceptual, theoretical, and methodological ideas. The public policy research project must be functionally consistent with the conceptualization of the research on a specific topic, the project task, and the conceptual outline of the research.

In the case of public policy research, it is necessary to create a scientific research project because the design of such scientific research results from fundamental analysis within the political science methodology. Therefore, it is essential to develop a scientific-research project as a complex scientific and operational document that is the basis of the concept of the phenomenon - the object of research and the process of scientific research.

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Ермин Х. КУКА

ДИЗАЈН ЗНАНСТВЕНОГ ИСТРАЖИВАЊА ЈАВНИХ ПОЛИТИКА КАО РЕЗУЛТАТ ТЕМЕЉНИХ ИСТРАЖИВАЊА У МЕТОДОЛОГИЈИ ПОЛИТИЧКИХ ЗНАНОСТИ

Резиме

Јавне политике представљају важан сегмент политичког и укупног друштвеног дјеловања усмјереног на доношење рационалних одлука којима се рјешавају бројни друштвено-политички проблеми грађана. То се дјеловање, превасходно, односи на државне владе и њихове потпорне агенције, уреде, службе. Јавним политикама се дјелује и утјече на људе и амбијент њихова живота, што је веома важно, али у неким аспектима и опасно, будући да је провођење јавних политика сусрет одабраних рјешења с конкретним друштвеним реалитетом. Због свог значаја, јавне политике су се развиле као посебна субдисциплина или специјалистичка дисциплина у оквиру политикологије. Кроз ову дисциплину политикологије стварају се нова знања којима се може утјецати на рјешавање низа јавних и колективних проблема. Јавне политике су, стога, примјењена дисциплина у оквиру политикологије, која има свој развијен предмет и метод истраживања. Истраживања јавних политика и предмет јавних политика су превасходно чиниоци методологије друштвених наука. Да би се могло истраживати јавне политике, неопходно је претходно утврђивање и откривање истраживачког проблема довољно подобног за истраживање. Заправо, то је уједно и прва фаза процеса стварања јавних политика, тј. модела циклуса јавних политика. Након тога, слиједи одређење врсте, тј. типа научног истраживања. То су, у коначници, предувјети приступања изради пројекта истраживања јавних политика и њихова истраживања. Када такав пројект прође провјеру ваљаности, слиједе теренска истраживања усмјерена на прибављање података, њихово сређивање, обраду и у коначници закључивање на основу њих. Истраживања јавних политика се завршавају израдом *полицу* студија (студије јавних политика) или *полицу* анализа (анализе јавних политика) у којим се наводе препоруке и примјена стечених научних сазнања у конкретној друштвеној пракси рјешавања проблема. Сврха и циљ овог истраживања ће бити сагледавање и елаборације комплетног процеса израде примјењеног пројекта научног истраживања јавних политика, који настаје кроз све битне етапе и фазе процеса научног истраживања у оквиру методологије политикологије. Све поставке о пројектовању научних истраживања у оквиру методологије политикологије важе и за пројектовање истраживања јавних политика. Пројектовање истраживања јавних политика у потпуности имплементира методологију опћег пројекта истраживања, уз мање специфичне прилагодбе, усклађене према карактеристикама и обиљежјима јавних политика. Будући да пројектовање научних истраживања јавних политика настаје као резултат фундаменталних истраживања у оквиру савремене методологије политикологије, то ће истраживање у оквиру наведене теме бити проведено уз примјену свих основних и опћенаучних метода истраживања, а за потребе емпиријског истраживања бит ће примјењена анализа (садржаја) докумената.

Кључне ријечи: пројектовање, научна истраживања, јавне политике, методологија политикологије.

*Detlev H. BAUMGARTEN**
Paris Lodron University Salzburg

NEW DEVELOPMENTS IN THE CARE SECTOR NURSING ROBOTS AND THEIR USE IN THE PATIENT ENVIRONMENT

Abstract: During recent time it has become clearer than ever that the topic of nursing care is growing more important with each year. As life expectancy continues to rise and the shortage of care staff is becoming more pressing, so-called „care robots“ seem like an ideal solution on first glance.

However, this new opportunity also poses many challenges. On an emotional level there is of course the issue of the missing human component that could lead to loneliness and uncomfortable situations due to the lack of empathy. From a legal point of view further complications arise, unresolved insurance-related contexts being the most prevalent as well as data protection. The issue of liability is to some extent already resolved as the blame would often lie with production or programming errors, which could be traced back to the manufacturers. However, much remains ambiguous, leading to a reluctance to invest in basic research programs on care robots.

All in all, there are still many questions in this field of global interest that are yet to be answered, be it from an ethical or a legal point of view. This paper will explore the different possibilities and directions this issue could take and discuss their potential outcomes with a special attention on the legal situation.

Key words: care robots, nursing, robotic assistance, empathy, patient, legal issues, basic research.

1. INTRODUCTION

1. The care sector is undoubtedly one of the central social issues of our time. As our population continues to age and too few nurses enter the workforce we must ask ourselves as a society how to best deal with this issue that is becoming more pressing with each year. It cannot be denied that the western world

* Attorney-at-Law, LL.M. Paris Lodron University Salzburg, appr. Compliance Officer - WIFI Vienna, Member of the Vienna Bar Association (VBA), Vienna, Austria, Member of the International Bar Association (IBA), London, England, baumgarten@db-ra.com

is becoming increasingly in need of some sort of solution for its aging population as the problem of the shortage of qualified nursing staff does not cease to grow. Solutions like importing care staff from abroad have proven themselves to solve this problem only on a short-term-basis and are not sustainable in the long run.¹ Additionally, issues like over-bureaucratisation, poor working conditions for caregivers and also personal concerns about who will take care of relatives or oneself in old age only add to the already delicate situation.²

However, at the same time robotic technology is becoming increasingly more advanced, offering solutions and assistance to problems in many aspects of life, from manufacturing and public transport to household chores like vacuum cleaning or lawn mowing. The very idea of a robot³ is to make human life easier in tasks that would otherwise be very time-consuming, costly or dangerous.⁴ Thus, some experts believe that also the care sector might benefit from digital innovations such as robotic assistance. This solution offers a lot of potential, but also doubt, scepticism and even mistrust – are robots really fit to tackle a task as essentially human as care?⁵

2. As of today, this question cannot yet be answered definitively, but tendencies are already showing. For that, one need looks no further than to the far east, Japan in particular. Having one of the oldest populations in the entire world with roughly a quarter of all people being over the age of 65, the country was forced even more than the west to find a suitable solution for its problem in the care sector.⁶ Thus, the concept of robotic caregivers has been established for quite some time now which seems to have become widely accepted.⁷ This may be attributed to a stronger cultural affinity for robots, but could also have something to do with simply having gotten more used to the concept.

This is very different from the public's perception of robots in western countries, which is far more negative. The reasons for that are cultural, going back to the myth of the golem and, later, romantic works in the 1800s reflecting

1 Levon Ambarzumjan (2019): „Können Roboter den Fachkräftemangel in der Pflege überbrücken?“, Science Factory, 20.

2 „Pflegeroboter und ihr Einsatz im Patientenumfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

3 The term robot is derived from the Czech/Slavic word *robota*, which means work or drudgery. Its Slavic linguistic root, „rab“, means „slave.“ The Czech writer Karel Čapek first referred to machine people as robots in the play „R.U.R.“ published in 1920.

4 Constantino Grasso, Issa Muraina (2018): „Challenges and advantages of robotic nursing care: a social and ethical analysis“, THE CORPORATE SOCIAL RESPONSIBILITY AND BUSINESS ETHICS BLOG.

5 „Pflegeroboter und ihr Einsatz im Patientenumfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

6 Constantino Grasso, Issa Muraina (2018): „Challenges and advantages of robotic nursing care: a social and ethical analysis“, THE CORPORATE SOCIAL RESPONSIBILITY AND BUSINESS ETHICS BLOG.

7 Noel Maalouf, Abbas Sidaoui, Imad Elhadj, Daniel Asmar (2018): „Robotics in Nursing: A Scoping Review“, *Journal of Nursing Scholarship* 591.

the fears of machines supplanting humanity in light of the industrial revolution. Those sentiments are still resonant to this day as visible by the constant warnings by western technical entrepreneurs and scientists like Bill Gates, Stephen Hawking and Elon Musk of the danger artificial intelligence may present to humanity. Elon Musk especially has been very critical about the progress of artificial intelligence, going even so far as to write an open letter to the United Nations to alert them of its danger and threat to humanity, warning of its potential trigger to a third world war.⁸

In East Asia this alarmist cultural attitude regarding robots and artificial intelligence does not exist and robots are generally viewed more positively. South Korea for example there has been a law establishing legal and ethical considerations on smart robots since 2016, defining a smart robot as a „*mechanical device which perceives its external environment, evaluates situations and moves by itself*“. This goes to show how East Asian countries have, to a point, already normalised the idea of co-existing with robots in our daily lives.⁹

In Germany on the other hand, only a quarter of the population can imagine being directly cared for by a robot. By consequence, the grand majority of 75 % would not feel comfortable with a robot taking care of them.¹⁰ This may have something to do with the portrayal of robotic technology in the media and the press, where care robots are still often viewed critically, tending to show only the potential downturns instead of highlighting the many chances and possibilities they may offer.¹¹

3. Despite the still very common scepticism directed towards robotic assistance in nursing care the demand for service robots as the umbrella term over care robots has been increasing. According to the International Federation of Robotics sales of service robots have increased by 39 % from 2016 to 2017. In that same year 8,5 million service robots have been sold for private use – a considerable amount given the relative novelty of this sort of technology and the aforementioned widely negative attitude towards it.¹²

4. There is also a fear of robots increasingly replacing humans, especially in jobs such as nursing and caring that partly require tasks that are inherent to the human condition such as establishing a personal connection and giving comfort.¹³

8 Pierre-Antoine Rizk (2018): „Artificial intelligence, transhumanism and law“, *Le droit et l'intelligence artificielle*.

9 Nathalie Nevejans (2016): „European Civil Law Rules in Robotics“ by the Directorate-General for Internal Policies 10 f.

10 „Pflegeroboter und ihr Einsatz im Patienten Umfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

11 „Pflegeroboter und ihr Einsatz im Patienten Umfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

12 Levon Ambarzumjan (2019): „Können Roboter den Fachkräftemangel in der Pflege überbrücken?“, *Science Factory* 28 f.

13 Noel Maalouf, Abbas Sidaoui, Imad Elhajj, Daniel Asmar (2018): „Robotics in Nursing: A Scoping Review“, *Journal of Nursing Scholarship* 591.

This fear however would only be grounded in reason if there was the genuine intent to completely replace human care staff with robotic technology, making qualified nurses expendable. Before diving into the debate on the topic of care robots it is crucial to establish that the prime goal of this concept is to merely assist human care staff as there are undeniably aspects of caregiving that require human empathy and connection, which is something a robot could not provide.¹⁴ Care robots have been defined as „robots that are to be deployed in hospitals, care institutions or in ambulatory care or are to be used by care staff or simply carry out activities that are meant to simplify the care and nursing of sick, disabled or elderly people.”¹⁵ Therefore, as evident in the very definition of care robots, the following paragraphs will examine the use of care robots solely under the perception of their assistance to humans rather than as a replacement.

5. Generally, we have to distinguish between assistance and telepresence robots as well as socio-interactive robots. Assistance robots are further differentiated into care assistance and personal assistance robots. Care assistance robots are meant to relieve nursing staff by taking over routine work such as cleaning, laundry and patient transfer, whereas personal assistance robots offer mental exercises to elevate the patient's quality of life. Socio-interactive robots are more advanced, being able to communicate verbally as well as non-verbally through special programming and simulating human behaviours.¹⁶ This requires a level of autonomy and intelligence that poses many ethical questions. Smart autonomous robots can be defined by the following characteristics: (1) inter-connectivity (ability to acquire autonomy), (2) self-learning, (3) physical support and (4) adaptation of its behaviours and actions to its environment. These characteristics are important to keep in mind when discussing the ethical and legal consequences that come with the idea of endowing robots with autonomy and intelligence.¹⁷

2. ADVANTAGES OF CARE ROBOTS

1. Taking care of an elderly or ill person includes a large variety of tasks and requires many different abilities, physically and mentally. While there certainly are new challenges every day, there are some tasks that can become rather repetitive and physically exhausting. Is it those fields of work where an assisting robot can be of help in the best and easiest way. Care robots are certainly well-equipped to carry out simple tasks such as household chores, moving bedridden patients, feeding and providing medical supply.¹⁸ Taking over those occupations would

14 „Robotics in Nursing”, Duquesne University School of Nursing, May 22 2020.

15 Shannon Vallor (2011): „Carebots and caregivers: Sustaining the Ethical Ideal of Care in the Twenty-First Century” 252 ff.

16 Milan Viktorias (2018): „Roboter in der Pflege. Ethische Aspekte und Fragen der Akzeptanz“ 8 f.

17 Nathalie Nevejans (2016): „European Civil Law Rules in Robotics” by the Directorate-General for Internal Policies 8.

18 „Robotics in Nursing”, Duquesne University School of Nursing, May 22 2020.

save a lot of time and energy for human caregivers, that might be put to better use in social and emotional support. Furthermore, by taking care of basic tasks and thus relieving the nurses of such, human caregivers have more time and energy to focus on advanced medical knowledge which leads to society gaining qualified medical staff.¹⁹

2. In terms of providing help from a medical perspective, it is without doubt that robots are better equipped than humans to save crucial information regarding medicals, thus avoiding fatal errors which can never completely be out ruled in human nurses. Additionally, there are some robot models that can measure and monitor a patient's vital signs and, in case of any alarming parameters, alert doctors for immediate action.²⁰

3. Also, unlike human's robots can be constantly available and are in no need for holidays, days off or even sleep. Thus the patient's family would not need to worry anymore about their loved one's well-being during the absence of the human nurse, as the care robot would be available and could alert help in case of an emergency.²¹ Robotic assistance for private use could additionally provide relief to both the patient and their family by delaying the necessity to move to a nursing home, which is oftentimes humiliating to the patient as many feel stripped of autonomy and dignity. Allowing a patient to stay home is also beneficial to their mental health as they would be able to remain in their familiar environment and the surroundings they have known perhaps for decades.²² Using a care robot and in consequence being able to stay in their own home would furthermore allow the patient to keep more of their independence and also relieve their family of caring for the patient themselves, which can be incredibly stress- and time-consuming.²³ On a more practical note, this would also save a lot of money for public health systems.²⁴

4. Furthermore, some care robots are programmed explicitly to stimulate the patient's mental activity which is especially helpful for people suffering from dementia.²⁵ Some robots can also offer entertainment by providing games,

19 Heba Soffar (2022): „Healthcare robotics, Nursing care robots review, types, advantages, disadvantages & uses“, Online Sciences.

20 Constantino Grasso, Issa Muraina (2018): „Challenges and advantages of robotic nursing care: a social and ethical analysis“, THE CORPORATE SOCIAL RESPONSIBILITY AND BUSINESS ETHICS BLOG.

21 Constantino Grasso, Issa Muraina (2018): „Challenges and advantages of robotic nursing care: a social and ethical analysis“, THE CORPORATE SOCIAL RESPONSIBILITY AND BUSINESS ETHICS BLOG.

22 Nathalie Nevejans (2016): „European Civil Law Rules in Robotics“ by the Directorate-General for Internal Policies 24.

23 Noel Maalouf, Abbas Sidaoui, Imad Elhadj, Daniel Asmar (2018): „Robotics in Nursing: A Scoping Review“, Journal of Nursing Scholarship 596.

24 Nathalie Nevejans (2016): „European Civil Law Rules in Robotics“ by the Directorate-General for Internal Policies 24.

25 Noel Maalouf, Abbas Sidaoui, Imad Elhadj, Daniel Asmar (2018): „Robotics in Nursing: A Scoping Review“, Journal of Nursing Scholarship 596.

sometimes also with a social component, help to relax and reduce stress and assist the patient in everyday tasks by identifying objects and moving the patient.²⁶

5. Last but not least, the aforementioned assumption that robots can solely perform mechanic tasks without the warmth and empathy of a human being is not entirely correct. Contrarily, studies have proven that social assistive robots, particularly those in form of a pet, have contributed to the patients' happiness which further improved their vital signs. This is especially helpful for children who are especially in need of emotional support as well as people in facilities where there are no real pets allowed.²⁷

3. DISADVANTAGES OF CARE ROBOTS

1. On first glance, it almost sounds too good to be true. The advantages do seem quite tempting – care robots taking over all the more tedious aspects of patient care while simultaneously providing additional benefits like entertainment and mental stimulation as well as calming the nerves of the patient's family by being available 24/7 and not even requiring pay, a day off, or even sleep.

2. However, with this perfect-sounding solution also come its problems, not only *practically* but also *socially*, *ethically* and *legally*. No matter how well-programmed the robot is, it is not a human being and can never replace one. Social isolation with increased dependence on the robot may thus occur. Additionally, there are still many questions yet to be answered from a legal point of view. This is particularly pressing in issues of consent from people who are no longer capable of giving consent due to their mental state of being as well as data protection.²⁸

3.1 Practical hurdles

First, However, the first issue to address is the very practical problem of a lack of funding and investing. With the legal situation being very uncertain as of today it should come as no surprise that there currently is a certain reluctance on the part of the developers of the devices to make grand investments into the care robot technology. For many manufacturers, the incalculable risk of liability and the possible return are not yet in an economically appropriate relationship. A clear answer to these questions is therefore crucial for the further development of the entire industry.²⁹

26 Heba Soffar (2022): „Healthcare robotics, Nursing care robots review, types, advantages, disadvantages & uses“, Online Sciences.

27 Noel Maalouf, Abbas Sidaoui, Imad Elhajj, Daniel Asmar (2018): „Robotics in Nursing: A Scoping Review“, Journal of Nursing Scholarship 592.

28 Noel Maalouf, Abbas Sidaoui, Imad Elhajj, Daniel Asmar (2018): „Robotics in Nursing: A Scoping Review“, Journal of Nursing Scholarship 596.

29 „Pflegeroboter und ihr Einsatz im Patientennumfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

Even in countries like Japan where the research on and the development of care robots is strongly supported and subsidised by the government most projects fail due to a lack of financing. As of today there is simply not yet enough knowledge and experience to safely determine the costs per unit of a care robot which is why it is extremely difficult to conduct a meaningful cost-benefit analysis. Only after a successful market entry and attractive marketing we can hope for a relative price stability for production and distribution.³⁰

But not only from an investor's but also from a care facility manager's point of view using this sort of mostly untested technology is not yet attractive enough. Reason for that is the task specialisation of the robots in relation to the costs. Moreover, as of today the devices' respective functions are limited to the abilities mentioned in the names of their respective subcategory. In order to really cover all conceivable tasks several different variants would have to be used, which would often fail due to financial hurdles. In concrete terms this means that care facilities must think carefully about the area for which they want to purchase a robot and whether the selected model can actually master the tasks involved.³¹ Nevertheless, some managers are generally open to the purchase of artificially intelligent helpers, since the relief of the human workforce is becoming an increasingly important factor in the expected development in the care sector.³²

Other, Human caregivers as stakeholders in this matter have been noted to be rather against the concept of care robots. This is understandable considering their fear of becoming irrelevant and losing their jobs, however, this perspective may change once learning that the robots would primarily assist them in their tasks, not replace them. In most cases, they would even provide relief in that they would handle the more tedious and repetitive aspects of care, allowing human caregivers to focus more on the social interaction with the patient.³³

3.2 Social and Ethical concerns

It is a common criticism in regard to robotic assistance in patient care that it is utilitarian, unethical and even dehumanising, excluding already vulnerable members of society from human interaction and reducing them to problems that machines are taking care of. Related to that concern is the argument that, as many point out, there is not yet a lot of experience of human-robot interaction on a long-term-basis. Thus, it would be irresponsible to leave the ill and elderly in that very new and uncertain situation like guinea pigs in a test lab.³⁴

30 Levon Ambarzumjan (2019): „Können Roboter den Fachkräftemangel in der Pflege überbrücken?“, Science Factory 39 f.

31 „Pflegeroboter und ihr Einsatz im Patientenumfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

32 „Pflegeroboter und ihr Einsatz im Patientenumfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

33 „Pflegeroboter und ihr Einsatz im Patientenumfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

34 “8 Ethical Issues In The Use Of Robots In Healthcare”, roboticsbiz.com, May 26 2019.

It is rather easy to argue against the latter critique that it is in the very nature of a new innovation that it is mostly untested and thus does not possess long-term experience. The first argument however is not entirely without merit and is connected to another ethical concern that is brought up frequently regarding the very real danger of the patient's social isolation. Loneliness and seclusion are unfortunately already rather prevalent among elderly people and the potential minimisation of human contact as a consequence of robotic care might further amplify this problem, even when the robot only assists a human caregiver.³⁵ The situation would be even more dire in cases where due to circumstances all tasks are inevitably performed by robots, leading to the patient lacking human interaction and consequentially loneliness and depression. As aforementioned, it is therefore crucial to ensure that care robots never replace human nurses but instead merely serve as assistance.³⁶

But even if a care robot only takes care of some basic everyday tasks it is possible that this leads to an increased dependence on the machine due to habit. This might make elderly people in particular feel like they are no longer in control of their lives, instead being utterly dependent on a technical device. It is important to prevent this from happening as it could increase the feeling of anxiety and depression in the patients, thus achieving the exact opposite of what is initially intended.³⁷

Another potential risk could be the lack of trust and ease the patients may have with the care robots. A patient's discomfort with being taken care of by a robot may affect their wellbeing and mental health, thus achieving the opposite effect of what the use of a care robot is all about. It is thus absolutely crucial to consider the patient's feelings about robotical assistance and to never force a person into this situation when they are very clearly not comfortable with it.³⁸ It has also been noted that personal choice on the matter is highly influential on the patient's attitude. If given an active choice, patients are noticeably more inclined towards the concept of care robots.³⁹ But even if a patient is still against the notion of being taken care of by a robot it is of utmost importance to respect that decision with all its consequences. We can therefore establish that everyone is entitled to refuse care from a robot as well as the principle of seeking consent of the person most involved in the situation.⁴⁰

35 „Pflegeroboter und ihr Einsatz im Patientenumfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

36 Constantino Grasso, Issa Muraina (2018): „Challenges and advantages of robotic nursing care: a social and ethical analysis“, THE CORPORATE SOCIAL RESPONSIBILITY AND BUSINESS ETHICS BLOG.

37 Levon Ambarzumjan (2019): „Können Roboter den Fachkräftemangel in der Pflege überbrücken?“, Science Factory 39 f.

38 Catherine Easton (2013): „Legal Issues for Healthcare Robots“, Robotics Business Review.

39 „Pflegeroboter und ihr Einsatz im Patientenumfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

40 Nathalie Nevejans (2016): „European Civil Law Rules in Robotics“ by the Directorate-General for Internal Policies 21.

While several criticisms go against the inherently mechanical nature of a robot and their inability to provide the same level of emotional and empathetic care as a human being, there is also another side of the coin to this.⁴¹ As already mentioned previously, there are robotic models in the socio-interactive category that, while of course not being able to actually feel human emotion and empathy, are specifically programmed to emulate and mimic them. This can be seen as deceptive and even dangerous when the patient develops a bond with the robot based on simulated emotion.⁴² That behaviour in intelligent robots is sometimes intended to invoke emotional reaction in the patients by their developers by making them as human as possible. The intention behind this is no doubt benevolent – the robots are meant to entertain and also to keep company to people who are lonely and may have no one else to talk to. As already established however, a robot, no matter how intelligent, can never replace a human – the emotions displayed by it are all essentially not real. If someone who is already lonely develops a bond with a robot based on feigned emotional attachment this would in the end be a cynical manipulation of an already vulnerable person.⁴³

But even in cases where there is no such programming the anthropomorphisation of robots may occur when the patient projects human qualities onto the robot, leading to a parasocial relationship. This is already concerning by its own, but made even more severe by the possibility of damaging or reprogramming of the robot, which may have a serious effect on the patient's well-being.⁴⁴

Speaking of programming, as long as artificial intelligence (which is a whole ethical discussion of its own) is not yet realistic in care robots, they are very limited in terms of how to react to or deal with an unusual or unforeseen situation. It may thus occur that in some cases a robot's reaction would be perceived as insensitive or even dangerous, thus affecting the patient's mental and physical well-being.⁴⁵

3.3 Legal issues

Legally, the concept of robotic assistance in patient care poses many new challenges and questions, particularly in terms of liability and data protection, but also insurance-related and, to an extent, the issue of potential rights for robots.

For a legal framework based on an ethics code on how to deal with this beforehand unknown relationship between human and robots there is the global tendency to be orientated onto the three robot laws, more precisely called as „*Three Laws of the Robotics*” created by Isaac Asimov in 1942, initially for a short

41 „Pflegeroboter und ihr Einsatz im Patientenumfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

42 „8 Ethical Issues In The Use Of Robots In Healthcare”, roboticsbiz.com, May 26 2019.

43 Nathalie Nevejans (2016): „European Civil Law Rules in Robotics” by the Directorate-General for Internal Policies 23 f.

44 Catherine Easton (2013): „Legal Issues for Healthcare Robots”, *Robotics Business Review*.

45 Heba Soffar (2022): „Healthcare robotics, Nursing care robots review, types, advantages, disadvantages & uses”, *Online Sciences*.

story: (1) *A robot shall not knowingly hurt a human being or let a human being be hurt by inaction.* (2) *A robot must obey commands given by a human unless it would go against Rule #1.* (3) *A robot must protect its existence as long as this does not collide with Rules #1 or #2.*⁴⁶ Later Asimov added a zeroth law standing above all the others: (0) *A robot may not harm humanity or allow humanity to come to harm by inaction.*⁴⁷ Simple as those rules seem, they may set useful guidelines for a more complex code to follow after.

*In fact, there are countries that have already drafted legislation or recommendations for a legislative proposal based on these rules. The Robot Ethics Charter from South Korea in its core aims to protect humans from robots and vice versa via following the rules first put forth by Asimov. The 2017 Resolution by the European Parliament also starts by citing those rules, thus proving its practical relevance to this day. Unbelievably, there is virtually no U.S. law regarding the legal status of robots.*⁴⁸

3.3.1 Product Liability

When addressing the issue of liability in robotic assistance, one must consider that many different parties are involved in creating, designing and using a robot, such as designers, manufacturers, programmers, medical staff and, in the end, the patients themselves, as improper handling can never be excluded.

The obvious framework to hold on to is product liability, which at this point is fairly well-established for all kinds of different situations. For example, in case of an error in programming or production or even a failure to warn of certain dangers that the use of a robot could bring, the accountability would, as in traditional product liability, lie with the manufacturer. The guideline to determine what can be expected from the robot as a product would as per usual be the industry standard.⁴⁹ So far, so familiar.

3.3.2 Liability in General

The situation becomes more complicated however when taking sophisticated artificial intelligence systems into account which build upon interactions with humans. This leads to a certain unpredictability and the issue of accountability may not seem so certain after all.⁵⁰ Some models develop independently on the basis of the interactions made with them. Theoretically, it can therefore not be ruled out that a negative behaviour of the machine has only arisen from the direct influence of a user. In this case of learned misbehaviour, the user could also be held liable.⁵¹

46 Isaac Asimov (1942): „Runaround“, Astounding Science Fiction.

47 Isaac Asimov (1983, 1985): „The Robots of Dawn, Robots and Empire“.

48 Pierre-Antoine Rizk (2018): „The legal status of robots in different countries“, *Le droit et l'intelligence artificielle*.

49 Catherine Easton (2013): „Legal Issues for Healthcare Robots“, *Robotics Business Review*.

50 Catherine Easton (2013): „Legal Issues for Healthcare Robots“, *Robotics Business Review*.

51 „Pflegeroboter und ihr Einsatz im Patientenumfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

In any case the legal situation is rather uncertain which is why it ought to be regulated separately from the traditional set of rules. It would probably be wisest to create liability exemptions for users and manufacturers, automatic compensation funds for efficiency and compulsory insurance provisions to avoid situations where the already vulnerable patient is drawn into burdensome and draining legal fights on accountability.⁵²

This leads to the question of insurance, which is also still largely unresolved. Currently, in only very few cases is the financing of individual models covered by health insurance. The basic obstacle to a higher share of financing is that the list of care aids and appliances is not geared to care robots. However, this adjustment is a necessary prerequisite for the health insurance funds to be able to cover the costs of the robots. The consequence is that, for the time being, an enormous amount of bureaucracy is associated with the financing of the robots.⁵³

The legal status of robots in terms of liability has however not been completely disregarded by lawmakers in the EU. The European Parliament has introduced a Resolution on Civil Law Rules on Robots in 2017 that discusses exactly these problems. It is to be kept in mind though that this resolution is not legally binding, containing recommendations for the European Commission only, and that so far no specific legal provision in this matter exists in the European Union (with the possible exception of the Machinery Directive 2006/42/EC and the Product Liability Directive 85/374/EEC).⁵⁴ In the resolution the European Parliament states that it is essential for the Commission to tackle the issue of liability first and foremost, suggesting to focus responsibility on the person who has it in their power to minimise the risk of damage and making sure that the responsibility is proportional to the robot's degree of autonomy.⁵⁵

3.3.3 Data Protection

Another important issue to consider when establishing a set of rules about the concept of robotic assistance in patient care is data protection. As already mentioned in the elaboration of the many advantages of care robots, there are some models who are able to collect and save relevant information about the patient such as vital signs and the medical situation. Collecting this very sensitive data is however not without problems of its own. For the patient's privacy not to be violated there has to be a certain set of rules and regulations for the recording and communication of data.⁵⁶

52 Andrea Bertolini (2017): „The legal issues of robotics”, Robohub.

53 „Pflegeroboter und ihr Einsatz im Patientenumfeld – Science Fiction oder realistische Unterstützung?”, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

54 Aida Ponce del Castillo (2017): „A Law on Robotics and Artificial Intelligence in the EU?”, Foresight Brief.

55 Pierre-Antoine Rizk (2018): „Civil Law Rules on Robotics”, *Le Droit et l'Intelligence Artificielle*.

56 Constantino Grasso, Issa Muraina (2018): „Challenges and advantages of robotic nursing care: a social and ethical analysis”, THE CORPORATE SOCIAL RESPONSIBILITY AND BUSINESS ETHICS BLOG.

The difficulty in this problem also lies in the nature of robots to only be able to develop further if they are given information and data. Conversely, this also means that a robot that is not given that data cannot develop according to the current state of the art. In relation to those in need of care the inevitable question arises of what data the robot may collect without being asked and in what cases it needs consent.⁵⁷

Related to that problem is the issue of patients who are not able to give consent due to their mental state of being. Particularly in situations where the person concerned is seriously ill, one is faced with the problem that consent may no longer be obtained in a reliable manner. There may also be uncertainty about who can and may give consent for this person as a proxy. Furthermore, there is also the question of how to prevent data from being accessed by unauthorised persons or deliberately passed on to third parties.⁵⁸ On how to tackle that problem is would probably be the most efficient to address it on a supranational level as the legal grounds for data protection have been widely standardised in the EU.⁵⁹

However, the interference with the right of data protection might be justified if it is necessary to protect goods that are to be valued higher. As some experts have argued *“if the invasion of privacy can be justified by better health or higher safety it is to be accepted.”*⁶⁰ Whether this is just or not will have to be determined once we have better practical knowledge of the risks and benefits that care robots bring with them.

3.3.4 Personal Rights of Robots

Last but not least we must face the fact that the more advanced robots become the more pressing becomes the uncomfortable issue of the attribution of personhood. This may at first seem like a purely philosophical and bioethical question but has real consequences for the treatment of robots in their use.⁶¹ While robots are of course not to be equated with humans, the question of whether they should be equipped with some set of right is not entirely absurd, especially when artificial intelligence is considered. There may need to come the point where laws are established to treat robots respectfully and ethically, perhaps similar to the status of animals.⁶²

There are however stances that go even further, introducing the idea of endowing technically advanced robots with personhood. While this may seem

57 „Pflegeroboter und ihr Einsatz im Patienten Umfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

58 „Pflegeroboter und ihr Einsatz im Patienten Umfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

59 Andrea Bertolini (2017): „The legal issues of robotics“, Robohub.

60 Sebastian Glende, Susann Klemcke, Christoph Nedopil (2020): „Risiken der Robotikakzeptanz – Identifikation und Entwicklung von Lösungsansätzen“.

61 Andrea Bertolini (2017): „The legal issues of robotics“, Robohub.

62 Catherine Easton (2013): „Legal Issues for Healthcare Robots“, Robotics Business Review.

radical at first, it is not completely out of the question when getting into the legal background of personhood. A person in the legal sense of the word is not, as many would assume, simply a human being, but actually a subject of legal rights and duties, which is why a company is legally considered a person. The key to giving an entity rights and duties is that behind that entity there are intelligence and will. While the will of a robot is bound to its programming, a machine with artificial intelligence is, as the name suggests, equipped with a level of intelligence that allows it to tackle complex tasks.⁶³

A study conducted by the European Parliament has concluded on this matter that a robot can never have rights or duties as those ideas are inseparably linked with human morals. Furthermore, giving a robot rights would in the end go against the idea of it as a machine designed to make human life easier.⁶⁴ On a national level it is worth mentioning however that in France there have been some efforts to bring the possible recognition of the legal personality of robots into discussion.⁶⁵

On the other side of the spectrum some even go so far as to suggest that intelligent robots ought to be given constitutional rights. This would be radical indeed as those rights have so far only been given to natural persons. However, while this notion may at first seem absurd it is already partly reality. The intelligent robot Sophia for example has been awarded citizenship of Saudi Arabia, which would previously have been unthinkable to extend to anything besides actual human beings.⁶⁶ What speaks against attributing such rights to robots is that, despite their intelligence, nevertheless still machines and thus lack consciousness, intentionality, feelings and a soul.^{67, 68}

4. CONCLUSION

1. Taking all of these difficult legal situations into account it seems incredibly complex to try to establish a legal framework for the use of robotic assistance in patient care. As already mentioned, regulations concerning the human-robot relationship with all its risks and benefits ought best be handled on a standardised European level with a set of rules. The European Union could set up the legal

63 Hartini Saripan, Nurus Sakinatul Fikriah Mohd Shith Putera (2016): „Are Robots Human? A Review of the Legal Personality Model”, *World Applied Sciences Journal* 826.

64 Nathalie Nevejans (2016): „European Civil Law Rules in Robotics” by the Directorate-General for Internal Policies 15.

65 Pierre-Antoine Rizk (2018): „The legal status of robots in different countries”, *Le droit et l'intelligence artificielle*.

66 Pierre-Antoine Rizk (2018): „Sophia, the first citizen robot of a state”, *Le droit et l'intelligence artificielle*.

67 The debate on the existence of a soul is of course a highly philosophical one and due to the intangible nature of the subject impossible to sustain with proof, nevertheless it ought to be mentioned here as it is part of the argumentation against attributing constitutional rights to intelligent robots.

68 Hartini Saripan, Nurus Sakinatul Fikriah Mohd Shith Putera (2016): „Are Robots Human? A Review of the Legal Personality Model”, *World Applied Sciences Journal* 826.

and ethic standards and be a role model for the rest of the world, if this regulation is done quickly. In fact it seems to be necessary to found an European Robotic Agency to make sure the issues at hand are dealt with in the most efficient and competent way.⁶⁹ On a European level it would also be seemly to have human dignity as the founding concept of all legal considerations on robotic assistance.⁷⁰

2. East Asian countries, Japan in particular, are already quite advanced on this subject, which is why it might be useful to observe their way of handling this subject. Currently the Japanese government is working on a code of ethics to warrant robot-friendly behaviour with emphasis on human safety. This code might set an example to western countries on how to best ensure that we treat robots ethically and respectfully while simultaneously putting human safety first.⁷¹

3. If we indeed choose to invest more in this possibility we need to collectively work together to make this project work as smoothly as possible. This would require training for nurses and medical staff to improve the cooperation between them and the care robots, as many human caregivers may fear that the robots may replace instead of assist them. It is also essential to familiarise people with robots from a young age as that would provide them with a better understanding of the concept. It has also become clear that the acceptance of artificial helpers is one of the central factors in dealing with the issue. Simply put, the use of such technology only works if it is wanted.⁷² Last but not least, we as a collective need to clearly define boundaries for the usage of care robots, not only legally but also socially and ethically.⁷³

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69 Andrea Bertolini (2017): „The legal issues of robotics“, Robohub.

70 Nathalie Nevejans (2016): „European Civil Law Rules in Robotics“ by the Directorate-General for Internal Policies 20.

71 Hartini Saripan, Nurus Sakinatul Fikriah Mohd Shith Putera (2016): „Are Robots Human? A Review of the Legal Personality Model“, World Applied Sciences Journal 828.

72 „Pflegeroboter und ihr Einsatz im Patientenumfeld – Science Fiction oder realistische Unterstützung?“, <https://www.24h-pflege-check.de/seniorenprodukte/pflegeroboter/>, accessed 29.09.2022.

73 Noel Maalouf, Abbas Sidaoui, Imad Elhadj, Daniel Asmar (2018): „Robotics in Nursing: A Scoping Review“, Journal of Nursing Scholarship 596.

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Детлев Х. БАУМГАРТЕН

НОВИ ДОГАЂАЈИ У СЕКТОРУ НЕГЕ
РОБОТИ ЗА НЕГУ И ЊИХОВА УПОТРЕБА
У ОКРУЖЕЊУ БОЛЕСНИКА

Резиме

Овај рад истражује изазове и могућности коришћења робота за негу као помоћ неговатељима болесних и старијих особа. Почевши од увођења проблема све већег недостатка медицинског особља са којим се данас суочавамо, представљено је и објашњено могуће решење робота за негу. Идеја би била да се роботи користе у пољима задатака која могу бити исцрпљујућа и понављајућа за особље за негу људи како би их растеретили ових послова и дали им више времена да се усредсреде на друштвени аспект неге. Надаље, разрађен је став према роботској помоћи, уз закључак да је на западу и даље прилично скептичан у односу на позитивнији у источноазијским земљама.

Као следећи корак наводи се и објашњава неколико предности робота за негу, укључујући, између осталог, поменути помоћ и њихову сталну доступност. Овај рад такође баца светло на недостатке робота за негу као што су практичне препреке које се тичу посебно финансијских потешкоћа, друштвених и етичких брига у вези са нпр. недостатком искуства са овом технологијом и пре свега недостајућа људска компонента која неизбежно долази са роботским медицинским сестрама. Коначно, посебан фокус је на правним питањима укљученим у ово решење, посебно на одговорност и заштиту података, али и са кратким излетом на спорну идеју о личним правима робота.

Кључне речи: роботи за негу, медицинска сестра, роботска помоћ, емпатија, пацијент, правна питања, основна истраживања.

*Марко М. ПАРЕЗАНОВИЋ**

Академия национальной безопасности, Белград

ПРИМЕНЕНИЕ АНАЛИЗА СОДЕРЖАНИЯ ДОКУМЕНТА В ИССЛЕДОВАНИИ ПОЛИТИЧЕСКИХ ПЕРЕВОРОТ

Резюме: Анализ содержания документов представляет собой чрезвычайно важный и незаменимый метод сбора данных при анализе политических потрясений как сложных политических явлений. Безусловно, при исследовании указанных форм нелегальной политической борьбы анализ содержания документов необходимо использовать в комплексе с другими методами исследования, в первую очередь из методологии политологии, чтобы результаты исследования были максимально объективными и полными. Таким образом достигается научная и социальная обоснованность исследования, которая нередко воплощается через превентивную составляющую, то есть защиту государства и общества от подобных деструктивных политических явлений. Однако исторически масштабы и последствия политических потрясений различны. При определенных социальных обстоятельствах они также были источником прогресса и процветания общества, открывая новые и более благоприятные социальные перспективы и горизонты. В силу названных выше причин одна из основных целей данной статьи связана с попыткой с помощью метода анализа содержания документов внести дополнительный вклад в своевременное распознавание форм политических потрясений и их системное выяснение на любой основе, если они реализуются в одном обществе или в государстве.

Ключевые слова: анализ содержания документов, фундаментальные исследования, методы сбора данных, политический переворот.

1. ВВЕДЕНИЕ

В методологической литературе нет единого определения анализа содержания,¹ что вполне объяснимо, учитывая разные цели и формы его использования. Отсутствие согласия в отношении определения процедуры

* Доцент, beogradbg15@gmail.com

1 О методе анализа содержания см. подробнее: Neđo Danilović, *Metod analize sadržaja dokumenata sa instrumentima*, Zadužbina Andrejević, Beograd, 2015.

определяется также ее применением в различных научных дисциплинах, а также развитием самой процедуры и видов эмпирического материала, к которому она применяется.² "В настоящее время его первоначальное название, анализ содержания, маскирует пестроту идей, подходов и приложений".³

Общее название в методологии – „анализ содержания документа“. У этого имени есть как минимум два недостатка. Во-первых, он настаивает на анализе как на единственном методе, хотя в процедуре проведения исследования очевидны индукция, обобщение и синтез. Они не аналитические. Выделение анализа как существенного положения метода может быть оправдано тем, что в основе концепции лежат аналитические процедуры - анализ и классификация. Идея „парсинга“, дробления содержания документов до сих пор является доминирующей в понимании методистов и исследователей. Однако это не является достаточным основанием для того, чтобы пренебрегать другими неаналитическими компонентами метода. Еще одна слабость названия заключается в том, что оно настаивает исключительно на содержании документа. Не отрицая важности возможного содержания документа, не следует пренебрегать формой, составом и другими свойствами документа (например, возрастом, происхождением). Они фигурируют во многих исследованиях как неизбежные носители данных и информации. Выделение содержания в названии может быть оправдано пониманием того, что все, что является осмысленным высказыванием о чем-либо и содержит данные, как неотъемлемая часть документа, является содержанием. Однако такое понимание содержания слишком широко.⁴

По вышеизложенным причинам метод определения обусловлен пониманием особенностей процедуры, а также возможностей ее применения, поэтому укажем наиболее важные определения этого метода. Несмотря на различия в понимании методов, на самом общем уровне существует согласие в том, что анализ содержания является наиболее подходящим, но не единственным инструментом изучения различных форм социальной коммуникации.⁵

2 Ole Holsti, Content analysis, Lindzey, Gardner and Elliot Aronson (eds.), The Handbook of Social Psychology, 2nd edition, Vol. 2, Research Methods Reading, MA: Addison-Wesley, 1968, взято из: Željka Manić, *Analiza sadržaja u sociologiji*, Čigoja štampa i Institut za sociološka istraživanja, Beograd, 2017, str. 17.

3 Stanislav Fajgelj, *Metode istraživanja ponašanja*, Centar za primenjenu psihologiju, Beograd, 2010, str. 405, взято из: Željka Manić, *Analiza sadržaja u sociologiji*, Čigoja štampa i Institut za sociološka istraživanja, Beograd, 2017, str. 17.

4 Slavomir Milosavljević i Ivan Radosavljević, *Osnovi metodologije političkih nauka – peto izdanje*, Službeni glasnik, Beograd, 2013, str. 556.

5 Vojin Milić, *Sociološki metod*, Zavod za udžbenike i nastavna sredstva, Beograd, 1996, preuzeto из: Željka Manić, *Analiza sadržaja u sociologiji*, Čigoja štampa i Institut za sociološka istraživanja, Beograd, 2017, str. 17.

Метод анализа содержания а позволяет сделать выводы, чтобы получить точные и объективные данные.⁶ Это метод качественного и количественного изучения содержания с целью получения достоверной информации о социальной реальности. Чаще всего это реализуется путем выделения определенных частей текста, которые нужны для анализа, а с появлением и развитием Интернета этот метод приобрел дополнительное значение.⁷

Анализ содержания является важным или, скорее, необходимым методом исследования для любого более сложного изучения социальных явлений, процессов и отношений. Однако ради научной истины следует указать, что для того, чтобы этот метод был научно обоснованным по своему характеру и содержанию, нужно всегда стремиться (и осознавать) в операционализации трактовать различные потоки символических общение как неотъемлемая, достаточно органичная часть социальной деятельности, процессов и взаимоотношений. Только таким образом анализ содержания, независимо от того, является ли он косвенным и/или непосредственным, то есть анализом явного и/или скрытого содержания, может быть надежным и научно плодотворным инструментом исследования социальных явлений, процессов и отношений. Особая сила анализ содержания а относится к письменным сообщениям, имеющим более постоянный характер и для современного общества, суть которых заключается в упорядоченном и контролируемом общении. И можно ли исключить из всего невербальное общение, безмолвный дискурс? Ответ современной социальной мысли – нет. А именно, по результатам анализ содержания а усваивается организация информации (применение вновь полученных знаний к уже имеющимся), коммуникации (суть беседы, диалога, культура поведения и т. передача социального детерминизма, то есть связь между нашим прошлым, настоящим и анонсированным будущим. Поэтому анализ содержания является незаменимым методом получения данных об обществе, социальных явлениях, процессах и отношениях, в которых происходит расширение массового сознания и его формирование через содержание общения. На основе методов анализ содержания а указываются более широкие социальные условия человеческого общения, информации и передачи - они выявляются как целостные социальные структуры, что позволяет сделать более точные и верные выводы об общественной жизни в целом.⁸

Метод анализ содержания а входит в состав научного исследования по следующим критериям: 1) общие - включают в себя совокупность явлений, процессов, отношений и всю совокупность пространства и времени,

6 См. также: Лариса Николаевна Федотова, Анализ содержания - социологический метод изучения средств массовой коммуникации, Российская академия наук – Институт Социологии, Москва 2001, s. 5;

7 Надежда Виторовна Ефимова, *Контент-анализ как метод исследования интернет-контента*, Белорусский государственный университет, Минск, 2015.

8 Milan I. Miljević i Vladimir Ilić, *Analiza sadržaja u socijalnoj delatnosti*, Socijalna politika, broj 1/2018 vol. 53, Beograd, 2018, str. 42.

в котором они протекают; специальные - охватывают только один отрезок явлений, процессов и отношений и только на одном отрезке пространства и времени; индивидуальные - включают только одну составляющую явления, процесса, отношения в строго определенную единицу времени и пространства; 2) свойства предмета: эмпирические - те, что связаны с познанием социальной действительности на основе опытных, чувственных данных; теоретические - они основаны на выраженном тем или иным образом - в той или иной форме мнении об уже существующих научных знаниях. Однако, поскольку не бывает чисто эмпирических и чисто теоретических исследований (в силу связи и взаимообусловленности теории и практики), правомерно говорить о: преимущественно теоретических (теоретико-эмпирических); преимущественно эмпирический (эмпирико-теоретический); сложный - равномерное участие теоретического и эмпирического; 3) масса явлений, процессов, отношений в: исследованиях, предметом которых являются массовые явления, процессы, отношения и массовые исследования; 4) время включает в себя одно явление (один процесс, одно отношение); продольные - включают несколько временных интервалов одного явления, процесса, отношения; трансверсальные - имеют дело с пересечением явлений (процессов, отношений) на одном временном отрезке, а панельные исследования касаются либо пластов, либо одних и тех же вопросов в различных временных интервалах одного и того же предмета исследования на одних и тех же или сходных выборках; 5) принадлежность к науке, то есть к научным дисциплинам; мультидисциплинарность – предмет исследования принадлежит нескольким дисциплинам, относящимся к двум и более наукам; междисциплинарный – предмет исследования принадлежит нескольким дисциплинам одной науки; междисциплинарный - предмет исследования относится к одной дисциплине одной науки; 6) актуальность предмета: реконструктивный - предмет исследования составляют события; текущий - предметом исследования является современное явление (процесс, отношение), являющееся частью современной текущей жизни; прогнозируемый - предметом исследования является отдаленное или ближайшее будущее. Речь идет и о прогностических исследованиях, и о комбинированных исследованиях, предметом исследования которых является прошлое, настоящее и будущее одновременно; 7) отношение субъекта и объекта к объекту исследования: интроспективное - объект - объект исследования четко разграничены и субъект - исследователь, исследующий определенный объект исследования, интроспективное - субъект и объект исследования. исследования носят комплексный характер, т.е. предмет исследования есть в то же время сам себе объект исследования, потому что исследует самого себя; 8) научные цели: ориентировочная - ориентировать исследование с его результатами как в постановке проекта, так и в реализации исследования; описательные – для описания процесса, явления, отношения; классификация - произвести классификацию или типологию объекта исследования, определить важные признаки объекта

исследования и на их основе определить его место в определенном порядке; инновационно-эвристическая - направлена на выявление неизвестных, не выявленных факторов, свойств и отношений объекта исследования или моментов и стадий его изменений и форм проявления; экспликативный - научное объяснение явлений (процессов, отношений): причинно-следственных связей, закономерностей, закономерностей и т. д. и прогностический - научное предсказание движения и развития явлений, процессов и отношений в ближайшем или отдаленном будущем; 9) цели: эвристическая - направлена на получение совершенно новых знаний о ранее неизвестных измерениях, формах, структурах, свойствах и отношениях объекта исследования, и верификационная - направлена на проверку имеющихся научных знаний; 10) исследования в развитии науки или роль научных исследований в науке: фундаментальные исследования - ориентированы на фундаментальные, важные научные знания, касающиеся развития науки и, прежде всего, научной теории; прикладные исследования - стремятся обработать научные знания научной теории, то есть унифицированные и систематизированные знания фундаментальных исследований с целью определения возможностей их практического применения; научно-исследовательские разработки - дальнейшая разработка и совершенствование практических решений прикладных исследований, а исследовательские действия - решение конкретной актуальной проблемы на основе научных знаний; 11) сложности: к ним относятся вопросы - общие и подробные; количество методов, использованных при сборе данных: полиметод и монометод; сложности исследовательских проектов: простые - только с одним уникальным проектом, с одним сложным проектом и несколькими подпроектами, с общим проектом, в рамках которого имеется несколько специальных проектов и внутри них подпроектов; сравнительные исследования и панельные исследования - включают несколько слоев и могут повторяться несколько раз в разное время на одной и той же или идентичной выборке исследования одного и того же субъекта и с использованием одних и тех же методов; продолжительность исследования: мгновенное исследование; краткосрочные - длительностью до трех месяцев; среднесрочные - длятся от полугода до года; долгосрочные - продолжительностью более одного года и постоянные - многократное повторение исследований по одной и той же теме (чаще всего глобальных), поэтому они очень схожи с панельными, т.е. лонгитюдными исследованиями, а также в: тематическом анализе, методологии обоснованной теории, феноменологические методы, дискурсивная психология, нарративная психология, анализ дискурса, методы визуального применения.⁹

Из всего вышеизложенного следует, что анализ содержания документов является незаменимым, проникающим и надежным оперативным методом сбора данных о прошлых, настоящих и будущих социальных явлениях,

9 Milan I. Miljević i Vladimir Ilić, *Analiza sadržaja u socijalnoj delatnosti*, Socijalna politika, broj 1/2018 vol. 53, Beograd, 2018, str. 30.

территориально и во времени близких, но и очень далеких социальных явлениях, процессах и отношениях.¹⁰ Однако следует иметь в виду предупреждение Станислава Файгеля о том, что „единицы наблюдения... при анализе содержания документов весьма специфичны”. Это не люди, а человеческие продукты, и такие продукты, которые являются носителями информации, т.е. носителями символов (еще более конкретно единицы наблюдения в анализ содержания е называются единицами анализа;) Очень большое количество человеческих продуктов можно сказать, что они несут информацию о людях и человеческом поведении, то есть служат для передачи такой информации от производителя к потребителю. Во-вторых, сбор данных в анализ содержания е полностью свободен от вмешательства в наблюдаемое явление. Можно анализировать старые книги и архивы, записывать политические выступления по радио или телевидению или стенограммы интервью, опубликованные гораздо раньше. Следовательно, анализ содержания может быть выполнен на вторичных данных, тех, которые не были собраны исследователем - архивы, коллекции, каталоги и тому подобное. В-третьих, анализ полученных результатов, например, интерпретация частот, вхождений слов, качественный анализ контекстов, в которых появляются слова, интерпретация результатов многомерного анализа и т. д., специфичны для целей исследования анализа содержания.¹¹

Это означает, что непосредственным объектом исследования с помощью анализ содержания а может быть любой фактор, часть или целое социальное явление, его качественное или количественное свойство и тому подобное, если оно каким-либо образом зафиксировано. В этом смысле анализ содержания выступает в сотрудничестве с другими методами:

- метод наблюдения - один из самых распространенных и древнейших способов приобретения фактов - составляет ядро сущности способа приобретения опыта и всех его различных видов - это общий способ контакта, общения с внешним миром мира, т. е. относится к проявленным, выраженным привычкам этого мира, и на сегодняшний день из всех процедур сбора фактов имеет одну из наиболее развитых структур – будь то непосредственная (прямая) или косвенная (косвенная), с участие, индивидуальное или массовое, разовое или постановочное;
- метод эксперимента: чистый или реальный эксперимент и квазиэксперимент, лабораторный или социометрический, то есть эксперимент в естественных условиях, натурный эксперимент или последующий эксперимент;

10 Aleksandar Halmi, *Metodologija istraživanja u socijalnom radu – kvalitativni i kvantitativni pristup*, Alinea, Zagreb, 2001, str. 111, взято из: Milan I. Miljević i Vladimir Ilić, *Analiza sadržaja u socijalnoj delatnosti*, Socijalna politika, broj 1/2018 vol. 53, Beograd, 2018, str. 32.

11 Stanislav Fajgelj, *Metode istraživanja ponašanja*, Centar za primenjenu psihologiju, Beograd, 2007, str. 380, взято из: Milan I. Miljević i Vladimir Ilić, *Analiza sadržaja u socijalnoj delatnosti*, Socijalna politika, broj 1/2018 vol. 53, Beograd, 2018, str. 32.

- метод историографии: историография внешней критики или историография внутренней критики как простой историографический синтез или сложный (комплексный) историографический синтез на основе анализа письменных источников, устных источников и других источников;
- сравнительные методы: сравнения внутри определенного общества, внутри разных обществ одного типа и внутри человечества в целом, которые могут касаться одних и тех же или разных типов явлений, таких как: социальные, экономические, психологические, правовые, политические, культурные и т.д.;
- метод интервью (устная научная беседа) и метод опроса (письменная анкета) в: свободной или закрытой, организованной или неорганизованной, объективной или субъективной, мелкомасштабной или крупномасштабной, одномерной или углубленной, одновременной или повторной, легкой, нейтральной или строгий личный или групповой;
- статистический метод: при определении среднего значения или отклонения от среднего значения, при указании отношений между социальными явлениями, по количественным свойствам, таким как коэффициенты корреляции, и качественным свойствам, таким как коэффициент случайности, а также по временной динамике явлений: по тренду и/или вариациям и/или ковариациям;
- по методу кейс-стади - к относящимся к формальным институтам - организациям (официальным) и неформальным институтам - организациям (неофициальным), к стихийно созданным и преднамеренно созданным в целях научного опроса; и рассматривать одно дело или рассматривать несколько дел;
- метод личных документов (биографический метод, «жизненная история»): метод историй жизни на основе официальных документов и/или метод историй жизни на основе личных записей респондентов, метод личных документов, касающихся общей жизни респондента и (или) методом личных документов, относящимся только к отдельным аспектам его жизни и проблемы, и методом личных документов, создаваемым независимо от этих потребностей;
- этнометодологический метод: на ограниченный и неограниченный тип этнометодологии и на этнометодологию прямого и косвенного воздействия;
- социометрический метод: в социометрическом предпочтении и/или социометрической конфигурации, а также в т.н. "психодрамы" и "социодрамы";
- методом проекции: в процессе самопроекции и/или проецирования другого через себя, а также методом субъективной проекции и/или социально обусловленного - субъектно-объективным и социально обусловленным методом проекции;

- межкультурный метод: с методом ограниченного типа и/или с методом более широких требований, а также с методом, который берет только определенные культуры, и с методом, который берет человеческую культуру в целом;
- методом интроспекции: основанные на особенностях непосредственного опыта и опосредованного или критического опыта, а также интроспекция переживаний и интроспекция личностных черт;
- методом исследования действием: методом ограниченного и неограниченного знания, а также методом одностороннего приложения в поведении респондентов и методом многостороннего приложения их отношений в целом.¹²

Кроме того, важно отметить, что анализ документов в политической науке является необходимым и незаменимым, проникающим и надежным оперативным методом сбора данных о прошлых, настоящих и будущих явлениях, о территориально и во времени близких, но и очень далеких явлениях.¹³

2. ПОЛИТИЧЕСКИЕ ПАРЫ КАК ПРЕДМЕТ МЕТОДОЛОГИЧЕСКОГО АНАЛИЗА

Нередко в настоящее время термин „политический переворот“ часто употребляется вскользь и в просторечии для описания какого-либо социального процесса, относящегося, прежде всего, к внезапной смене политических или правящих структур, а иногда и к радикальному повороту политической деятельности.¹⁴ Еще чаще политический переворот отождествляют с переворотом, что, конечно, абсолютно неприемлемо с научно-теоретической точки зрения, так как это совершенно разные термины как по структуре и формам проявления, так и по общесоциальной артикуляции. В самом широком смысле политический переворот представляет собой внезапное и резкое изменение политического устройства страны,¹⁵ которое может вызвать определенные последствия в рамках существующих общественных отношений. Эти последствия, а точнее эффекты, могут быть положительными или отрицательными, от чего напрямую зависит, будет ли изменение носить прогрессивный или регрессивный характер. Это особенно подчеркивается, поскольку нередко

12 Milan I. Miljević i Vladimir Ilić, *Analiza sadržaja u socijalnoj delatnosti*, Socijalna politika, broj 1/2018 vol. 53, Beograd, 2018, str. 33.

13 Slavomir Milosavljević i Ivan Radosavljević, *Osnovi metodologije političkih nauka – peto izdanje*, Službeni glasnik, Beograd, 2013, str. 560.

14 Подробнее о политических потрясениях см.: Marko Parezanović, *Politički prevrat – savremeni pristup*, Nova srpska politička misao, Beograd, 2013.

15 При изучении политических структур страны важно также анализировать политические партии. По вышеуказанным причинам см. подробнее: Uroš Šuvaković, *Metodološke studije o pitanjima sociološkog proučavanja političkih partija*, Filozofski fakultet Univerziteta u Prištini sa privremenim sedištem u Kosovskoj Mitrovici, Kosovska Mitrovica, 2011.

случаи, когда термин „переворот“ часто ассоциируется с насилием и кровопролитием как его неизбежными побочными эффектами. Политические потрясения включают революции, перевороты, перевороты, политические перевороты и вооруженные восстания.¹⁶ Однако важно подчеркнуть, что переворот может быть осуществлен и мирным, ненасильственным путем. Наибольшее количество политических потрясений за последние тридцать лет осуществлялось ненасильственными методами и средствами, за исключением сельской местности, где у власти находились абсолютистские диктатуры и где уровень развития общественных отношений не позволял проявиться даже в общих чертах любые формы демократических отношений и современного устройства общества.¹⁷ Исключение составляет государственный переворот на Украине в 2014 году, который начался как ненасильственный, а реализовался как крайне насильственный.

Подрывная деятельность относится к наиболее распространенным формам нетрадиционных операций. С их помощью подрывается и ослабляется политическая, военная, экономическая и моральная мощь той или иной страны, с целью создания условий для свержения законной власти нелегально - секретными методами.¹⁸ К ним относятся разведывательная деятельность на чужих территориях, подготовка и проведение или даже подстрекательство к революционным действиям в других странах, понимаемые под покровительством и в соответствии с политическими целями силы, ведущей специальную войну,¹⁹ организацию и проведение диверсионных акций, организацию террористических и партизанская деятельность, вербовка и подкуп высокопоставленных государственных чиновников, тайная помощь оппозиционным силам в захвате власти и многое другое.²⁰

Насколько будет достигнут дальнейший прогресс общества, условий жизни, уровня всех социальных классов по прежней модели, обеспечим

16 О вооруженном восстании см. подробнее: Miodrag Gordić i Goran Matić, *Oružana pobuna*, Vojno delo, Beograd, 2011, vol. 63, br. 3, str. 117-137.

17 Marko Parezanović, *Uloga obaveštajnih službi u političkom prevratu*, Kultura bezbednosti u 21. veku-Zbornik radova, Kultura polisa-posebno izdanje, Novi Sad i Kriminalističko-policijska akademija, Beograd, 2004, str. 385.

18 Сегодня в большей, чем прежде, мир сталкивается с реальностью порабощения стран и народов господствующими державами не только средствами и методами ведения войны и обычной дипломатической деятельности, но все чаще факторами, действие которых характеризуется в высшей степени криминогенного содержания. В первую очередь это относится к подрывной деятельности агрессивных спецслужб. Это происходит от того, что творцы агрессивной внешней политики считают их применение в данных условиях наиболее целесообразным, так как обычными средствами эффективно принудить атакуемую сторону к безоговорочному подчинению часто не удастся, Milan J. Mijalkovski i Veselin B. Konatar, *Neobaveštajna rovarjenja obaveštajaca*, Prometej, Novi Sad, 2010, str. 14.

19 Когда речь идет о специальной войне, важно подчеркнуть, что доктрина специальной войны была сформулирована не спецслужбами и не участвует в ее реализации, а политическим руководством в зависимости от развития международных отношений, Dušan Vilić i Milan Ateljević, *Specijalni rat*, Poslovna politika, Beograd, 1986, str. 107.

20 Dušan Vilić i Milan Ateljević, *Specijalni rat*, Poslovna politika, Beograd, 1986, str. 131.

ли мы лучшее будущее или улучшим его путем потрясений, насколько мы будем умны, не будучи умными, это зависит от нашего ума и разума. Может быть, даже лучше было бы сказать, что это зависит от ума и разума всех тех, кто думает о переворотах, и в основном тех, кто легитимен, готов их подавить. Условия, вызывающие потрясения, подобны приливам: они приходят и уходят незаметно и всегда удивляют тех, кто непосредственно и наиболее затронут ими. Вот почему в правовом государстве и интеллектуальной политике самым мощным средством неприятных неожиданностей является публичная политическая дискуссия о соотношении практической политики и позитивного права и демократического, ненасильственного, разрешения конфликтов, основанного на правосознании современных людей.²¹

Политические потрясения, как показала история современного общества, могут быть как положительными, так и отрицательными в ценностном отношении, с разными политическими и социальными масштабами и последствиями. Отдавая предпочтение демократическим средствам в революционном процессе, создаются условия для обеспечения демократии путем отождествления самых широких слоев граждан с институтами, действиями и полезными действиями конкретного современного общества. В то же время демократические источники власти в обществе необходимы, а автократическая власть является серьезной аномалией современного демократического общества. Уничтожение демократических источников власти – большая опасность, одним словом, лобби хаоса. В этом лобби создаются условия для «некоторого действия», и то, каким будет это действие, зависит от соотношения сил, угрожающих конституционному строю. Преуменьшение и принижение функций, установленных конституцией, если это демократическая конституция, также является формой ползучего переворота, и это известно в политической истории. По вышеуказанным причинам механизмы защиты конституционного строя должны иметь развитый смысл в процессе познания того «ползучего хаоса», который создает благоприятную социальную среду для возможных угроз конституционному строю и демократическому устройству общества.²²

3. АНАЛИЗ СОДЕРЖАНИЯ ДОКУМЕНТА В ИССЛЕДОВАНИИ ПОЛИТИЧЕСКИХ ПЕРЕВОРОТ

Социальные движения, сопровождающие такое сложнейшее политическое явление, как политический переворот, многоаспектны и весьма сложны, обусловлены множественными причинно-следственными связями и факторами.

21 Jovan Marjanović, *Teorija politike*, Univerzitet u Beogradu, Beograd, 1996, str. 244.

22 Marko Parezanović, *Radoslav Ratković život i delo – međunarodni tematski zbornik*, Udruženje nauka i društvo, Beograd, 2014, str. 357.

По вышеизложенным причинам для достижения адекватного понимания политических потрясений, прежде всего в направлении предупреждения этих негативных и вредных политических явлений, необходимо активизировать все механизмы фундаментальных исследований, ибо только через научное познание этого комплекса и опасным общественным явлением можно предотвратить все негативные события, последствия, вытекающие из него. Однако здесь следует быть осторожным, поскольку нередко определенные политические изменения, происходившие после осуществления той или иной формы политического переворота, несли с собой прогресс в определенном обществе или государстве. Учитывая тему данного исследования, мы остановимся не на последствиях и масштабах политических потрясений, а на конкретном соотношении предметного метода исследования и упомянутого явления.

В политических исследованиях выделяют два основных типа источников данных: во-первых, субъекты политической деятельности с их вербальным и реальным поведением (высказываниями и действиями); во-вторых, документы, которые как произведения субъектов были созданы в прошлом или находятся в процессе создания. В этом смысле мы классифицируем документы на: научные - научные произведения, публицистические - в том числе произведения искусства, информационные - средства общественной информации, действия - программы и планы, пропагандистские - все формы и средства пропагандистских форм, записи - все виды записей, бухгалтерия и тому подобное, нормативно-правовые акты, делопроизводство - договоры, протоколы и др. Документы можно классифицировать по-разному, и эта классификация также может изменяться и расширяться. Однако, поскольку все предыдущие классификации относятся и к документам, с точки зрения исследовательских нужд такое разграничение документов целесообразно.²³

При анализе документов в контексте политических потрясений особое внимание следует уделить политическим документам как специфическому источнику данных в политологических исследованиях.

В этом смысле все создаваемые в политическом процессе документы, содержание которых составляют сообщения о субъекте и политическом процессе, являются в самом широком смысле политическими. Это означает, что документ создан в ходе политического процесса, что он сам является продуктом политической деятельности, что он является инструментом политической деятельности, т.е. что его содержанием является определение, осуществление и контроль политики.²⁴

Очень важно обращать внимание на достоверность документов и их источников. Сложность заключается в том, что политические потрясения

23 Slavomir Milosavljević i Ivan Radosavljević, *Osnovi metodologije političkih nauka – peto izdanje*, Službeni glasnik, Beograd, 2013, str. 487.

24 Slavomir Milosavljević, *Omladina u političkom procesu*, Istraživačko-izdavački centar SSO Srbije, Beograd, 1987, str. 265, preuzeto iz: Slavomir Milosavljević i Ivan Radosavljević, *Osnovi metodologije političkih nauka – peto izdanje*, Službeni glasnik, Beograd, 2013, str. 488.

представляют собой поле нелегальной политической борьбы, а найти конкретные документы сложно и почти невозможно не только в силу того, что они большей частью находятся в архивах спецслужб и других смежных учреждений, поэтому добраться до них для подавляющего большинства исследователей практически невозможно, а если и возможно, то ограничено определенными формальными и юридическими препятствиями к их публикации.

С другой стороны, сложность заключается в том, что политические перевороты незаконны, а любое создание и оставление письменных следов в виде различных документов само по себе наказуемо по категории преступных деяний, связанных с созданием угрозы конституционному строю.

Однако, несмотря на упомянутые препятствия, анализ содержания документов все же может внести весомый вклад, прежде всего в анализ факторов и причин, способствовавших созданию подходящей социальной среды для реализации упомянутой антиконституционной деятельности. Эта социальная среда ограничивается различными факторами, которые обычно носят политический, военный, экономический, социальный и религиозный характер, а также факторы безопасности. Конечно, перечисленные факторы не являются окончательными и обусловлены также климатом, в котором происходит политический переворот, ибо каждая область имеет свои особенности, а потому характерные социальные противоречия.

Ловушка для любого исследователя феномена политических потрясений посредством анализа содержания документов чаще всего содержится в "фальшивых" документах, которые зачастую расставляются с целью сокрытия реальных мотивов, действующих лиц, их индивидуальной роли, но прежде всего привлечение определенных международных образований (иностранные государства и их спецслужбы, неправительственные организации, международные институты, международные военно-политические союзы, транснациональные компании и др.). Упомянутое размещение документов, пожалуй, правильнее сказать дезинформация, всегда делается всеми сторонами, вне зависимости от роли и участия, потому что такие мероприятия почти всегда используются для каких-то новых времен и новых процессов, конечно каждая сторона со своей угол.

При анализе содержания документов, даже если они полностью заслуживают доверия, даже тогда их не следует принимать полностью и некритично. Возникает вопрос, какую ценность имеет официальный документ официального учреждения, если он изначально не был создан объективно и правдиво. Кроме того, очень важно провести соответствующий анализ содержания нескольких разных документов, желательно из нескольких разных и не связанных между собой источников, т.е. создателей. Таким образом, путем анализа и сравнения можно сделать некоторые полезные выводы и дополнить картину исследования, а значит, лучше реализовать задачу проекта.

4. ЗАКЛЮЧИТЕЛЬНЫЕ СООБРАЖЕНИЯ

Применение анализ содержания а документов в исследовании политических переворотов, хотя на первый взгляд и может представлять собой метод из корпуса, условно говоря, более простой и менее требовательный, чем, скажем, оценка и анализ данных, экспертиза или создание инструментов исследования, чувствительность такого предмета исследования, как политические перевороты, наводит нас на особую осторожность.

Проблема исследования приобретает дополнительную сложность, если прогнозирование часто рассматривается как неотъемлемая часть отчетов об исследованиях и результатов исследований. Это чрезвычайно ответственный процесс, и суть прогнозирования в рассматриваемом случае почти всегда сводится к тому, есть ли основания, то есть подходящая социальная среда для осуществления той или иной формы политического переворота, а также последствия в масштабах этой незаконной формы политической борьбы, если она имеет место.²⁵

В любом случае при проведении исследований важно придерживаться всех принципов методологии, а при анализе содержания документов необходимо позаботиться о правильном использовании всех форм, то есть приемов при их анализ. Также особое значение имеет правильное соблюдение всех процедур при применении методов анализа документов.

Наконец, что не менее важно, только объективный и беспристрастный научно-методологический подход при исследовании политических потрясений может дать результат, который будет оправдывать научные и социальные цели исследования. В наибольшей степени это обусловлено строгими и четко определенными методами и методическими приемами, лишенными повседневного политического или любого иного контекста, который мог бы исказить результаты исследования. А известно, что без реальных результатов нельзя делать правильные выводы и делать адекватные прогнозы, а с точки зрения защиты конституционного строя в вихре сложных политико-безопасных и всех других событий, сопровождающих современное общество, сегодня имеет существенное значение для выживание народа и государства.

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25 По этой теме подробнее см.: Miodrag Gordić, *Modelovanje kao metoda prognostiranja savremenog sistema bezbednosti*, Nauka i budućnost, Međunarodno udruženje metodologa društvenih nauka, Beograd, 2016, str. 275-303, kao i: Neđo Danilović, Miodrag Gordić i Srđan Blagojević, *Savremeni sistemi bezbednosti*, Zavod za udžbenike, Beograd, 2015.

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Marko M. PAREZANOVIĆ

APPLICATION OF DOCUMENT CONTENT ANALYSIS IN THE RESEARCH OF POLITICAL COUPHTS

Summary

Document content analysis represents an extremely important and necessary method of data collection, in the process of analyzing political upheavals as complex political phenomena. Certainly, when researching the aforementioned forms of illegal political struggle, the analysis of document content must be used in combination with other research methods, primarily from political science methodology, so that the research results are as objective and complete as possible. In this way, the scientific and social justification of research is achieved, which is often embodied through a preventive component, that is, the protection of the state and society from such destructive political phenomena. However, from a historical point of view, the scope and effects of political upheavals are different. In certain social circumstances, they were also a source of progress and prosperity of a society, opening new and more favorable social perspectives and horizons. For the stated reasons, one of the main goals of this work is to try to use the method of document content analysis to provide an additional contribution to the timely recognition of emerging forms of political upheavals and their systematic clarification on every basis, if they occur in society or the state.

Keywords: document content analysis, fundamental research, data collection methods, political upheavals.

Марко М. ПАРЕЗАНОВИЋ

ПРИМЕНА АНАЛИЗЕ САДРЖАЈА ДОКУМЕНТА У ИСТРАЖИВАЊУ ПОЛИТИЧКИХ ПРЕВРАТА

Резиме

Анализа садржаја докумената представља изузетно важан и неопходан метод прикупљања података, у процесу анализе политичких преврата као сложених политичких појава. Свакако, приликом истраживања наведених облика нелегалне политичке борбе, анализа садржаја докумената се мора користити у комбинацији са другим истраживачким методама, пре свега из методологије политикологије, како би резултати истраживања били што објективнији и потпунији. На овај начин се постиже научна и друштвена оправданост истраживања која се често оличава кроз превентивну компоненту, односно заштиту државе и друштва од оваквих деструктивних политичких појава. Међутим, са историјске тачке гледишта,

обим и ефекти политичких преврата су различити. Они су у одређеним друштвеним околностима били и извор напретка и просперитета једног друштва, отварајући нове и повољније друштвене перспективе и хоризонте. Из наведених разлога, један од основних циљева овог рада односи се на настојање да се методом анализе садржаја документа пружи додатни допринос правовременом препознавању појавних облика политичких преврата и њиховом систематском разјашњавању по сваком основу, уколико се дешавају у друштву или држави.

Кључне речи: анализа садржаја документа, фундаментална истраживања, методе прикупљања података, политички преврати.

*Dragana J. JANJIĆ**

Institute for Serbian Culture Priština – Leposavić

*Goran M. JANIĆIJEVIĆ***

Orthodox Center for Youth St. Petar Sarajevski, East Sarajevo

CONTEXTUALIZATION OF MEDIEVAL MONUMENTS OF CULTURE AS A METHODOLOGICAL STARTING POINT WITHIN THE FRAMEWORK OF THEIR INTERPRETATION ON SELECTED EXAMPLES FROM KOSOVO AND METOHIJA***

Abstract: With the awareness of the existence of the limits of all individual methods but also the exhaustion of their potential over time (Jan Białostocki), in the modern methodology of history as a science and its disciplines, new research paths are often based on the *contextualization of the subject* (within the framework of our topic - cultural monuments) in historical (Jakob Burkhardt), socio-historical (Hans Belting) or mythological-religious (Aby Moritz Warburg; Erwin Panofsky) sense from the aspect of symbolic thinking (Ernst Cassirer). Once unimaginable methodological combinations achieve their current effects precisely on the basis of observing and interpreting the *work of art in context*. Such profiling of the research subject reconciles the opposites of factography of historical sources of written and monumental character and hermeneutics of artistic interpretations of a culturally understood phenomenon through the symbolization of reality. The Christian-humanist foundation of European culture represents a more comprehensive framework for researching the monuments of Serbian medieval art in which ancient and distinctly Christian contents are reconciled. A well-known and adequate example of the above, when it comes to heritage from the area of Kosovo and Metohija, is the church of the Bogorodica Ljeviška in Prizren, whose context is easy to establish, i.e. update on the basis of known factors: the founder (King Stefan Uroš II Milutin), the church administration and management of construction and decoration (Bishops Damjan of Prizren and Sava Hilandarac) and the collective author of the work

* Scientific Advisor, dragana.janjicka@gmail.com

** Master of Science, dgjanicijevic@gmail.com

*** This paper was made within the framework of the scientific research work of NIO under the contract concluded with the Ministry of Education, Science and Technological Development of the Republic of Serbia number 451-03-68/2020-14/200020 dated January 24, 2020.

(Nikola, Mihailo Astrapa and Eutyhije). The presentation of the methodological starting point is based on this example from *the context of the work of art* (cultural monument) and based on it - the examination of the methodological potential in relation to the possibility of interpreting some other monuments of medieval art from the area of Kosovo and Metohija.

Key words: context, historical-artistic hermeneutics, iconological method, Bogorodica Ljeviška.

1. INTRODUCTION

Observation, research and interpretation of a *work of art* (cultural monument) in *context*, based on the thematization of the problem, indicates a very complex subject structure. First of all, defining the theme raises the question of whether it is possible to observe the object as an outcome of artistic activity and at the same time reveal its historical layers and aspects. In such a dichotomy of research goals, one recognizes, first of all, the gap between the universalism and timelessness of the work of art *per se* and the historicity of factography, which is revealed in one monument.¹ The key premise of the contextualization of a historical cultural monument, as Hans Belting (Hans Belting 1935) observed, is the realization that its creation is not directly related to the goals of aesthetic universalism, but in concrete historical circumstances it primarily becomes an exponent of the time of its own creation. Such reconciliation of starting points and their thematic and methodological order, in fact, represent a bridge to the complex structure of the research subject with the properties of a more comprehensive overview. This approach is particularly important for the observation of monumental units of „pre-Renaissance“ cultural periods, when, in fact, there was no awareness of the artist as the immediate creator of the work, i.e. the artist himself was not aware of his work as artistic. The full development of creative consciousness up to the modern period places the author of the work of art in the sphere of context.² In classical periods, on the other hand, the immediate creator of the work was considered to be a kind of mediating agent between „divine inspiration“ and the created piece. All this leads to the research of other factors of the quality of a monumental unit, which, for lack of a more favorable term, we call - *function*. In the context of our starting point, it is also necessary to make a distinction regarding functionalism in modern art and

1 „Whoever wants to experience only the timelessness of art today belittles these factors, reduces historical information to mere additions, and does not value it as a true aid in the interpretation of form.“ He will not even want to see that the timeless value of a work sometimes becomes clearer against the background of historically conditioned features, more than when it is merely ascertained.“ Hans Belting, „Work in context“, *Uvod u povijest umjetnosti*, Zagreb 2007, 210.

2 „The question of the truth of art is raised in a new sense as soon as it is no longer classified among other spiritual needs, but is aware of itself as art. Only since we think about art as art, what once contained an answer turns into a question.“ Hans-Georg Gadamer, *European Heritage*, Belgrade 1999, 45.

architecture³, which appears as a targeted principle. Medieval *zizditels* and artists, on the other hand, did not have an awareness of authorship in today's meaning of the term, i.e., it is about values that were mostly taken for granted, and as such are vaguely mixed with other functions that condition the creation of an architectural-historical-artistic whole in its inimitability. Belting points to a significant detour in the use of the term function in the interpretation of works of art in the sense of falling into the „errors of the mechanistic theory of function“⁴, which was also noticed by Horst Janson (Horst Woldemar Janson 1913-1982) and therefore „...required the reunification of form and content“ by researching the function and context in which the work was created“⁵. By defining such a research starting point, Belting made some reference to the unrealized survey of art „according to objects and tasks“, which was planned by Jacob Burkhart (Jacob Burkhart 1818-1897) with the aim of distinguishing the driving forces that were in the background of a certain artistic production.⁶ Later, the famous representative of the Viennese school of art history, Alois Riggler (Alois Riegl 1858-1905) brought up the hypothesis that the same artistic wishes (*kunstwollen*) drove the total creativity of a period, which can be seen at the level of iconography and style.⁷ *The initiation of art* is precisely the thing that, within the framework of our topic, affirms the methodology of viewing *the work in context*, which unites the results of a multitude of heterogeneous interpretations of cultural heritage, scattered across numerous publications. In relation to the excessive demands placed on only one researcher and theoretical interpreter, Burkhart's synthesis of interpretation from different perspectives, in which aesthetics interweave with historical factography, could not have methodological continuity. Due to the improvement of information systems, on the other hand, as well as on the basis of the development of multidisciplinary studies during the 20th century, the possibilities of synthesizing interpretations of the monumental heritage, which inherit the experiences of different methods in the field of historiography, have been realized.⁸ Mobilizing the available possibilities of several methods in relation to a very specific example of artistic heritage, regardless of its place in the history of style, is a certain basis for its concretization, i.e. contextualization. For this reason, *the context* becomes significant to the extent of the subject itself or even - a part of it, and the basis of any contextualization is a very important premise of research processes directed in that way.

3 Hans Belting, *Ibid*, 211.

4 *Ibid*.

5 *Ibid*.

6 *Ibid*, 212.

7 Alois Riegl, „Kasnorimska umjetnička industrija“ in: *Bečka škola povijesti umjetnosti*, Zagreb 1999, 67.

8 „Each of them is a kind of tool that reveals some aspect of history to us.“ Only together they form the researcher's arsenal. This is exactly what the famous French historian Fernand Braudel demanded when he wrote: „For me, history is the sum of all possible histories, a collection of yesterday's, today's and tomorrow's techniques and views. It would be an unforgivable mistake if we chose one of those histories and excluded all the others.“ Jan Białostocki, *History of Art and Humanities*, Zagreb 1986, 35.

2. FOUNDATIONS OF CONTEXTUALIZATION OF CULTURAL MONUMENTS ON THE BASIS OF COMBINED METHODOLOGICAL PROCEDURES

As the subject of our research we mean mainly churches and monasteries from the area of Kosovo and Metohija, and accordingly they are observed primarily in the context of cults that are nurtured on such sacred topos. This is somewhat different from the interpretation in the sense that a temple structure is primarily understood as a ruler's or manor's endowment and that it is determined by that, although it is a fact that cannot be ignored. The principle of cult contextualization implies that such circumstances are observed together with other factors of the uniqueness of a specific work of art-monumental whole. The observation of such a complex structure as a point in the development of a certain style has already been discussed. Establishing the context includes all the mentioned factors, although viewed from a very specific angle, ie. understood and interpreted in a certain way. Finally, within the framework of such a defined subject, the question of the cultic function of art is opened, not only on the basis of iconography, based on a textual template (Holy Scripture, Menologue, Akathist...) but also on the basis of previously established relations between art and cult: „The art of the early of history is a cult, a festival, a celebration, the transformation of profane reality into mythical salvation as its truth. Art is initially a cult. The research of cult and myth in ethnology and the science of religion - from a new-century experience horizon well acquainted with the „differences” of religion and art, but therefore also with their „analogies” - reveals the reverse of mythical cult as „art” of early history.“⁹ The cult side of art, and the one it carries with it, was „counted on” in ancient cultures but also during the Middle Ages. And it is not only the iconic element and allegorical nature of its poetics, but also the ability to define a certain space as cult based on the effect of artistic creation. Further, the very „event of art” within the framework of certain religious contents represents some form of cult activity. This is particularly important for the understanding of religious-artistic entities, originating from the development from the Late Antiquity through the Byzantine to the Medieval period in the area of Southeastern Europe. In such architectural-pictorial units, which we see today as works of art, the described synthesis on the wings of the cult „makes it impossible” to observe the elements in isolation, i.e. it is not satisfied with them, but understands the overall, artistically shaped space as a certain *presence*. We should not lose sight of the fact that, based on the primary reception of the final impression of a certain artistic entity by contemporaries, the design of the church furniture also had an effect, which, based on the poor preservation, is difficult to fathom today. Only when everything is combined does it represent an unrepeatable set in which the genres of art lose their autonomy, while the cult represents the principle of establishing order. This is also indicated by the typica of the churches: „The best example is the

9 Alois Halder, *Umjetnost i kult*, Zagreb 2011, 76.

typica of the imperial monastery of Christ Pantokrator in Constantinople. The priest is prescribed to purify first the temple icon of the main church (Pantokrator), then „all the holy places of the church space, and also the icons intended for veneration that are in it.“ When the founder then starts talking about lighting, it becomes clear that by icons he does not mean pictures on boards, but that he also includes some wall pictures, which were located in prominent places of the temple and which were in the same way revered as icons.¹⁰ Researching the cult context of a monumental-artistic whole leads to the principle of observing the parts in relation to the whole, which, according to the hermeneutic Hans-Georg Gadamer (Hans-Georg Gadamer 1900-2002), finally defines their character.¹¹ Individual elements actually become dependent on the assumption of the whole, and one can also speak of their functionalization. Methodological procedures stem from such a principle. It is necessary to emphasize that historical-art hermeneutics, which derives the definition of the subject from the historical and historiographical sphere, deals with the interpretation of a very specific subject and, therefore, should not be equated with the philosophical discipline of the same name, despite being primarily inspired by it.¹² The hermeneutic approach to the subject implies its concretization on many grounds, starting from the applied technical-technological procedures, however, without prior convictions and sub-understandings. And although many of the received answers are familiar to us, such procedures include asking seemingly unnecessary questions, e.g. - why was some medieval church in Kosovo and Metohija painted with fresco technique and not with mosaic or other types of painting techniques, paints and binders. The answer we will get to such a question at that moment is not decisive, however, in the final definition of the context of the work, it finds its place and represents a certain guideline. „Those questions must be put in relation in the interpretation of the work, which is why we demand that they be distinguished and not confused. Context and historical interpretation answer questions that are different from those answered by interpretation, but it also needs answers from other areas, both for the creation of ideas and for their reasoning.“¹³ The basic assumption of the research of both the *essential meaning*¹⁴

10 Hans Belting, *Slika i kult; istorija slike do epohe umetnosti*, Novi Sad 2014, 266.

11 Hans-Georg Gadamer, *Ogledi o filozofiji umjetnosti*, Zagreb, 2003, 46.

12 „Historical-artistic hermeneutics as a theory of interpretation and reasoning related to a specific profession and its characteristics differs from general or philosophical hermeneutics. While the latter investigates the problem of understanding and interpretation systematically and historically, historical art hermeneutics deals with the understanding and interpretation of very specific objects. Its attitude towards philosophical hermeneutics is critical; its closest relatives are other teachings on interpretation and interpretation, determined by a specific profession or subject, such as literary or literary hermeneutics.“ Oskar Bätschmann, „Instructions for interpretation: historical art hermeneutics“, *Uvod u povijest umjetnosti*, Zagreb 2007, 181.

13 *Ibid*, 182.

14 Ervin Panofski, *Ikonološke studije; humanističke teme u renesansno umetnosti*, Beograd 1975, 29-30.

and the *historical meaning* of a work of art, in the context of historical-artistic hermeneutics, is the statement of its incomprehensibility. Hence, it begins by asking certain questions, recognized as guidelines, which lead to a deeper dive into the essence of the whole. „Suppressing“ previous knowledge about a work of art into the subconscious and the principle of returning to questions concerning even basic information is the initial methodological principle. The validity of such an approach is also indicated by an immediate experience, an event from the past: namely, after a visit to the exhibition pavilions of the Venice Biennale on the island of San Giorgio Maggiore, a short rest was made in the shade of the church of the same name. On that occasion, Tintoretto's „Last Supper“ was not immediately recognized, but through numerous, spontaneous and introspective questions about the composition, theme, color, locus of the painting, etc. there were responses that initiated the memory of previous knowledge and knowledge of the work based on education and insight into reproductions of this painting. Although everything took a few moments, the questions stimulated some thoughts for the first time, which led to a more concrete understanding. This example is indicative of the habit of taking some things „for granted“ without delving into questions of cause, origin and context. „Superficial reception stops when we stop in front of a painting or a building and ask ourselves who made it or ordered it, what theme is depicted, what the building was for, etc. Maybe we will use the information from the museum or travel guide, and then we will return to distracted observation.“¹⁵ This phase of research has its limits, and if we have the intention to penetrate deeper into the essence of the work, it is necessary to overcome the question of function: „As long as functions are preserved, misunderstanding is overcome by showing and learning how to use. Understanding and interpretation can begin only after the acquired or created distance between the work and the function.“¹⁶ The appearance of the artwork itself, after solving the problem of identification and function, becomes a research substrate on many levels and on numerous grounds. As part of the hermeneutic approach to the work, Oskar Bätschmann (Oskar Bätschmann, 1943) actualizes the visual experience within the framework of the process of observing the work, which brings this method into connection with the principles of the aesthetics of the reception (of the work), i.e. specific conditions of its encounter with the observer.¹⁷ Certain theorists of art, originating from the sphere of natural sciences, such as Giovanni Morelli¹⁸

15 *Ibid.*, 184.

16 *Ibid.*

17 Wolfgang Kemp, „Umjetničko djelo i promatrač: pristup estetike recepcije“, *Uvod u povijest umjetnosti*, Zagreb 2007, 227.

18 „Morelli comes from the natural sciences and in 1839 he received the title of *medicinae doctor* in Berlin. That circumstance is not without importance for Wickhoff; because he was also initially, as we already know, oriented towards natural sciences and early on he enjoyed the teaching of the famous botanist Josef Böhm (who later became his brother-in-law); the theory of development, which was discussed a lot at the time, particularly attracted him and undoubtedly influenced his genetic way of observation.“ Julius von Schlosser, „Bečka škola povijesti umjetnosti“ y: *Bečka škola povijesti umjetnosti*, Zagreb 1999, 345.

(Giovanni Morelli 1816-1891), albeit from different motives (improving attribution methods), were very attached to the process and the ability to observe works of art, and his follower Roberto Longhi (Roberto Longhi 1890 -1970) believed that such potentials should be developed through practice.¹⁹ The ability to observe works of art is more than a mere talent and cannot be put into question; it is enough to remind you that on such a basis Heinrich Wölfflin (Heinrich Wölfflin 1864-1945) established an entire system of studying form.²⁰ The mention of two attribution-oriented art theorists in the context of our topic is also based on another promoted position - that a work of art has the value of a document and if there is a written source, it can only supplement it in a credible way. In addition, Longi viewed the work of art as an object containing everything necessary for its interpretation.²¹ In addition to the model of subject research based on the set of questions, Oskar Bätschmann also proposes its description, which brought him significantly closer to the methodological structure of Erwin Panofsky (Erwin Panofsky 1892-1968). This representative of the iconological method believed that the description of the object without entering the field of meaning represents the first certainty and stage in interpretation. According to him, it is very important whether something is „up“ or „down“, „forward“ or „back“, and such approach to the subject aims to get to know it more intimately. For this reason, he called this phase „pre-iconographic description“ and its focus is the „primary“ or „natural content“ of a certain artistic representation.²² This part of the research is based on practical experience, and certain lay foundations of interpretation, according to Panofsky, allow viewing the subject without pre-conviction. „Everyone can recognize the shape and posture of human beings, animals and plants; everyone can distinguish an angry facial expression from a happy one. Of course, it is possible that in a given case the scope of our personal experience is not wide enough, when, for example, we are faced with the representation of some old rare tool or with the representation of some unknown plant or animal. In such cases we have to

19 „In this way, the eye is exercised, and with each analyzed image, the individual imaginary corpus of art, necessary for later independent research, is upgraded and enriched.“ In addition, discussions about these „nameless“ paintings, which through gradual analysis seem to acquire their true form, build and enrich the linguistic expression of the art historian, his basic tool. And indeed, in accordance with the attitude that „practice works wonders“, after several months (perhaps, more precisely, years) of persistent practice, the eye becomes more sensitive to the painting forms characteristic of an individual artist, and, rarely at first, but gradually more often, satisfaction comes of recognizing at least the local school to which the observed image belongs.“ Tanja Trška, „Umjetnost atribucije“ <https://hrcak.srce.hr/kvartal> Vol V No 4, 2008, 37-38.

20 „The most frequently uttered imperative must be this: „You must learn to see, you must develop, train your visual memory!“ This requirement is answered by the sentence, which is often repeated with astonishment at seminars, but also at congresses: „So where did this person learn to watch? During the studies, it is still possible to correct this deficiency; in professional work we can correct it only with great effort.“ Heinrich Dilly, „Uvod“ in: *Uvod u povijest umjetnosti*, Zagreb 2007, 11.

21 *Ibid*, 36.

22 Ervin Panofsky, *Ibid*, 24-26.

consult certain books or an expert, to expand the scope of our practical experience, but we do not go beyond the sphere of practical experience."²³ But according to Longi's instructions, in this case too, it is a matter of very careful and detailed observation, which is assumed when describing the visual representation.²⁴ All of the above is based on the thesis that the key meanings of the painting are „hidden“ in certain details, but detail is also one of the characteristics of contemporary representatives of art history.²⁵ It is also important to develop awareness of one's own understanding and experience of a particular work of art and to reduce the distance of any kind between the interpreter and the interpreted. The history of previous interpretations also enables certain knowledge about the subject in terms of its reception through individual periods and their characteristics.²⁶

Iconographic analysis certainly provides insights that are considered key to understanding the work of art in context. The analogies of pictorial representations and textual templates open up a new research field, filled with written sources and traditions, which are also subject to interpretation in context. At that level, the assistance of other scientific fields and professions is necessary, and it becomes clear that the envisaged methodological procedure is becoming more complicated. A critical and analytical approach to reference written sources as well as traditions is necessary: „How can references be evaluated? On the one hand, as a building block for determining pictorial ideas, and on the other hand, they form connections between form and content, which may (may or may not) take on the role of semantic units in the image.“²⁷ As one of the reliable guidelines for researching the function of the work, Bächtmann mentions the study of the aspect of *the order* as well as the more precise identification of the customer and the historical circumstances. For the interpretation of medieval works of art in complex monumental units, this question is of great importance. Therefore, as a research substrate, the personality and life of the client and his pretensions towards some kind of „heroic step forward“ from his own temporal and spatial determination are shown. „*For the historical explanation of the visual and literary references and the explanation of*

23 *Ibid*, 24-25.

24 Roelof van Straten, *Uvod u ikonografiju; teoretske i praktične upute*, Zagreb 2003, 10-11.

25 „For now, we will only assert that the tendency to detail has meanwhile become a test of ability for the study of art history and the profession of art historian.“ This was especially pronounced after the monographic treatment became the center of interest of the historical art activity.“ Heinrich Dilly, *Ibid*, 12.

26 „It is another thing when you connect your argumentation with short descriptive statements. You will see that in this case you are not performing a schematic description, but giving the work its own speech. The way that leads in that direction is to write down questions. Articulating misunderstandings is not an exercise that only the novice must undergo. I will paraphrase a sentence of Klaus Weimar: giftedness and knowledge in an art historian develop to the extent that he develops his ability to objectively examine his own or an existing initial understanding.“ Oskar Bächtmann, „Upute za interpretaciju: povijesnoumjetnička hermeneutika“ *Ibid*, 185.

27 *Ibid*, 196.

the image's function, we will study the order and the biography of the client. The explanation is the answer to the question why it is so. It exists in the logical execution of what is to be explained (*explanandum*) from what contributes to the explanation (*explanans*). In a historical explanation, the *explanans* is composed of the rules of some historical behavior and the motives of some specific behavior. Whether it is possible to get any kind of explanation from the order and the motive of the orderer depends on the information about the motives of the orderer, his relationship to the artist and the function of the work.²⁸ For the research of the context of the works of medieval art, the study of the character of the order and the customer is of great importance, especially when viewed in the framework of the religious sphere and on a symbolic level. In such frameworks, the relationship between the elements of the *expected* and the *unexpected* in one work is also important, not only in relation to the client but also in the reception of modern observers.²⁹ Thus, one of the research phases is focused on the very process of creation of the work, including its assumptions and conditions. All the subjects of the contextualization of a single monument (founder, bishop, builders and painters...) including the audience - contemporaries - believing people, represent indicators not only of creative impulses and, in Rigel's words - *artistic will*, but also of specific historical circumstances in which a work of art is created, which we see today as a cultural monument.. It is a question of a certain segment of society, which is identity-related to *creation*. Today it is difficult to imagine this because creativity is understood as the result of a conscious intention: by admiring a building today, in fact, we glorify its creator. „What architecture reveals to us here is found everywhere. There is no longer the self-intelligibility with which public consciousness is expressed in public buildings. It was now about the living orders of the cult or the government or just about the new life feeling of artisan diligence and civic virtue - these were certainly works of art. But once upon a time, they were also works in which everyone recognized themselves. Therefore, in fact, there was no aesthetic distinction that would have trained connoisseurs and educated people for the distance needed for judgment and that would have known the art that was at work in the works of architecture, painting, and music, to separate it from the message and spiritual content that were in brought them in.“³⁰ For this reason, the hermeneutic insight into the initial processes is important for the interpretation of the object thus defined. At the same time,

28 *Ibid*, 196-197.

29 „Determining the creative idea for interpretation is an important intermediate product because it enables us to know what the new artist has made visible in his work and how his process of creating that visible is structured.“ We can define an idea as a choice of certain references, as a departure from following the rules and schemes of a species, as a combination of motifs or compositional schemes, as an arrangement of characters and equipment (buildings, landscape elements) in space and as an arrangement of colors and shapes.“ Oskar Bäckshmann, *Ibid*, 197.

30 Ханс-Георг Гадамер, *Европейско наслеђе*, 45.

we analytically recapitulate the steps that led to that creation, which represents a part of historical research.

Researching the context on the basis of the mentioned procedures and indications, through a stage that is fulfilled by a multitude of assumptions, which will be re-examined in the future, Bächtmann marks as *creative abduction*.³¹ Although we are talking here about the domain of probability, this research act ie. stage is of great importance, and the author draws attention to the fact that no science, and not only from the humanities sphere, can function without abduction.³² At the same time, the subjectivity of the research procedure is controlled by the process of checking theses and assumptions. „This is precisely why we are not talking about raw subjectivity here, but about the insight that no science can be maintained without a subject, and that subjectivity cannot be denied, but must be educated.“³³ The verification of set theses is carried out on the basis of comparison with textual analogies, thematically related sources, and in a broader sense, any reading that contains the observed ideas; then based on other examples of solving the topic, etc. All of this should be accompanied by the transparency of the procedure, which enables other researchers to determine the validity of the proposed argumentation, to agree with the proposed thesis or to refute it on based on arguments.³⁴

The assumption of the „tendency of the work of art to break away from the dictates of the epoch“ in which it was created also suggests additional caution during research and interpretation. In addition, the dating and placement of cultural monuments represent certain guidelines, but they do not explain a single work of art in terms of its depth of meaning and breadth of cultural influence. The parameters of time and space, taken individually, point to a multitude of possibilities. In this sense, Panofsky points out the inconsistency of historical (cultural) and astronomical (natural) time: „...when a historian says „around 1500“, he does not mean a single point in time to which, starting from a conventionally determined term, the Earth turned around the Sun 1,500 times, but he means a certain point in time, which is meaningfully precisely determined not only by a certain concrete „event“, but also by certain concrete cultural characteristics.“³⁵ Spatial and chronological components from certain art history must correlate, ie. they must be transformed into a new, more complex but recognizable, established determinant, which Panofsky illustrates with numerous examples.³⁶ The spatial and chronological approach to the work

31 „By creative abduction, i.e. by finding the context that connects the elements and facts in the picture, guesses (grounded assumptions) about the possible meaning of the picture arise.“ Oscar Bächtmann, *Ibid*, 198.

32 *Ibid*.

33 *Ibid*.

34 *Ibid*, 204-205.

35 Erwin Panofsky, *Rasprave o osnovnim pitanjima nauke o umetnosti*, Bogovada 1999, 124.

36 „Gothic basilica“, 15th century Swabian wood sculpture“, „Byzantine painting of miniatures of the post-iconoclastic period“, „Parthenon sculptures“, „the art of Albrecht Dürer; they are

of art also reflects the intentions of the iconological method, although in the examination of symbols, personifications and allegories, the search for universal meaning in a wider cultural context was predominantly sought. Exactly such a dichotomy of goals is an indicator of methodological layering, on the basis of which *in general we observe the individual*, concrete and separate as a substrate, i.e. subject to interpretation. For this reason, the practice of using the term *iconographic-iconological method* seems justified: „The iconographic-iconological method is therefore a search for the former meaning of a work of art with the help of all available pictorial or written sources, which shed light on the work of art.“ The goal of „historical interpretation“ is to base our current understanding of the work on what was contemporary to the work.³⁷ Since Aby Moritz Warburg (186-1929) was the first to use the term iconological analysis at the International Congress of Art History in Rome in 1912, he is considered the founder of the method of the same name.³⁸ Iconological interpretations went beyond the framework of the image in the direction of searching for its essential meaning based on cultural symbols and symptoms. What the experience of the iconological method affirms for the interpretation of painting, for example in the Bogorodica Ljeviška is the search for an essential meaning³⁹ or deeper meaning based on symbols, personifications and allegories⁴⁰, which are recognized in the segments of the fresco ensemble of this church. Straten refers to the small volume of such representations in medieval art, but their certainty and partial classification⁴¹ provide a basis for an iconological synthesis. In addition, the interpretation of symbolism

all such „referential systems“, in which a specific piece of historical space is observed and analyzed during a specific span of historical time (or expressed the other way around: a specific span of historical time within a specific historical segment of space), each of which represents a spatiotemporal continuum quite with certain limited dimensions, but a completely complex structure that interweaves „spatial“ and „time“ components into one essentially indivisible and individually determined whole“, Erwin Panofsky, *Raprave o osnovnim pitanjima nauke o umetnosti*, Bogovada 1999, 124-125.

37 Johann Konrad Eberlein, „Sadržaj i smisao: ikonografsko-ikonološka metoda“ u: *Uvod u povijest umjetnosti*, Zagreb 2007, 161.

38 Jan Białostocki, *нав. дело*, 100-101; Johann Konrad Eberlein, „Sadržaj i smisao: ikonografsko-ikonološka metoda“ y: *Uvod u povijest umjetnosti*, Zagreb 2007, 167.

39 „We discover it by establishing those basic principles which show the essential attitude of a nation, a period, a class, a religious or philosophical faith - which is unconsciously expressed in a person or condensed in a work.“ Ervin Panofsky, *Ikonološke studije; humanističke teme u renesansnoj umetnosti*, 23.

40 Roelof van Straten also called allegories „personifications in action“ and gave their explanation: „Allegory in visual arts can be defined roughly as follows: it is a representation of a personification associated with one or more personifications and/or with one or more other persons or characters; everyone can be involved in some action together.“ Roelof van Straten, *Uvod u Ikonografiju; teoretske i praktične upute*, Zagreb 2003, 39.

41 „In the Middle Ages, the number of personifications increased only very slowly: apart from certain typically Christian personifications such as Ecclesia (new or Christian church) or Synagogue (old or Jewish church), few new ones were created.“ Roelof van Straten, *Uvod u ikonografiju; teoretske i praktične upute*, Zagreb 2003, 30.

in decorative segments, which was established by Alois Riggie and presented in the introduction to his writing „Questions of Style“⁴², is significant for understanding the overall tradition of medieval art, which is rich in such details. In such a context, a certain openness of artistic content to the outside world, sensitivity to historical and cultural changes, merging of tradition with intentions at the level of the transfer of ideas from the spiritual to the artistic sphere is revealed. Therefore, the aim of the presented research is to examine the possibility of a deeper interpretation of complex monumental units such as the Bogorodica Ljeviška in Prizren.

3. THE CHURCH OF BOGORODICA LJEVIŠKA - OBSERVATION OF THE PIECE IN CONTEXT

3.1. Construction layers and principles of the Prizren cathedral

The idea of succession (inheritance) is revealed on many levels of the medieval Prizren cathedral.⁴³ Although the outlines of the original building from the late antique/early Christian period are difficult to grasp visually, the multi-nave construction achieved its own echo in the later renovations, i.e. pre-constructions. From the aesthetic point of view, the building represents a harmonious combination of the principles of *longitudinality and axuality*. It is about reaching an ideal, which was assumed even in the period of early Christianity and which was connected with the ruling ideology.⁴⁴ It can therefore be claimed that Alois Riggie established an aesthetic paradigm on the spiritual postulates of church architecture and the harmonization of elements and basic principles in which they are manifested. „Basically, all problems, and consequently almost all research methods of artistic types of sculpture, painting or artistic craft, can also be applied to architecture.“⁴⁵ Even today's observer of the exterior of the Church of Bogorodica Ljeviška notices the exceptional artistic expression, and it is the task of the sciences that deal with art to

42 „The subtitle of this book „Basics for the history of ornamentation“ announces its content.“ Alois Riegl, „Pitanja stila (uvod istoimene knjige)“, in: *Bečka škola povijesti umjetnosti*, 3.

43 „Looking for support for his political aspirations, King Milutin paid special attention to the restoration of old and the construction of new churches in the Holy Mountain, in the Christian East and in his country, turning first to bishoprics and old cult places.“ Vojislav J. Đurić, Gordana Babić-Đorđević, *Serbian Art in the Middle Ages II*, Belgrade 1997, 13.

44 „A modern visitor to a Roman basilica, as a rule, senses that he is in a space directed by the sense of perspective, always understood as a (limited) section of an endless space; as the early Christians were really guided by perspective, the creation of the basilica meant nothing more than a sudden break with the centuries-old artistic heritage.“ Alois Riegl, *Spätromische Kunstindustrie*, 69.

45 Dethard von Winterfeld, „Utvrdjivanje predmeta u arhitekturi“ in: *Uvod u povijest umjetnosti*, Zagreb 2007, 85.

discover what it is based on.⁴⁶ It is precisely for this reason that it is necessary to return to the beginnings of church architecture, which, by all accounts, were also the subject of attention of its later restorers. Harmonization of the form of early Christian basilicas, i.e. alleviation of perspective unidirectionality, according to Riggle, was solved in two ways: the central nave actually included a certain number of squares, the corners of which were marked by columns. Longitudinality is harmonized using this principle based on the impression of rhythmic repetition of one harmonized element. Simultaneous feelings of comfort and spiritual perspective, in this way, were made possible, and to that should be added the fact that the height of the central nave was the same as its width. The addition of side, slightly narrower naves also aimed to mitigate the effect of pronounced longitudinality: in front of the observer, new spaces opened up in the intercolumniations at the junctions of rectangular forms, thus suggesting the impression of spatial infinity. Nevertheless, the relationship between the length and width of the nave places the original Prizren church in the order of Asia Minor basilicas.⁴⁷ On the described phenomenon, Alois Riggle observed and defined the principle of „composition of masses“.⁴⁸ Based on archeological-architectural investigations of the Prizren church, it was determined that the original building spread over „the entire area that it still covers today, and that it did not cover only the central part, whose present-day architecture is clearly distinguished as a whole.“⁴⁹ The original church shows the character of early Christian basilicas with a gabled roof over the central one and sloping roof coverings over the side naves. It is also reasonably assumed that the ceiling was made of a light wooden structure.⁵⁰ As part of the first renovation, the church received a unique gable roof.

46 „When the Prizren bishopric, the church of the Bogorodica Ljeviška (rebuilt until 1307), crucial influences from Greek countries were witnessed, the new building is quite different from the churches in Raž. The renovation of the old basilica (which had already been repaired in the 13th century, and was resting on the foundations of a Byzantine church from the 9th or 10th century) was entrusted to Protomaster Nikola, who installed four pairs of new columns in the wide middle nave of the old basilica, strengthened the existing four pairs and built new semi-circular vaults above them. At the intersection of the longitudinal semi-circular vault with the transverse vault, between the third and fourth pair of columns, he erected a strong dome on a six-sided tambour and a low cubic plinth, and far away at the corners of the narrow side aisles, on the east and west sides, he built narrow, light, six-sided domes, whose height does not threaten the feature of the center of the temple, determined by the main dome. That ancient constructive solution catches the eye despite all the colorfulness of the modern facades; it is reflected in the vaulted altar, in the arrangement of the side domes, and in the relationship between the central space of the three-nave temple and the outer, lower, side naves on the north and south sides of the building.“ Vojislav J. Đurić, Gordana Babić-Đorđević, *Ibid*, 16.

47 Slobodan M. Nenadović, „What did King Milutin restore on the Church of the Bogorodica Ljeviška in Prizren“ in: *Starinar V-VI/1954-1955*, Belgrade 1956, 224.

48 Alois Riegl, *Spätromische kunstindustrie*, 69.

49 Слободан М. Ненадовић, „Шта је краљ Милутин обновио на цркви Богородице Љевишке у Призрену“, *Сторинар V-VI/1954-1955*, Београд 1956, 212.

50 *Ibid*, 221.

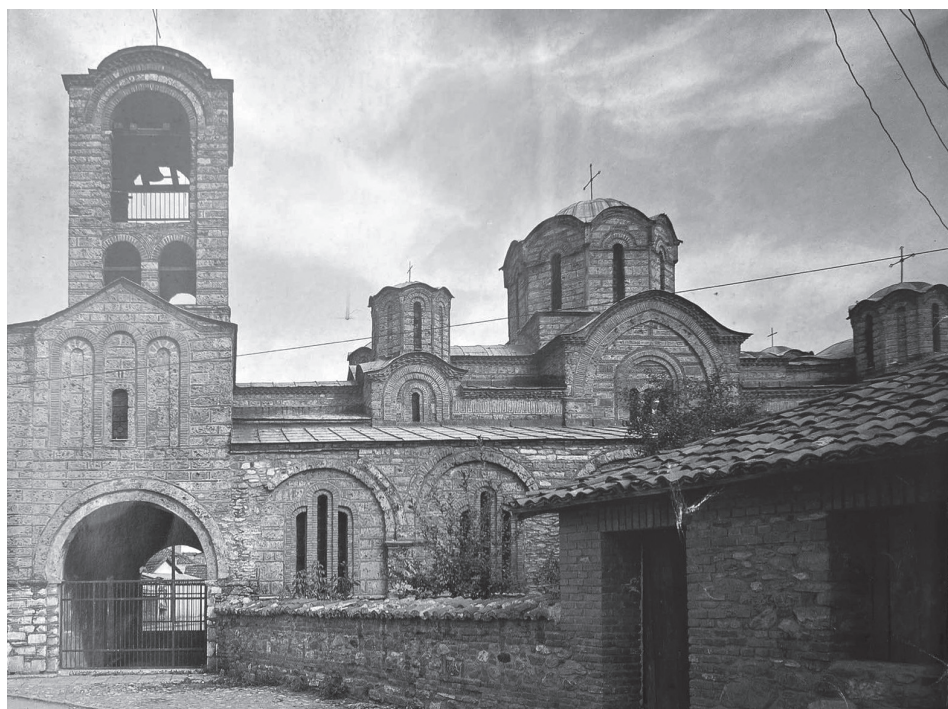


Figure 1.

When looking at the exterior of the Prijene cathedral, a strong impression is made by the design of the five-domed church, which seems to grow out of the three-nave basilica (Fig. 1). From the perspective of the subsequent development of church architecture, it could be seen that there is a certain inconsistency to which attention has been drawn⁵¹, however, this building achieved its intended goal - becoming a landmark in an urban environment, it could be understood as a centuries-old spiritual and cult center as it was usual in the Greek area, especially in Thessaloniki.⁵² The height of the new church with two strong verticals strongly opposed to the spaciousness of the foundations, gave the impression of a cathedral and symbolically marked the episcopal seat, whose continuity is assumed with certainty.⁵³ The insistence on the original surface and the very complex construction undertaking confirm such assumptions. The gradual sequence of horizontals according to height and at the same time - depth, harmonious distances are opposed by shorter verticals, which, as a rule, end in an arch. Whether we are talking about the *lezens* on the ground floor or the window openings in the higher zones and

51 „Somewhat stretched along the east-west axis, still a heavy building with two verticals (dome and belfry), Bogorodica Ljeviška does not bear witness to a completely successful harmony of proportions, imposed largely by the existing, older foundations and walls.“ Vojislav J. Đurić, Gordana Babić-Đorđević, *Ibid*, 17.

52 D. Panić, G. Babić, *Bogorodica Ljeviška*, Belgrade 1988, 28-29.

53 Slobodan M. Nenadović, *Ibid*, 223.

the domes and bell tower, this repetition with minor deviations and numerous variants forms a composition, which could be identified with an orchestral one. The external narthex, over which rises the bell tower like a transverse transept in early Christian churches, which does not exceed the width of the rest of the building, recalls the complex structures of imperial basilicas with pastophoria on the west side. The tremulous color effect on the facade was achieved by means of deeper linear shadows, which appear in the register order of shallow depressions and the contrast ratio of the brightness of the wall surfaces and the shade of slender window openings. There is no doubt that such effects initiated to an even more intense extent among contemporaries the impression of the sublimity of the building, worthy of the divine parousia and the idea of the Kingdom of Heaven, but also of glorifying the earthly ruler, who made it possible, which is also confirmed by the text of the founding inscription. „However, although a lot has been preserved from the old basilica of Bogorodica Ljeviška, the proto-master of King Milutin, while building into it the five-cubic church with the base of the inscribed cross, had to build many of its parts from the very foundations, and that inscription does not say anything more than what was actually done.“⁵⁴ On the one hand, one could think about a certain architectural conservatism and a return to some Komnenian buildings⁵⁵, and on the other side – it is about a targeted renaissance of (late) antique models, typical of the period of the rule of the Palaiolog dynasty, in which cultural origins were assumed and on the basis of which, in symbolic way, it indicated succession and church continuity.

3.2. Allegorical principles of iconography of wall painting in the Bogorodica Ljeviška

Monumentality and complexity on the iconographic level are also characteristics of the wall painting in Bogorodica Ljeviška. The layout and relationship between narrative scenes and unusually solemn figures is harmonized in a way that was never repeated in medieval wall painting. One can talk about a certain condition of the architecture of the church in the interior, however, the impression of determined implementation of the idea leads to the observation of the principle of symmetry, as the key one. First of all, one notices the deviation from the linearity of the composition *Service of the Bishop - offering to the lamb*, which was common in the Komnenian and early Paleological traditions. The principle of monumentality as a guiding idea represents the relationship between the central figure of the Virgin in the conch and the side views of the two leading liturgists, who flank her. Gordana Babić drew attention to such a circumstance, noting the extent of the painters' skills based on the ability to adapt to architectural conditioning and at the same time – be consistent with respect for the basic idea and aesthetic principle.

⁵⁴ *Ibid*, 224-225.

⁵⁵ Vojislav J. Đurić, Gordana Babić-Đorđević, *Ibid*, 17.



Figure 2.

The impression of solemnity, on the other hand, as in the case of architecture, is made possible by the consistent implementation of the composition of the entire fresco ensemble based on the synthesis of axiality and longitudinally. The archbishops were placed in different positions: some are more and some less inclined, and the suggestiveness of the movement and the proportional reduction of the heads according to the ancient-Greek ideal, in fact, enabled the impression of classicism, especially in the figures in the lower zones. The aim of such a presentation of figures in motion was to suggest the liturgical event itself, and it was certainly more comprehensible to contemporary than to today's audience. The orchestration of the movements of the figures, some of

which are shown with lowered heads and faces towards the *lamb* and others as if looking up to the heights, enabled a strong expression of the liturgical event in its complexity and coherence at the same time (Fig. 2). The functionalization of the elements and not the clarity of the composition made it possible to recognize the idea of the whole.⁵⁶ The circumstance of the absence of the principle of depicting the archbishops in a row indicates that such depictions are not based on illustrations of the liturgical act, but on the idea of its deeper meaning. Is it possible to recognize a specific performance of the responsible bishop (?) is an open question; however, the flash of more complex liturgical manifestations, recognizable in the depictions of angels-deacons with censers and almshouses at the ports of the altar space, point to the certainty of the liturgical ceremony, the framework of which was certainly determined by the proper archbishop. With the same sensitivity for the gestuality of the depicted figures, previously observed in the positions of the archpriests, the painters, on the basis of a repeated detail (the right hands of the angel and the censer) diagonally cutting the frontal figures, clearly suggested the action - ceremonial burning of incense, which can still be seen today in Hellenic areas, especially on Mount Athos. In addition, it can be concluded that the convergence of liturgical and court ceremonies, which Gordana Babić pointed out based on the more violent depiction of candle-bearers,

56 „The connection of the spatial whole with the spatial valley in the area of pure cognition is not imagined as something real but, fundamentally, also as something purely functional: the whole of space is not “assembled” from elements, but is built from them, as from constitutive conditions.“ Ernst Kasirer, *Filozofija simboličkih oblika; drugi deo – mitsko mišljenje*, Novi Sad, 1985, 97-98.



Figure 3.



Figure 4.

is a reflex of the Byzantine tradition. The hierarchical-liturgical context of the paintings of the Bogorodica Ljeviška can also be seen in one, seemingly secondary but indicative detail - the depictions of the resurrected Christ within the framework of the cycle of his apparitions. In the scenes of the road to Emmaus and the Supper in Emmaus, Christ is shown in an identical way: his red chiton is decorated with wide gold-embroidered clavi as well as the same collar and an even wider border on the lower edge; based on the shape, this garment comes close to the form of a bishop's cassock (Fig. 3). An even more impressive detail is the cropped hair with a crown tonsure as a sign of belonging to the clergy. On the preserved portraits of the archbishops of Serbia and the bishops of Prizren in the outer chancel, tonsures can also be seen, which indicates the fact that such a priestly and monastic haircut still entailed the removal of hair from the crown and the subsequent maintenance of the tonsure. In the same way, Saint Sava is depicted among other Nemanjići in the vestibule of the church (Fig. 4). The biblical fact that the apostles Luke and Cleopas did not recognize Christ on the way to Emmaus (Luke 24, 13-30) and that they recognized him as the Savior only after he broke the bread (Luke 30-31) the authors and creators of the wall painting of the Bogorodica Ljeviška used to give liturgical meaning to a biblical scene. Thus, in our interpretation, we arrived at another fundamental thesis of Gordana Babić: „The influence of the liturgy on wall painting became stronger and stronger.“ That is why it could happen that in the cycle of Christ's earthly activity in the Prizren cathedral, a completely unusual illustration of a sinner buying myrrh appeared.⁵⁷

57 *Ibid*, 55.



Figure 5.

The symmetry of the composition *The service of the archbishops - worshipping the lamb* and the presentation of figures in pairs according to the antithetical principle is the principle that is consistently repeated, especially in places where flanking was supposed to mark a certain phenomenon. This reflects the character of the general and individual aspects of the cult⁵⁸, the place itself becomes its center. It represents the context in which man's relation to God is identified in a certain cult space. The very place of the entrance with the personifications of the Old and New Testaments on the belly of the arch represents a certain prologue of such a relationship (Fig. 5). Referring to previous research on the meaning of this representation⁵⁹, Ivan Đorđević interpreted to a large extent the dogmatic and liturgical meaning of the personifications, and there is not much to add there. However, what both Đorđević and Draga Panić sense

is that these personifications do not represent autonomous symbols, but, only united, they form an *allegory of the alternation of the two Testaments*. To recall, the iconologically understood concept of allegory is a representation of two or more personifications in a mutual relationship, which creates a completely new meaning. According to Straten's iconological interpretations, the depiction from the portico of the Bogorodica Ljeviška belongs to *pure allegory*: „Those pure allegories often show some kind of „abstract event“, which means that they illustrate some abstract concept or some abstract idea, which already contains some action, for example *Time reveals the truth or the Embrace of Peace*

58 „In it, indeed, God appears on one side, and I, the religious subject, on the other side: but that determination is at the same time the concrete unity of these two, on the basis of which it is known that I am in God and God is in me.” *Ibid*, 210.

59 „The first to notice and mention them, but without giving a complete solution, was Draga Panić, who noted that these two figures in the outer vestibule are related to the „theme of the alternation of the two Testaments”. The last director who questioned the play was professor Svetozar Radojčić, who, by posing a problem, pointed us in the direction of further research. He believes that the mentioned figures are the „antithesis of day and night”, the personification of the New Testament's day, and the Old Testament's night.” Ivan Đorđević, „The Old and the New Testament at the entrance to the Bogorodica Ljeviška” in: *Collection of fine arts of Matica srpska* 9, Novi Sad 1973, 15.

and Justice.”⁶⁰ It is obviously a „Renaissance“ pattern, more than we have been ready to accept until now, in which ancient elements take on new features, which, in the West, was also becoming popular in the mid-14th century, thanks to Petrarch's „Triumph of Love”.⁶¹ The late antique examples that Ivan Đorđević recalled, including the depiction of the *Aurora* from the Pompeii fresco, lead us to a specific archetype in which one raised and one lowered torch or pedum can be seen in the hands of the dadophors from Mithraic icons⁶² or the „genius of death” on sepulchral Roman monuments. In this sense, the meaning of the lowered torch is determined only after comparing it with the raised one (in the Bogorodica Ljeviška - ripida), on the basis of which it can be established that, in a formal sense, the antithesis becomes the basis of the mentioned allegory. This led to the solar-lunar context of Roman culture under the influence of oriental cults, and to the philosophical-religious reflection and understanding of *time* and *space* in a broader sense. „On one and the same concrete basic perception, on the alternation of light and darkness, day and night, rests both the primary perception of space and the primary breakdown of time.”⁶³ It is about the „general place of all cults”, a religious idea, which, despite the development in the direction of monotheism, was not abandoned⁶⁴, only the general meaning was adapted to the specific dogma. This is how the eschatological character of the concept of *time* and the idea of timelessness, that is, infinity, is recognized in the aforementioned allegory. In addition to the Gospel⁶⁵ and liturgical texts in which such an idea is recognized in the same way⁶⁶, some writings of Saint Maximus the Confessor, in a very graphic and metaphorical way, refer to the topic of the exchange of the two Testaments.⁶⁷ The way in which, creating an allegory of the alternation of the two Testaments, the personifications of *shadow* and *truth* are shown and textually marked, is fully in accordance with the principles promoted by Cesare Ripa⁶⁸ (Cesare Ripa 1560-1623) in the work „Iconology” in the 16th century. Concepts are personified using female figures such as the feminine nouns **truth** and **сѣнь** (shadow) and the verbs that determine their meaning (the shadow *passes*; the truth *arrives*) are gesturally coded on the displays themselves.

60 Roelof van Straten, *Ibid*, 39.

61 *Ibid*, 39-40.

62 Ljubica Zotović-Žunković, „New monument of Mithra's cult“ in: *Starinar* IX-X/1958-1959, Belgrade 1959, 205-210.

63 Ernst Kasirer, *Ibid*, 113.

64 „The development of a mythical sense of space everywhere starts from the opposition between day and night, light and darkness.” The dominant power of this opposition over mythic-religious consciousness can be observed even in the most developed cultural religions.“ *Ibid*, 103.

65 Goran Jančijević, *Christian Art and Ancient Paradigms*, Belgrade 2012, 57-58.

66 Ivan Đorđević, *Ibid*, 20-22.

67 „The law is a shadow and the Prophets are an icon of the divine and spiritual good present in the Gospel. In the writing (text) of the Gospel itself, the truth is present, which was indicated in the Law and depicted in the Prophet.” „Maxim the Confessor: Gnostic Stoslovi” in: APXHKAITEΛOΣ; Aspects of the philosophical and theological thought of Maxim the Confessor, Nikšić 2006, 207.

68 Roelof van Straten, *Ibid*, 31-36.



Figure 6.

In numerous scenes from the fresco ensemble of the Bogoridica Ljeviška, personifications of concepts, based on ancient motifs, can be recognized. Thus, in the representation of the Last Judgment, on the southern part of the vault above the western wall, a representation of Emmanuel with wings can be seen (Fig. 6) This eschatological symbol points to its formal inspiration in the so-called (winged) „geniuses of death“ from the Roman sepulchral monuments and together with the hand, which from above, from the eons of heaven filled with heavenly powers, lowers the scales that weigh virtues and sins, form a kind of allegory of justice (of God), righteous judgement. The nudity of the personification of purity and sinlessness, in the form of Emmanuel, represents a very widespread model on the iconological foundations of a deeper meaning, that is, it indicates the notion of truth in the eschatological context. The nakedness of fallen angels, as well as personified sins, in a way represents a metaphor for the exposed (revealed) *truth* (Fig. 7) In the personified appearance of *nuda veritas*, Erwin Panofsky observed the effect of Neoplatonism.⁶⁹

69 Erwin Panofski, *Ikono-loške studije; humanističke teme u renesansnoj umetnosti*, 125-127.

The allegorical approach, quite unexpectedly, was also applied in the program of the dome and tambourine of the Church of the Assumption of the Blessed Virgin Mary in Prizren. The bust of Christ Pantokrator is placed in a special form of medallion - *imago clipeata*, which overlaps with an eight-pointed star and is undoubtedly associated with the sky, i.e. the heavenly throne of the Logos of God. Angels spring from between the arms of the star, they „fly“ to the prophets and offer them folded scrolls, certainly with the texts of the prophecies. This established the whole, i.e. an *allegory of the Lord's prophecy*, and it can be concluded that it is a solution, in which the depictions from the dome and the tambourine are closely connected with the same meaning.



Figure 7.

In such a context, the meaning of the angels themselves as the „power of the Logos“⁷⁰, the heavenly mediators between the divine wisdom-provisions and the Old Testament prophets, is revealed.

As for the depiction in pairs, there is a characteristic example with the apostles Peter and Paul on the belly and Christ Emmanuel at the top of the archway from the narthex to the nave of the church. It is an early Christian archetype, which appears in a medieval church, in a somewhat modified but largely preserved sense. Conditional analogy and a similar way of iconographic thinking can be seen in the painting of the portico of the tower of the Church of the Savior in Žiča⁷¹. The depictions of the apostles Peter and Paul in early Christian tombs are connected to the theme of entry (introduction of the deceased into paradise), in which they appear as an allegory of the church in its soterological sense, which calls into question the previous thesis about their prophylactic role.⁷²

70 Janko Radovanović, „Jedinstvene predstave Vaskrsenja Hristovog u srpskom slikarstvu veka“ y: *Зоїпаф* 8, Belgrade 1977, 38.

71 „As the first among the apostles, the founders of the church, the saints whose cult is celebrated on the same day, June 29, are painted at the entrance to the nave; Their figures occupied similar places in Perivlepta in Ohrid, in Hora in Constantinople, and in a particularly interesting variant at the entrance under the tower in Žiča, where the idea of Peter as the rock on which the Church rests is expressed by a painted metaphor (Mat. XVI, 18.)“ Draga Panić, Gordana Babić, *Ibid*, 58.

72 „Those who died and were buried in the Niš tomb, according to their faith and according to the funeral prayers, wanted to be in heaven with Christ and the saints, cum sanctis, and that is why paradise was painted, that is why the monogram of Christ was painted, which replaces the person of Christ, and that is why they painted saints, above all Peter and Paul

From the point of view of iconological typology, the depiction with Peter and Paul and Christ-Emmanuel in a medallion between and above them belongs to the group with somewhat unfortunate name *non-pure* allegories⁷³, based on representations of historical and mythological figures, which personify certain concepts and phenomena. In contrast to the representation of the Communion of the Apostles in the church of the Virgin of Perivlepta, as well as in most endowments of King Milutin, such as Gračanica and Stari Nagoričani, where the processions of the apostles who receive communion under both forms are led by the apostles Peter and the young John the Theologian (fig. 8), which indicates the inspiration of this



Figure 8.

of the iconographic pattern depicting the Last Supper, at the head of two groups of six apostles in the Bogorodica Ljeviška are Peter and Paul (Fig. 9). In addition, separate scenes of communion with bread and communion with wine are placed on the side walls of the altar area.⁷⁴

A detail from the scene of Pilate's trial can be included in the symbolic representations from the wall painting of the Bogorodica Ljeviška, which was observed and described by Mirjana Tatić-Đurić: „In the scene of Pilate's trial, one warrior carries a shield on which a naked figure with a lion's mask is painted instead of a head. This mask descends almost to the shoulders, which had a pedestal, one might say, cast in metal.”⁷⁵ The lion mask on the gladiator's face, as it is assumed, had the function of intimidating the opponent, but it is not entirely clear whether an ancient habitus⁷⁶ in itself was simply cited here or the psychogogic effect of the image was encroached upon.

at the front door, as those who are there to usher the dead into paradise.” Lazar Mirković, „Old Christian tomb in Niš“, in: *Starinar V-VI/1954-1955*, Belgrade 1956, 71.

73 „It shows one or more personifications as main characters in combinations with persons and characters that are not personifications. There are all kinds of characters that can be imagined, such as, for example, historical figures, saints and biblical characters, who in turn can often be understood as personifications, such as, for example, Moses, the personification of the Old Testament.“ *Ibid*, 40.

74 Draga Panić, Gordana Babić, *Ibid*, 52.

75 Mirjana Tatić Đurić, „Jedna groteska iz Ljeviške“ in: *3oipaφ 4*, Belgrade 1972, 24.

76 „The theme of the naked gladiator with a mask revives in the best way the atmosphere of the era in which the scene of the trial of Pilate took place, in the capacity of historical reminiscence.“ *Ibid*, 26.



Figure 9.

From the tradition of depicting saints Varlaam and Joasaph, the depiction in the bell tower of the Bogorodica Ljeviška stands out. Until then, but also after that, the depictions of the hermit and the young Indian prince were mostly based on portraits and with the well-known dialogue about giving away property and leaving the world and going to the desert, written on open scrolls of two,

as it seems, holy men.⁷⁷ The layered nature of this tradition, which can be traced through the history of medieval wall painting from the Church of the Virgin Mary in Studenica, through Mileseva and Gračanica⁷⁸, to the depiction in the Church of the Virgin Mary in the Krepičevac⁷⁹ monastery from the 15th century, but also through numerous transcriptions and translations into the Slavic language starting from the period of Saint Sava and to Gavrilko Stefanović Venclović, can be seen on the basis of monastic principles, a tendency towards the symbolic expression of life's truths, but also an interest in ancient literature. Archbishop Danilo used this paradigm⁸⁰ in the framework of King Milutin's biography, in the episode about Nikodim's election as archbishop. *The allegory of transience and eternity*, painted in Ljeviška, represents a complex composition with elements of solar-lunar contextualization (white and black mice - days and nights).⁸¹ Such a complex context, in which ancient traditions played a significant role, had to represent the outcome of a highly developed culture. Perhaps the answer lies in the fact that painters arrived from Thessaloniki⁸², but maybe it also lies in a fact - that this high culture, on the wings of ancient traditions, went beyond the Byzantine borders. This would explain many other phenomena, similar to the ones described, such as the painting of Plato, Plutarch and the Ethiopian queen⁸³ in the *Vine of Jesse*, but also the overall wall painting of the Church

77 Dionysius of Furna describes Barlaam and Joasaph as follows: „52. St. Varlaam - old, white-bearded (November 19) and „53. St. Joasaph, Indian emperor - young, newly bearded, with a crown on his head, says (according to the scroll): The storm dries the dew from the leaves / pride extinguishes the light of the soul (26 . August).“ M. Medić, *Сѣтари сликарски ѣриручници III; Ерминија о сликарским вешѣинама Дионисија из Фурне*, Београд 2005, 421.

78 Svetozar Radojčić, „Jedna scena iz romana o Varlaamu i Joasafu u crkvi Bogorodice Ljeviške“ in: *Starinar III-IV/1952-1953*, Belgrade 1955, 79.

79 Basically, the story of Barlaam ie. the story about the rhinoceros in Krepičevac is the same as in Ljeviška, so it can be considered its direct analogy. The only and minor difference is one black and one white mouse (day and night) shown in the later version, while there are many of them in the older and exemplary composition. Branka Knežević, „Society and Art in Eastern Serbia from 1455 to 1586“ in: *Collection of Fine Arts of Matica Srpska 29-30* (1993-1994), Novi Sad 1994, 192; Ista, Krepičevac Monastery, Zaječar 2021.

80 Драгана Јањић, Горан Јаничијевић, *Св. Никодим Тисмански (Рефлексије монашкој бојословља у друјој љоловини XIV сѣолећа)*, Лепосавић 2021, 23.

81 Goran Janićijević, *Ibid*, 56-57.

82 „It is known that Thessaloniki was a prominent political and cultural center of Byzantium in the 14th century. Humanities and natural sciences, as well as art, were nurtured there. There was a circle of learned people who clearly and consciously considered themselves descendants of the ancient Greeks, called themselves Greeks and compared their city to Athens. The veneration of antiquity, an important fact in the history of Byzantine thought, manifested in different periods and with different strength, resulted in the appearance in Thessaloniki of the first elements of the modern Greek national consciousness, the main bearer of which was classical philology.“ Sotirios Kissas, „Thessalonica artistic family Astrapa“ in: *Зоираф 5*, Belgrade 1974, 36-37.

83 „The presence of Old Testament prophets, pagan philosophers and the Ethiopian empress next to Loza Yesejeva undoubtedly refers to the birth of Christ.“ Nadežda Davidović-Radovanović, „Sibyl the empress of Ethiopia in the painting of the Virgin of Ljeviška“ in: *Zbornik likovne umetnosti Matice srpske 9*, Novi Sad 1973, 29.

of the Bogorodica Ljeviška, in which numerous antitheses of ancient Hellenism and biblical-traditional Christianity⁸⁴, Byzantine models and some specificities of Serbian medieval culture rest in peace.

LIST OF ILLUSTRATIONS:

1. Church of the Virgin of Ljeviška in Prizren; southern aspect. Taken from: Endowment of Kosovo, Prizren-Belgrade 1987, 75.
2. Adoration of the lamb, detail: unknown archbishop. Church of the Virgin of Ljeviška, altar. Taken from: D. Panić, G. Babić, Bogorodica Ljeviška, Belgrade 1988, [VI].
3. Dinner in Emmaus, Christ as a priest. Church of the Virgin of Ljeviška, naos. Taken from: D. Panić, G. Babić, Bogorodica Ljeviška, Belgrade 1988, [XXII].
4. Sava I Serbian Archbishop. Church of the Virgin of Ljeviška, chancel. Taken from: D. Panić, G. Babić, Bogorodica Ljeviška, Belgrade 1988, [IV].
5. Personification of „Truth” or the New Testament. Church of the Virgin of Ljeviška, entrance to the chancel. Taken from: D. Panić, G. Babić, Bogorodica Ljeviška, Belgrade 1988, [XXXIX].
6. Last judgment, detail: weighing of souls. Church of the Virgin of Ljeviška, outer chancel. Taken from: D. Panić, G. Babić, Bogorodica Ljeviška, Belgrade 1988, [XLIV].
7. The Last Judgment, detail: sinners. Church of the Virgin of Ljeviška, outer chancel. Taken from: D. Panić, G. Babić, Bogorodica Ljeviška, Belgrade 1988, [XLVII].
8. The Last Supper, detail: Christ with the apostle John. Church of the Virgin of Ljeviška, naos. Taken from: D. Panić, G. Babić, Bogorodica Ljeviška, Belgrade 1988, [XVII].
9. Communion of the apostles with wine, detail: the apostle Paul receives communion. Church of the Virgin of Ljeviška, altar. Taken from: D. Panić, G. Babić, Bogorodica Ljeviška, Belgrade 1988, [XII].

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Драгана Ј. ЈАЊИЋ

Горан М. ЈАНИЋИЈЕВИЋ

КОНТЕКСТУАЛИЗАЦИЈА СРЕДЊОВЕКОВНИХ СПОМЕНИКА
КУЛТУРЕ КАО МЕТОДОЛОШКО ПОЛАЗИШТЕ У ОКВИРУ
ЊИХОВЕ ИНТЕРПРЕТАЦИЈЕ НА ОДАБРАНИМ
ПРИМЕРИМА СА КОСОВА И МЕТОХИЈЕ***

Резиме

Са свешћу о постојању граница свих појединачних метода, али и исцрпљености њиховог потенцијала током времена (Јан Биалостоцки), у савременој методологији историје као науке и њених дисциплина, нови истраживачки путеви се често заснивају на контекстуализација субјекта (у оквиру наше теме – споменици културе) у историјском (Јакоб Буркхардт), друштвено-историјском (Ханс Белтинг) или митолошко-религијском (Аби Моритз Варбург; Ервин Панофски) смислу са аспекта симболичког мишљења (Ернст, Касирер). Некада незамисливе методолошке комбинације постижу своје тренутне ефекте управо на основу посматрања и тумачења уметничког дела у контексту. Овакво профилисање предмета истраживања помирује супротности фактографије историјских извора писаног и споменичког карактера и херменеутике уметничких тумачења културно схваћеног феномена кроз симболизацију стварности. Хришћанско-хуманистички темељ европске културе представља свеобухватнији оквир за истраживање споменика српске средњовековне уметности у којима су помирили антички и изразито хришћански садржаји. Познат и адекватан пример наведеног, када је у питању наслеђе са простора Косова и Метохије, јесте црква Богородице Љевишке у Призрену, чији је контекст лако установити, односно ажурирати на основу познатих фактора: ктитор (Краљ Стефан Урош II Милутин), црквену управу и руководство грађњом и декорацијом (Епископи призренски Дамјан и Сава Хиландарац) и колективни аутор дела (Никола, Михаило Астрапа и Евтихије). Излагање методолошког полазишта засновано је на овом примеру из контекста уметничког дела (споменика културе) и на основу њега – испитивање методолошког потенцијала у односу на могућност тумачења неких других споменика средњовековне уметности од простор Косова и Метохије.

Кључне речи: контекст, историјско-уметничка херменеутика, иконолошки метод, Богородица Љевишка.

*Gerhard WILFINGER**

BM Leopold Wolfram GmbH & Co KG, 2521 Trumau/Vienna, Austria

LIVING STANDARD AND QUALITY OF LIFE IN URBAN

Abstract: The centers in cities have been the center and focus of urban life for a long time. As early as the Middle Ages, squares and streets played an important role in the development of trade, transport, supply and social interaction. These early forms of today's pedestrian zones testify to the functional interdependence and mixed use that has been characteristic of city centers for a long time. The fact that almost every town with more than 5,000 inhabitants now has a traffic-calmed area in the center is another indicator of the importance of inner cities. The original thinking behind this concept dates back to after World War II and was largely implemented in the 1960s. Increasing motorization in private transport and the concept of the car-friendly city required an increased need for traffic areas, which increased at the expense of general public road space. Before the paradigm of functional separation, spaces should be created that should only be available to pedestrians. Since experts from various disciplines also feared the destruction of urbanity through the massive increase in individual traffic, the demand for car-free streets and squares was increased. At the same time, this should counteract the desolation of inner cities and the decline in retail sales.

As a result, the question of the quality of living and living in inner cities increasingly became the focus of scientific and political debate.

Key words: standard of living, quality of life, city, country, work, housing, climate balance, urban planning.

INTRODUCTION

The subject of this paper is the standard of living and the quality of life in the city. The content of the paper includes four important questions:

1. standard of living versus quality of life
2. city or country in relation to sustainability
3. urban planning and its possibilities

* Dipl.-Ing. Gerhard WILFINGER, Project Manager BM Leopold Wolfram GmbH & Co KG, 2521 Trumau/Vienna, Austria, g.wilfinger@wolframbau.at

4. key Factor Quality of Life
5. feasible improvement approaches.

In 2022, the cities of Europe are like a magnifying glass on the coming developments. The European metropolises are population magnets, hubs for employment and culture, and of course they are political capitals. Change and competition are in the air. Europe's economic future depends to a large extent on a network of heterogeneous medium-sized cities that are smaller, more compact and more clearly definable than their counterparts on other continents. In a global comparison, Europe's cities do not have the appeal and power that go hand in hand with ten or more million inhabitants and the headquarters of global corporations. But they are world leaders in other ways. They play a leading role on important international stages such as culture, health, knowledge and education or sustainability. They often do very well when it comes to quality of life and resilience to crises. Life is changing rapidly and population growth is not an insignificant problem, although it is expected to slow. New technologies are emerging, such as smart living or autonomous driving, but climate change is also present. It will very well also depend on the cities whether and to what extent the spatial concentration of people and their activities contribute to preserving our planet.

The challenges are clear. Our cities stand for action and innovation. Which recipes for urbanization work and what role will future planned investments play in maintaining or improving living standards and quality of life? Where will these investments come from and will they also be possible in the future? The solution to these questions makes a significant contribution to ensuring that the move to the cities can be a success.

1 STANDARD OF LIFE VERSUS QUALITY OF LIFE

First of all, the explanation and conceptual differentiation of quality of life and standard of living (Glatzer 1992). The terms quality of life and standard of living contain different concepts and standards and related empirically based diagnoses for assessing living conditions. Standard of living is a socio-economic term and characterizes the model for overcoming the shortage society. The achievement of a higher standard of living, starting from a situation of mass poverty in the 19th century, is one of the great achievements of the 20th century. The sustainable achievement of an appropriate quality of life will be the socio-political challenge of the 21st century. Quality of life is a central objective in the modern affluent society, which has reached the "limits of growth". A further increase in the standard of living, as brought about by the past century, seems impossible, and there is no doubt that the negative effects of economic growth can only be mitigated by a social policy of quality of life.

The United Nations Center for Human Settlements (UN-Habitat), founded in 1978, predicts that 6 out of 10 people will live in cities by 2030 (Poppensiecker, Lifeverde 2019).

2 CITY OR COUNTRY

Is it better to live in the city or does the tranquility of the country promise a better quality of life? Both habitats in comparison.

2.1 Cities worldwide and in Europe

People hope that cities will provide them with income, housing, education, health and social contacts, but they don't always find what they are looking for. The European city is lively, diverse and sometimes contradictory. We in Europe do not have to live with the extent of the problems that cities in developing and emerging countries are confronted with. But here, too, there are problems of their own in cities, such as problem districts, and also poverty, unemployment and homelessness, as well as air pollution and other environmental pollution.

Street noise, traffic jams or a lack of green spaces can also have a negative impact on the quality of life in a city. Cities have to deal with this problem if they want to create a better quality of life and make their city more sustainable.

2.1.1 The diversity in our cities

The colorful mixture of small neighborhoods and large settlements, weekly markets and shopping malls, play streets and freeways, allotment gardens and green belts is there for singles and large families, for vagabonds and settled people, for the wealthy and the needy.



Quelle: Bild von Free pfotos auf Pixabay

The European city is „both and“, never „either or“. It includes the places and spaces that correspond to their common ideal - historic town centers, parks, Gründerzeit districts, market squares - and the diverse city quarters that were built in the post-war phase or on the outskirts of our cities. There have always been these breaks (Bauwelt Magazin 19, 2022). We have to deal with them and shape them. The European city is largely built to open up spaces where the poor beg and take heart, businesses grow and bankrupt, friendships are made and broken, creatives invent and fail, sleep and wake tired. The cities that are planned are made for their citizens. They should guarantee them the highest possible quality of life.

2.1.2 Liveable city

A liveable city can mean something different to everyone. For some, it is parks and cultural and leisure activities that make a city worth living in. For others, it is promising career opportunities or a well thought-out mobility concept, and for others, a good school system and hours of sunshine are crucial for a happy life in a city. All these factors contribute to the quality of life in a city and make it a place worth living in for society. Quality of life is perceived subjectively, but it is determined by factors such as health, safety, access to services, water, food, education and the opportunity to help shape the city (Dietrich,2022). Cities have to provide these living conditions. The Federal Ministry for Economic Cooperation and Development (BMZ) in Germany is committed to livable cities in its partner countries. It is about participatory and integrated urban planning, building a healthy, safe, just and environmentally friendly urban environment and resilience to crises of all kinds.



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The World Health Organization (WHO) defines quality of life in general as “an individual’s perception of their position in life in relation to the culture and value system in which they live and in relation to their goals, expectations, aspirations and concerns (Poppensiecker, Lifeverde 2019).

It is a broad concept, influenced in complex ways by physical health, mental state, personal beliefs, social relationships and relationship to key features of their environment.”

Personal quality of life is also influenced by the environment and living conditions. A good quality of life in a city therefore contributes significantly to the health and wellbeing of its citizens. It is therefore in a city’s own interest to enable its citizens to lead a healthy, happy life worth living in.

2.1.3 Better living in the countryside

Anyone who is close to nature lives in a house in the countryside surrounded by forest and birdsong. The air is better here, it’s quieter, you can grow your own vegetables in the self-sufficient garden and everything else is available from the organic farmer around the corner.

Country life simply has to be more sustainable and healthier than life in a noisy city that smells of petrol. It’s not that easy. The city has some key eco-advantages.



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2.2 Ecological consideration

1. Better climate balance: In the city, most people live in an apartment instead of in a single-family house. More people are accommodated in less space, thus saving landscape, energy and other resources.

2. Less CO₂: In the countryside we are dependent on private transport, which is almost superfluous in the city thanks to public transport.

City and nature are not mutually exclusive (valuable biotopes). If you take a closer look, you can also discover real biodiversity hotspots in the city. In Berlin, for example, over 20,000 animal and plant species have settled in the parks, gardens and traffic islands (Sven & Sig 2019).

2.3 Where is the better living space?

Is it better to live in the city or does the tranquility of the country promise a better quality of life? Both habitats in comparison.

Many villagers commute to the city every day to work. Despite the train, a very climate friendly means of transport, many have to drive to the next train station by car. When it comes to mobility, the city is way ahead of the country. You don't need a car to get from A to B. An S-Train-, Underground- or bus station is almost always within walking distance. A lot can also be done easily by bike. Here, big city life scores not only in terms of CO₂ balance, but also in terms of time savings and money. If you don't have to commute, you can start your day straight away and you don't have to spend on cars and petrol. Many villages only have limited access to public transport. Many dream of owning their own house in idyllic green surroundings, but the reality is different. More and more people are moving to the cities and their suburbs. Only every sixth Central European lives in the countryside. The variety, the cultural and leisure activities and the events in the big cities are just too attractive. The rural exodus has us firmly in its grip. At the same time, it is becoming increasingly apparent that city life with its hectic pace, the noise and the associated constant stress is anything but good for our psyche and health. Urban dwellers are much more at risk of developing depression or anxiety than rural dwellers. How does that fit together? Is village life really better and healthier? And can you say that in general? When compared, both have their advantages and disadvantages (Sven & Sig 2019).

It is important to recognize that some facts are not as clear-cut as they first appear. Of course, our big cities are not eco strongholds, but close to nature does not automatically mean close to nature.

3 URBAN PLANNING AND ITS POSSIBILITIES

3.1 Loss of citizen engagement in urban planning

The European city relies on citizens getting involved in their environment. At best, this happens because they want to achieve something for the community. These people were largely lost to this competition. Many do not understand everyday life locally because they may come from a different culture, many are afraid of change or distrust the establishment and many are not heard because they cannot express themselves. All people who have no voice, those people who have different cultural values or people who are angry with „the state” need functioning competence.

Everyone has completely different needs and yet they need one thing: urban planners who work with them and not against them (Bauwelt Magazin 19, 2022).

3.2 Urban planning and money

Some European cities are prosperous, others destitute (Bauwelt Magazin 19, 2022). But almost all of them have one thing in common: as a rule, the city planners do not have the financial and planning sovereignty over the land and buildings. The land and the city have become cheap goods, and you can see that in our cities. We need more business and real estate skills from urban planners so that we can also implement what we define in urban development concepts and plans with high quality. Urban development geared towards the common good and sustainability urgently requires competent, long-term thinking and self-confident city administration and politics. Privatization of services of general interest is a dead end and cities do not manufacture products.

3.3 Planning options

Most city designers only manage small-scale resources. You can set up a bank here, decide on the control system there. That's wrong, because they actually have to use their specialist knowledge to see and organize the urban space, consisting of the street, the materials, the house facades, the greenery, the lighting and the atmosphere, in context. In the best case, the political decision-makers also understand this.

Do all the norms serve the „good life“ and the people?

SEVESO III, BASEL III, DIN standards, immission control and many other regulations have a massive impact on the shape and order of our cities (Bauwelt Magazin 19, 2022).

They often try to organize security between the world of work or finance and the world around them. They set rigid boundaries where possibilities would be important and do not take into account the differentiation of the framework conditions. They all protect people, but none focus on the whole person. Planners must know these regulations, work with them and at the same time develop them further so that they become good, supportive rules for living together again.

4 KEY FACTORS LIVING STANDARD AND QUALITY OF LIFE

There is no general answer to the question of quality of life. Because whether city life or country life is better is an individual matter. The fact is, while city life lures with all sorts of leisure activities and variety, country life offers not only lots of fresh air but also much more peace and space to develop. Above all, families with children appreciate the surrounding nature. Whether it's a self-built tree house in the forest or racing in the field next door - in the country children can „simply“ play outside. In a big city this is hardly possible without unrest. Everyone knows each other in most villages. Togetherness prevails here, while anonymity

dominates in the cities. While some appreciate it, it even makes others sick. Social density meets social isolation here. Urban dwellers suffer from depression about one and a half times more often than rural dwellers. The risk of schizophrenia is even twice as high. Why? City dwellers experience more stress. Not only because it's louder and more hectic here, but also because they feel lonelier (Sven & Sig 2019).



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But the city also has its advantages in terms of quality of life. Unlike in many villages, doctors, schools and kindergartens are practically on the doorstep. Everything can be done here without much planning. And all this comfortably without a car. There are vegan restaurants, organic supermarkets on every corner, bulk shops, cinemas, pubs, bars and a wide range of cultural activities. In addition, the big city offers suitable vacancies for almost every job. The annoyance of long commutes is no longer necessary and creates space for beautiful experiences. However, the good local and long-distance transport connections offer the opportunity to travel very comfortably and in an environmentally friendly way.

5 FEASIBLE IMPROVEMENT SOLUTIONS

5.1 Conceptual approaches to urban development

5.1.1 Develop contemporary models

Urban planning concepts arise again and again in specific historical situations. Today's generation of urban planners should also develop up-to-date, contemporary models. This in the knowledge that the design of the city has become increasingly complex and is constantly changing with society

(Bauwelt Magazin 19, 2022). The guiding principles must be based on the complex regularities of the location and design a viable vision for the city of tomorrow.

5.1.2 Allow complexity

Urban construction, urban planning and urban development are complex processes in which not only architects, urban planners and engineers are involved, but also politicians, institutional and private investors, creative people, sociologists, climate researchers, lighting designers, event managers and more than ever the urban citizenry itself. Design requires a confrontation with the whole, complex city and must define qualities for it both at its edges and in its center. Those involved in urban planning share responsibility for diversity and social peace, for economic prosperity and the ecological sustainability of our cities.

5.1.3 Continue story(s)

It is important to listen to the history of the city, to understand how it came into being, to connect with it or, where the substance no longer corresponds to the rules of the present, to develop a new layer. Modernity is one of these stories today, our actions today will also be one of these stories tomorrow. Contemporaneity in urban planning means taking strong positions with which an international urban society can be developed. At the same time, however, design should also be understood as a process of discovery and research based on historical foundations.

5.1.4 Check and adjust the density concept

Density has become a relative term. It has decreased in many European cities, in some due to lower demand, in many due to higher living standards. The physical density of the city has to be checked and readjusted again and again at the edges and in its core with a view to social, functional and ecological requirements.

5.1.5 Take the challenges of climate change seriously

Cities need to be designed to reduce greenhouse gas emissions and adapt to climate change. The acute threat to our quality of life requires a careful balance of built and free spaces and demands a compatible mix of functions with the shortest possible distances. Understand the landscape as an urban element! Built spaces and landscapes are complementary components of urban life and have long ceased to be „opponents“. The landscape has become an equal partner in the urban fabric. Urban life also takes place in rural areas, i.e. wherever we are connected to the data and information networks that hold our society together. Cities cover only three percent of the world's surface, but consume over 70 percent of the world's resources. Almost three quarters of cities

are already suffering from the effects of climate change, such as floods or heat waves. However, cities continue to grow steadily, by 2060 the total usable area of buildings will double, especially in the global South and especially in Africa and Asia. 40 percent of all energy-related CO₂ emissions are associated with the construction and operation of buildings. So there is an urgent need to rethink the way we build and with what materials (Dietrich 2022).

5.1.6 Strengthen the emotions and atmosphere of the city

The city cannot be reduced to the height of the eaves and the material and color of the façade. Every living city is mostly made up of the stories of the past and the present expectations of the future (Bauwelt Magazin 19, 2022). Both must find expression in urban planning and architecture in juxtaposition, so that the residents of a city can continue to write their history. This also includes an emotional understanding of the city, which cannot be controlled technocratically, but includes the development of atmospheres (Schubert 2005).

5.1.7 Organize opportunities for participation

Above all, the city is alive. Urban life takes place away from the lines and building blocks that we set. So that planning does not distance itself from society, it is necessary to organize participation and responsibility for the city beyond formal legal forms of participation and to practice governance as the basis for a diverse urban society.

5.1.8 Adapt urban development training to the changed framework conditions

This situation requires further development of urban planning education. The challenges in the fields of urban development must be named in their complexity and taken into account. Planners who will shape cities in the future and continue to build existing cities must learn to deal with this new “obscurity” and be a lively and knowledgeable part of the city negotiation process. They must be enabled to provide orientation for possible developments with humility before the matter and self-confident positions. A well founded education in urban development must bring design and moderation, history and future, methods and instruments into an appropriate balance. An overload? For a single person safe. Certainly not for a team that brings together talents from different disciplines.

5.1.9 Inhabited Places

„Cities are for people, not for cars. For him, a sustainable city is above all a people-friendly city,” says Jahn Gel (Gehl 2022), who is considered the most influential urban planner in the world.

Car-free zones were set up in Moscow and New York on his advice, Bogotá created bike lanes and thanks to him his hometown of Copenhagen is the most

bike-friendly city in the world. Gehl criticizes the massive flood of data in most cities in terms of traffic flows, but the little knowledge in the administrations of how people can use their city as pedestrians or cyclists.

5.1.10 Respect the human scale

When asked how one recognizes a city worth living in, Gehl has a simple answer: „Look how many children and old people are out and about on the streets and squares. A city is worth living in if it respects the human dimension”.

5.1.11 Mobility as a central challenge

Another important aspect of quality of life is mobility. The demand for mobility increases as the urban population grows. So we need sustainable, zero-emission mobility concepts that are affordable, safe and accessible to everyone. Germany is therefore promoting the „compact city” or „city of short distances” approach. To this end, the BMZ supports initiatives such as the Transformative Urban Mobility Initiative (TUMI), the leading global implementation initiative for sustainable mobility (Dietrich, 2022).

5.1.12 Circular economy creates sustainability

A cross-sector transformation towards a circular economy and consistent waste avoidance can save up to 20 percent of CO₂ emissions. Circular economy and green jobs open up new opportunities for more sustainable consumption and production systems and are closely linked to other major challenges such as water scarcity and management. This is why the implementation of the circular economy in cities at all stages of development is so important (Dietrich 2022).

5.2 Scrutinize neighborhood models

In Austria, city dwellers have more money for the „beautiful things in life” than in any other EU country. This is ensured by good public services in the areas of housing, transport, education and health. Nevertheless, due to rising rents, this proportion is also falling in Austria. This negative trend should be fought with an expansion of social housing.

5.2.1 Model Austria

Exploding rents, traffic chaos, educational misery, that’s what you know from many big cities in Europe (Holzner 2022). Corona has exacerbated the problems in many places. The quality of life in urban centers depends, in addition to the general level of real disposable income, to a large extent on public services in the areas of housing, transport, education and health. Austria’s major cities are leaders in this respect and therefore offer their residents the highest standard of living in a European comparison.

This is the result of a study that Mario Holzner carried out together with his colleague Roman Römisch (Holzner Mario) at the Vienna Institute for International Economic Comparisons (wiiw). We looked at what most influences the quality of life in major European cities. Conclusion: Because the welfare states in Scandinavia and Central Europe invest much more in public services than their Anglo-Saxon and Southern European counterparts, people there also have significantly more money left over to live on. At the top are Austria's major cities. The main factor is social housing. A relatively high proportion of public or non-profit residential property dampens rents in this country. Conversely, residents of cities with a highly commercialized housing market have to save on private consumer spending. A good example of this is Italy.

5.2.2 The „Better living and public services” index

The index can be used to derive what standard of living a city can afford. Using the „Urban Public Services and Liveability Index” (UPSLIde), Mario Holzner examined what people in Europe's big cities spend their money on. Large cities see themselves as urban centers with more than 100,000 inhabitants. In Austria, in addition to Vienna, these are also Graz, Linz, Salzburg, Innsbruck and Klagenfurt. The index shows what proportion of household income has to be spent on the basic needs of housing, transport, education and health and how much is available for those goods and services that make life worth living in comparison. The policy of public services has an influence on the costs for housing, transport, education and health. It also indirectly determines how much money people have left for vacation, gastronomy, culture or sport, i.e. the beautiful things in life (Holzner 2022).

5.2.3 Negative trend

In the long term, however, the trend in major European cities is clearly negative, including in Austria (Holzner 2022). The proportion of consumer spending on the finer things in life (measured against spending on basic needs on average across Europe) fell from around 70 percent at the end of the 1980s to less than 50 percent in the 2010s. In Austria it fell from a good 77 percent in 1999 to around 70 percent in 2015. An important reason for this general trend is rising housing costs. In Austria's major cities, however, this European trend was cushioned by falling transport costs. In the Netherlands, on the other hand, transport costs for households in the big cities in particular have recently risen sharply, which has led to an even greater decline in spending on the finer things in life. In any case, what is striking is the much higher level of household expenditure on the finer things in life relative to expenditure on services of general interest in the large cities of the welfare states of Scandinavia and Central Europe compared to Southern and Eastern Europe, where there has been a different institutional development.

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Герхард ВИЛФИНГЕР

ЖИВОТНИ СТАНДАРД И КВАЛИТЕТ ЖИВОТА У УРБАНОМ РАЗВОЈУ

Резиме

Да би се преокренуо тренутно опадајући тренд даљег развоја животног стандарда, а самим тим и квалитета живота у нашим градовима, биће неопходно даље проширивање јавних услуга од општег интереса. Конкретно, расту кирија за станове се мора супротставити снажном експанзијом социјалног становања. Важно је да буџетске празнине изазване корона вирусом не иду на рачун јавних, а посебно општинских служби од општег интереса.

Велики градови и њихове општинске инвестиције су од посебног значаја, не само због огромних изазова зелене и дигиталне трансформације у густо насељеним урбаним подручјима. Локални јавни превоз, становање, образовање и брига о деци су услуге које градове чине привлачним и омогућавају људима да живе боље. Њихово проширење користи не само становницима градова, већ и људима у околним подручјима, што се недавно показало у пружању централних здравствених услуга током пандемије Цовид-а 19. Тренутни развој цена енергије након украјинске кризе то чини још јаснијим. Заједнице посебно могу дати велики допринос стабилизацији крхког економског развоја, интензивирању борбе против климатских промјена, а тиме и смањењу зависности од фосилних горива. Заостатак инвестиција на општинском нивоу, као што је уочено након глобалне финансијске кризе због погрешне политике штедње, овог пута треба избегавати колико год је то могуће.

Кључне речи: животни стандард, квалитет живота, град, држава, рад, становање, климатска равнотежа, урбанистичко планирање.

*Milivoje G. PAJOVIĆ**

Directorate for Training and Doctrine, Serbian Armed Forces General Staff

FUNDAMENTAL RESEARCH AS A STARTING POINT APPLIED AND OTHER RESEARCH

Abstract: Fundamental research are basic. By their very nature, they provide a basis for knowledge about certain phenomena and define basic rules, which can later be built on and further developed through further research of the same type, or through applied researches. The results of these researches primarily concern theory, so most often and as a rule the goal of these researches is scientific explanation. Applied research continues from fundamental research in a logical sequence of inevitable practice. Based on the theory and evidence of fundamental research, the goals of applied scientific research set the task of explaining and discovering the possibility of practical application of the results of fundamental research. Therefore, models, prototypes and projections are often applied, as well as general rules that have been tested in practice.

Fundamental and applied research represent two separate but pervasive categories that have their own distinct differences. Despite all the overlaps and intertwining, these researches carry different expectations and have different social effects, such as differences in the judgment criteria related to the assessment of research success or failure, then differences in the effects on social movements and differences in the organization of research implementation, especially in the degree of autonomy in relation to political and economic interests and goals.

Key words: fundamental, (basic, primary) applied research, practical results.

1. INTRODUCTION

All scientific research and all practical and applied results of human mind, which are put to the function of human needs, are directly or indirectly based on the results of fundamental (basic, primary) research. In the modern world of accelerated and multiplied events, as a rule, priority is given to applied research, where the focus of attention is the speed of the researcher's response to the practical problems of society or special research commissions, but also

* Assistant professor, milpajovic@gmail.com

economy in time and invested resources. According to the above, it is clear that fundamental research has a vital role in the corpus of the scientific research system and that another type of research cannot replace it. On the other hand, it itself, in some areas of human life, can play the role of applied research with its results. At the same time, based on the theory and evidence of fundamental research, the goals of applied scientific research set the task of explaining and discovering the possibility of practical application of the results of fundamental research. Therefore, models, prototypes and projections are often applied, as well as general rules that have been tested in practice.

Conditionally, it can be said that fundamental research is conducted without a narrowly defined idea of practical results and goals. Rather, it could be stated that it is about the intention to understand reality, the natural and social environment and processes and phenomena, that is, about the desire to reach general knowledge, principles, truths and rules. Although general knowledge from fundamental research cannot provide concrete answers to numerous problems of a practical nature, which are dominant in people's daily lives, general knowledge provides the basis for applied research. Since research includes numerous activities, it is inevitably important to ensure the observation and description of a phenomenon in the early stages of its appearance, and then to observe, describe and understand its regularities.

Although one can always talk about the peculiarities, that is, the specifics of fundamental research compared to others, it can also be said that all scientific research is more or less equal in its basic principles, goals, motives and structure. For this reason, it seems more justified to shed some light at this point regarding the treatment of fundamental research in the contemporary context of science and the understanding of the place and role of this research in overall human knowledge, as well as the relationship between fundamental and applied (applied) research. Some considerations from foreign literature and from countries where there is a lively debate about the place and role of fundamental research, that is, about the relationship between governments and financiers of such research, were used for this (Remedios, 2013).

Despite his apparent disinterest in practical purposes, every great scientist has a deep belief that knowledge is the essential value of life. He believes that a greater understanding of general phenomena will lead to greater well-being of mankind. The time devoted to research and the belief in the justification of the goals justify the effort, because the history of science confirms the fact that basic research, although it does not aim at practical goals, is by no means impractical research. Nevertheless, fundamental research in a way is moving towards the unknown through numerous hidden and uncertain paths. These researches usually involve large teams of researchers. Large scientific projects must be supported completely and to the end, which are very often not small expenses, where concrete and usable results are not immediately visible. It is possible very often that only a small or the smallest part of the research results has practical use.

2. RELATIONSHIP OF FUNDAMENTAL AND OTHER RESEARCH

When we have in mind the idea of fundamental research, the thought inevitably arises about the complexity of this type of research, which primarily rests on complex thought processes arising from an idea, from a recognized problem that created that idea, that is, from the overall experience and knowledge of the researcher. Inevitably, the question arises whether researchers in basic, fundamental research, in the process of scientific work, also use some applied research, but which in a general sense do not give the entire research the epithet of fundamental?

The answer to this question is not simple, but it can certainly be assumed that in the modern age there is a permeation of these researches and that numerous fundamental researches have in their process sub-researches or experiments that are of an applied nature. Because the very term research, no matter what prefix it is marked with, implies research and development, i.e., every fundamental research has some application and purpose, and from it, if successful, applied research will inevitably result, which is narrower in terms of problem coverage. Hence, within the framework of current historical, philosophical, sociological, economic, and other research in science and technology, there is a strong tendency to reduce the differences between fundamental and applied research, or between science and technology. Recognizing the differences between fundamental and applied research improves the chances for rational management and funding of research so that the sciences serve society as a whole, and not just the special interests of certain groups, such as private companies, political movements, religion, the scientific community, or others (Roll-Hansen, 2009).

Fundamental and applied research represent two separate but pervasive categories that have their own distinct differences. Despite all the overlaps and intertwining, these researches carry different expectations and have different social effects, such as differences in the judgment criteria related to the assessment of research success or failure, then differences in the effects on social movements and differences in the organization of research implementation, especially in the degree of autonomy in relation to political and economic interests and goals (Roll-Hansen, 2009).

The measure of the success of the results of fundamental research is indicated by the number of new phenomena discovered and explained, whereby new ideas of general interest are opened and developed. General scientific interest is determined primarily within a discipline that is current in some way. On the other hand, the primary criterion of success in applied research is a concrete contribution to solving practical problems (Danilović, Tančić, Bogavac, 2019). Practical technical-technological success is the main criterion for evaluating the success of applied research, both in terms of initial projects and in terms of demonstrating the final results.

Fundamental research, as has already been said, reveals phenomena, processes, cause-and-effect relationships and rules in nature, society and human thought in order to improve and create basic human knowledge, which further serve as a basis for applied and developmental research. They do not have immediate economic and commercial goals. Precisely for this reason, in order to determine the possibility of using the results of some fundamental research, bearing in mind its practical application or in order to find a new method or a new way of achieving a special predetermined goal, applied research is carried out, which always starts from existing knowledge in order to solve special problems.

There are enough concrete examples in the social sciences, and especially in the natural sciences. Today, we are witnessing numerous applied researches in the natural sciences, for example in medicine, when solving specific problems related to the treatment of humans or animals. However, before that, it took decades and even centuries and numerous fundamental researches that were carried out on the collection, classification, description of man and his psychophysical structure and characteristics and numerous individuals of the plant and animal world. When the *Atlas of Human Anatomy* appeared in the middle of the 16th century, it represented a turning point in the development of scientific thought in medicine because it was the result of specific anatomy research conducted on actual experiments and dissection of the human organism (Vesalius). This is how important biological scientific theories such as the theory of evolution or genetics were created, which provided the basis for all other applied research that did not have a general scientific goal, but a practical and concrete task of solving the problems that arose. That is why fundamental research has the task of providing general and complete answers by producing theories that contain proven regularities and true descriptions. It is possible that researchers in fundamental research have no initial idea about the practical application of their results, but it is evident that without their basic research there would be a general social regression, stoppage of industrial development, stagnation in education, health, economy and other applied areas. In this way, social and scientific satisfaction of the researcher is achieved in an indirect way by using the basics from basic research in enriching people's quality of life (Hsieh, 2005).

Developmental research is based on the results of applied research, which are also called expert or development-research. This research further develops and refines practical solutions and achievements of applied research. Very often, various technical-technological innovations that arose as a result of practice requirements, as an attempt to solve a problem more efficiently or as an upgrade of existing ideas that arose as a result of active thinking about the possibilities of improving existing solutions are classified as developmental research. There are also opinions that developmental research is, in fact, prognostic in nature, i.e., that it is a combination of fundamental and applied research that relates mainly to the future, i.e. on the future state of the subject being studying

(Sakan, 2006). In any case, in an indirect way, developmental research also rests on the theoretical premises of fundamental research or their process is checked in relation to achievements in the theory of one science or scientific discipline.

Development research is carried out by institutions whose activity is research and development. Research units can be scientific-research and research-development institutes or centers with research-development units that are part of it and whose basic or predominant activity is scientific research or research-development. In addition to researchers, expert associates participate in the process of development research and participate directly with researchers in the execution of research and development tasks, while technical staff perform the technical part of the research and development task, under the supervision of researchers. In addition to these, there is also support staff that performs administrative, financial and personnel tasks whose work is directly related to development research (Krippendorff, 2009).

Developmental or professional research represents systematic work, based on knowledge acquired through basic or applied research, that is, on practical experience. That experience is aimed at introducing new or significantly improving existing procedures, products and services. Developmental research, which is also called technological improvement, are all activities that occur between invention and production, such as experimentation on drawings or development of prototypes, experiments, pilot projects, models, etc. These researches have a very practical goal and their basic feature is a clear purpose, that is, a direct and quickly achieved benefit in a narrow area.

3. ACTION RESEARCH

Action research, according to the general meaning of this definition, is an organized process of examining some phenomenon that is carried out for the needs and with the intentions of the researcher who undertook the research. Researchers who engage in action research are looking for what will improve their own experience. For this reason, action research has positive effects on researchers and on their current and future experiences. It is obvious that the most important thing is that these researches are always the most important for the one who conducts them, and who actually models them. The benefit is guaranteed because the essence of each research project is determined by the researcher who is also the primary user of those results, thus perfecting his research procedures. Action research is aimed at improving some practice and it contributes to the development of practical theories. That is why various methods are used in social science research.

Discourse or discussion is the basic method in action research. Discourse means joint consultation about what needs to be done at some stage of the research. In addition, surveys, case studies, analysis of lifestyles, analysis (content) of documents and others are also used. In addition to methods, instruments

such as questionnaires, judgment scales, observation protocols and others are also used. Action research can thus be carried out by individuals or groups that share the interests of solving a common problem, or by an entire institution. Whatever the idea of action research, it generally includes the following stages of the process: determining the focus of research, clarifying the theoretical basis, defining research questions, collecting documents (data), analyzing documents, communicating results and taking further steps based on the information obtained (Sagor, 2009).

All scientific research is carried out within a planned research process that has its own stages and phases. It is important to emphasize here that it is not a rare phenomenon that in the process of scientific research certain phases are neglected or completely omitted, and therefore the research results are often full of shortcomings and inconsistencies. On the other hand, due to certain specificities, the processes are different in research in the natural and social sciences, so it is possible that certain phases do not exist or their order is different. But in any case, the research process represents a unique, meaningful and logical whole that has its own internal organization and parts that stand in cause-and-effect connections and relationships and that consists of theoretical and empirical parts (Milosavljević, 1975).

As Vujević states that, due to the specificity of social research, it should be kept in mind that all activities within the process are not necessary, but only possible in specific research, and that the development and application of these activities must not be templated but the result of constructive creative thought activity. Because the research process is a unique activity in which the theoretical part, composed of phases, determines what will be measured empirically, while at the same time, the results of empirical measurement determine the validity of the theoretical reflection. In the process of fundamental scientific research, each work should begin by recording and activating existing knowledge (Vujević, 2006). This inevitability is logical and realistically the only acceptable because in human knowledge and experience there can hardly be anything from the known reality that is not included in some way in some part of the previous research at any level or in any scope.

4. SPECIFICS OF PROCESS OF SCIENTIFIC RESEARCH

If the activities of the research process were to be grouped in the most general sense, then it is necessary to talk about three basic entities. In the first place is the creation of an initial hypothetical framework based on existing theories that include the existing scientific fund and existing knowledge about the subject and problem of research and about the phenomenon itself that is being explored. The second part belongs to practical and empirical activities related to collecting the necessary information about a certain reality, but also about looking at the existing experiential records about the same type of problem.

The third unit includes the effort and initiative to complement the research results into the existing scientific fund, to have a certain degree of relevance and validity and to define a final theoretical or practical purpose for them.

Conceptualization is important for the process of fundamental scientific research as a general idea of research that contains all the phases of the process tentatively divided into stages, from identifying the problem to communicating the research results. Part of the stages of this process takes place before the research project is created, and the rest within the project. A detailed and very clear description of the conceptualization, which can be applied to fundamental research, can be found in Termiz's statement. He states that it is most appropriate to observe the beginning of conceptualization through the stages of the first stage that exists before the start of the research project, which includes the perception and recording of problems, identification and description of problems, determination of the research task and formulation of the conceptual project (Termiz, 2009). It is quite clear that this is a preparatory stage that includes the mentioned stages and that it is quite justified to conclude that in this stage the existing scientific and empirical, theoretical and practical knowledge is exploited. On the basis of this knowledge and experience, and through the observation of important relationships and factors, the initial scientific parameters are identified (Fajgelj, 2010). Here, in the first place, we think about the initial ideas about the research problem and about the phenomenon from which the problem arises, while a concrete and precise assessment of the justification of the research, the actuality of the problem, the possibility of researching the subject, goals and the like, will be realized in the later stages of the next stages. Before the conceptual project, a conceptual sketch is created that contains the most important ideas described in abbreviated scope, which refer to the preliminary determination of the subject, assumed research goals, basic hypothetical views on the phenomenon, problem and subject of the research, the significance of the research is stated, as well as which methods and techniques to be applied and required time, personnel and resources (Milosavljević, 1982).

The basic idea is operationalized and determined more closely through the research project, which is the most important scientific document that is tested and later, as indicated and observed, corrected and refined. The research project that represents the essence of the scientific research process is an intellectual work of the first category. It is a complex mental construct that requires academic and professional virtues and abilities, rich scientific erudition and the ability to think and act creatively and inventively. The initial research project, as stated in the already cited part by Milosavljević and Radosavljević, contains, among other things, a preliminary determination of the research subject in which the topic on which the research is conducted is defined and briefly described, the desired goals of the research are formulated, that is, those to be reached possible to come. In addition to the above, in the conceptual project there are also hypothetical positions on the research problem and on the subject that will be the focus of the researcher's scientific concentration, which practically

gives hypothetical positions on the observed phenomenon. The significance and justification of the research precedes the definition of research methods and techniques, and the project also contains technical details related to the required time in which the research will be carried out, as well as the necessary funds and the list of researchers who will carry out the process.

5. TRANSMISSION OF EXISTING KNOWLEDGE

Since, as stated earlier, existing knowledge must be taken into account, regardless of how that knowledge was obtained, when looking at the possibility of researching a phenomenon, the idea of future knowledge is also in mind. The connecting, transmission function of the research project in the conditional thought model performs the transfer of existing knowledge into enriched new knowledge that is reached in the research results through hypothesis testing and in accordance with the set research goals. In this way, different parts and phases of the process are connected, i.e., theory, methodology and actually unknown and unexplored phenomena contained in the problem and subject of research. Directing the research as a function of the project is realized from the beginning of the collection, arrangement and interpretation of data to the description and explanation of the phenomenon and the problem and the subject of the research. Guidance also refers to the procedure for choosing research methods and techniques, but also to conclusions based on the knowledge gained during data processing. Finally, the guiding function of the research project is visible in the theoretical and operational definition of the subject.

However, each individual part of the research project, just like the project as a whole, has its own guiding and coordinating function. Researchers know that the verifiability and reproducibility of a research is ensured by consistently following the sequence of activities during the scientific research process. For example, in the phase of data collection, arrangement and processing, the guiding factor is precisely the framework imposed by this phase and this stage as part of the research project, and a systematic and verifiable procedure will ensure that the population, sample and processing units are clearly seen. The coordinating and synchronizing function of the project comes to the fore from the very beginning of its creation. First, coordination and synchronization take place in the researcher's imagination. This does not only refer to operational and technical details, but also to conceptual and thought synchronization of logical and semantic entities that are part of the problem and subject of research, goals or hypotheses, that is, to the conceptual justification and expediency of research.

Although thinking about a phenomenon precedes research itself, formulating a problem begins the scientific process. In the researcher's opinion, the problem may arise as a result of active reflection based on theoretical and empirical experience, and it may also be "imposed" from the side, as a certain concrete task resulting from some phenomenon, that is, the need for new knowledge about

that phenomenon. However, when choosing a research problem, it is necessary to enter the process of scientific research with, conditionally speaking, a structured problem that should satisfy certain principles that make it credible and worth the effort that will follow. The problem should be current and new, and original in a specific way. Researchers strive to make an original contribution to science, not only because of the needs of science itself and solving some unknown, but also because the personal credibility of the scientist is strengthened by reaching new knowledge and making a contribution to science. In addition, it is necessary to show that the problem has its practical applicability through the formulation of the problem, whether it is research in fundamental or other research that has concrete usability in everyday life.

6. REPORTING ON RESEARCH AND RESULTS

The last stage represents the communication of the research results and the presentation of the scientific knowledge that was reached during the research process. The report on the research results is narrower in scope and treats primarily scientific problems at different levels of knowledge. The role of the achieved new knowledge in the overall fund of science is described, but new questions and scientific dilemmas that were opened during the previous process are also communicated. The preparation of this report begins at the beginning of the hypothesis test and its essence is to confirm the hypothesis and prove the truth of its positions, or, otherwise, to prove that the indicators refute the truth of the statements in the position of the hypothesis, which is certainly checked through the provision of collected data.

In addition to the report on research results, it is common in science to write a research report that is broader in scope and contains descriptions of practical procedures, but also a description of the essence of the research process with stated and described stages and phases, main problems, methodological issues, conclusions, etc. The report is an integral part of the research process and by default has a strictly defined structure and content. The report inevitably states the conclusions about the research that preceded the specific research on which the report is being compiled, then the results that were reached during the research with a description of all the factors of the structure of the conclusion that make up that conclusion. Therefore, all the main and auxiliary subjects that give the conclusion an outline and essence are listed, such as reviews, tables, graphs, measurement results, conclusions from hypothesis testing, etc. In addition, there are findings that are inductively arrived at during the writing of the report itself. Then it is more generally concluded on the basis of concentrated experience that has its proven empirical value and its full theoretical confirmation since the research process has just been completed (Kracauer, 1952).

It is usual to have a preliminary report on the results of the research and its role is to indicate the direction and essence of the conclusions reached

during the research. In contrast to this type of report, there is a final or final report that was requested and funded by whoever initiated the research or its implementation. With that, the report is submitted to the scientific public and the report itself gets an open and general social and scientific form and role. There are also phase or stage reports that partially describe some parts of the research process and the results that result from those parts. In the basic contents of these partial reports, Milosavljević and Radosavljević also include spatially defined reports, problem or thematic reports, reports related to the type of research subject and partial reports by data properties.

7. CONCLUSION

In fundamental research, there are numerous specificities that are related to the ways of reaching scientific knowledge and scientifically relevant conclusions. Many important theoretical fundamental discoveries have resulted from experiments conducted with different initial goals and intentions. Because in fundamental research it is not easy to predict the results of the research, but if during the scientific process a solution to the problem appears as a side product, the researcher in basic research will recognize it and use it. This enriches the scientific fund and completes the total social knowledge, which ultimately gives the possibility of practical application of that knowledge.

Perhaps the greatest profitability of fundamental research is reflected in its application in the content of higher education institutions where, in addition to direct research and work on scientific projects, the education of scientists is carried out precisely on the content of basic, basic research. The essence of education based on examples from fundamental research is to train the scientific staff to observe phenomena, to conduct experiments on them and to analyze them objectively. Thus, objectivity stands out as the main and leading principle in fundamental research, and in the institutions where these researches are mainly carried out, there are also objective opinions of other researchers, which ensures the verifiability of theories, and therefore the validity of conclusions about research results.

When it comes to the responsibility and challenges posed to the researcher in fundamental research, it can be said that his commitment and scientific curiosity as initiators of research are also the main risks that appear in the research process. A researcher in basic research who does not respect the rules of science and/or is not consistent in the application of scientific principles can mislead researchers in applied research by setting up new theories that are not properly created. However, unlike researchers in applied research who cannot present their results until their functionality has been fully verified, researchers in fundamental research can also show the failure of their initial ideas in their results by disproving the viability of hypotheses or declaring failure to achieve the goal.

Both cases involve moral, professional and financial losses, and it is difficult to compare where the consequences are greater. In fundamental research, the scientist has somewhat more freedom. His knowledge, inventiveness and creative abilities are his only obstacles to success, while applied research has many more limitations. A researcher in applied research has a specific task, conditions and deadlines and very often limited resources. In such conditions, it is necessary to find sustainable and functional solutions, and one of the conditions is knowledge of the results of fundamental research, because he can compare his attempts through the stages of research with existing knowledge and possible models given in theory.

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Миливоје Г. ПАЈОВИЋ

ФУНДАМЕНТАЛНА ИСТРАЖИВАЊА КАО ПОЧЕТНА ТАЧКА ПРИМЕЊЕНИХ И ДРУГИХ ИСТРАЖИВАЊА

Резиме

Фундаментална истраживања су основна. Она по својој природи дају основу за сазнања о одређеним појавама и дефинишу основна правила, која се касније могу надограђивати и развијати кроз даља истраживања истог типа, или кроз примењена истраживања. Резултати ових истраживања првенствено се тичу теорије, па је најчешће и по правилу циљ ових истраживања научно објашњење. Примењена истраживања се настављају на фундаментална истраживања у логичном низу неизбежне праксе. На основу теорије и доказа фундаменталних истраживања, циљеви примењених научних истраживања постављају задатак да се објасне и открију могућност практичне примене резултата фундаменталних истраживања. Због тога се често примењују модели, прототипови и пројекције, као и општа правила која су проверена у пракси.

Фундаментална и примењена истраживања представљају две одвојене, али продорне категорије које имају своје посебне разлике. И поред свих преклапања и преплитања, ова истраживања носе различита очекивања и имају различите друштвене ефекте, као што су разлике у критеријумима просуђивања у вези са проценом успеха или неуспеха истраживања, затим разлике у ефектима на друштвена кретања и разлике у организацији истраживања и спровођењу, посебно у степену аутономије у односу на политичке и економске интересе и циљеве.

Кључне речи: фундаментална, (основна, примарна) примењена истраживања, практични резултати.

*Goran M. DŽAFIĆ**

Ministry of Justice Republic of Serbia

*Aleksandar M. DAMNJANOVIĆ***

MB University, Business and Law Faculty

FUNDAMENTAL RESEARCH OF NETWORK COMMUNICATION IN CRISIS MANAGEMENT OF THE REPUBLIC OF SERBIA

Abstract: The subject of the paper is applied research in crisis management with an emphasis on network communications, as a product of fundamental research. The motive for this paper is the fact that so far no serious attempt has been made to identify common values and goals between social networks and communication through them in times of crisis, as well as their mutual connection and possible interaction. The synthesis of these concepts in a qualitative and quantitative sense could represent a good basis for a fundamental, strategic approach to the research of social networks and their role in crisis communication. This type of crisis communication represents a special area of public relations that definitely has a wider dimension and role and that should be more fully explored through fundamental research. Taking into consideration the extremely wide range of influence that Internet social networks have on a social community in the XXI century, the first task and at the same time the difficulty, given the limitations of this paper, was to determine those values that have a fundamental theoretical capacity and the potential for their implementation through applied research in a „new“ strategic, theoretical framework that can be the basis for overcoming the crisis by applying social networks as a new dimension in public relations in a period of crisis. The main result of this paper is the determination of criteria for the optimal selection of those legal and institutional entities and sequences that, through their mutual synthesis, would represent fundamental principles and practice in the prediction and forecasting of possible crisis events, and even crisis resolution itself by communication through social networks with interested actors and the entire the public.

Key words: Fundamental research, Crisis management, Social networks, Crisis communications.

* Assistant Professor, goran.dzafic@mpravde.gov.rs

** Associate Professor, aleksandar.damnjanovic@ppf.edu.rs

INTRODUCTION

Social networks and public relations are increasingly prevalent in companies, state administrations of developed countries, and therefore among people all over the planet, especially in crisis situations.

The research problem faced by this paper is the lack of adequate successful models of crisis communication (part of crisis management) as an instrument of socio-political, social and economic stability, and thus national security in the Republic of Serbia. Such models exist in Western and developed Eastern countries.

Crisis communication is a special area of public relations that includes predicting possible crisis events, preparing for them and solving crises and communicating with interested parties, as well as post-crisis evaluation of measures undertaken (Avakumović, Milinković 2010: 377).

Social networks have become an integral component of crisis communication and crisis management, that is, they have become a condition that cannot be avoided. In practice, there are examples that show the importance and role of social networks in the successful resolution of a crisis situation. Further, given the availability of social networks, there is a possibility of their misuse in terms of sending misinformation that can cause even greater damage.

The Internet also initiated the creation of various communication applications, called social networks today, among which the most famous are Facebook, Twitter, LinkedIn. Viewed from a technological, socio-psychological and security point of view, the Internet has made a turning point in the understanding and functioning of everyday life and work (Putnik, Babić, Kordić 2014: 683).

The paper uses a general, conceptually analytical method, and the basis for the research is a multidisciplinary approach, that is, the connection of crisis communication, as part of crisis management and public relations through social networks in the period of crisis situations. In particular, the analytical method of analysis with its technique of functional analysis of institutions of importance for crisis situations in the Republic of Serbia is applied through the applicability of crisis communication through social networks, as well as obtaining feedback by analysing the results obtained.

In the research of network communication and its role in crisis management in the state administration of the Republic of Serbia, an adequate methodological approach with a theoretical determination of the concepts of crisis, crisis management, crisis communication, as well as a description and explanation of their most important characteristics in the light of contemporary trends was necessary to be applied. For the research of online communication, it was necessary to analyse the influence of social networks in general and as a special area of public relations, with special reference to crisis events, i.e. periods, and finally to revise the institutional framework of the Republic of Serbia in the field of crisis management and the role of social networks as a means of communication.

The very name of the research subject clearly shows that two areas of social humanities form the essence of this paper. It is a field of management sciences and a scientific field of communication, with an emphasis on public relations.

The goals of this research work start from the primary one, which is to unite in one research area several, seemingly different fields: management, especially crisis, sociological and economic phenomenon of social networks and their position in relation to society, especially in relation to official media, security risks and damage control.

In addition, it is necessary to correct and harmonize the legal regulations of the Republic of Serbia that regulate relations in the field of crisis management, crisis communication in a way that will adapt them to European and world standards in which the synergy of these two areas is represented. First of all, a comparison should be made with similar practices in the world and the case study method should be applied, that is, the research of the project team, in which the authors of the paper participate, as part of the project „EU for public administration reform within the sector reform contract“ should be analysed. The task of the team was to research the existing legislative and organizational framework of Crisis Management and its implementation in the Republic of Serbia based on a survey conducted in the period from 2020 to 2022. Within the mentioned project, empirical research was carried out using the method of examination and its qualitative interview technique with competent and responsible persons from the state administration system of the Republic of Serbia in the departments of: economy, justice, finance, state administration and local self-government, security services, first of all, the Ministry of Internal Affairs (MUP) and the Serbian Armed Forces. In addition, research of other state institutions and the non-governmental sector on the impact of social networks and crisis communication on the social community in Serbia were used in the paper¹.

1. CRISIS AS A CONCEPT AND THEORETICAL CHALLENGE

Studying crises as a concept in a broader discourse, we can conclude that they are, first of all, changes that have a sociological and psychological character, and only then an economic, medical or security phenomenon. Major, or global, crises often represent authentic civilizational milestones with a long-term impact on the further development of the social community that they directly or indirectly affected.

Crisis situations are as old as humanity. Being exiled from paradise, the first descendants found themselves surrounded by a not so pleasant environment. Dangers were lurking for them from all sides and only those who had the ability to foresee them and to prepare adequately survived (Dimitrijević 2000: 127).

1 First of all, research of organizations-business companies, companies, institutions of state administration, public sector, etc.

If we start from the premise that a crisis also means a change (in this case for the worse) that affects the social life of a community, then we can study each crisis from several points of view. The majority of scientists who have studied the mentioned phenomenon agree that there is no precise formula for getting out of the crisis because it violates all valid laws and puts to the test everything that was learned until the very occurrence. Crises have always been with us and are part of us.

In the book *Crisis Management*, Želimir Kešetović writes about the crisis as a social phenomenon. Their names and dates mark eras, and societies and cultures changed under their influence. They are an integral part of history and will continue to be so in the future (Kešetović 2008: 9).

The process of Globalization, which began in the 1990s, contributed to the rapid spread of crises from one side of the world to the other, following the rule of the domino effect. In addition, the development of information technologies enabled faster transmission of information, while the development and availability of social networks created a new virtual world of social contacts. We have seen their positive but also negative role during the catastrophic floods in the region in 2014, the Covid-19 pandemic and during the war in Ukraine.

In addition to crises caused by natural disasters: floods, earthquakes, volcanoes, epidemics, there are crises created by man by his actions through political challenges, risks and threats. The logic of profit has replaced the logic of life.

The governments of many countries have introduced restrictive measures, such as social distancing, banning mass gatherings, restricting movement and closing borders, all with the aim of preventing or at least slowing down the spread of the virus. Regardless of the measures introduced, we can safely say that they were not timely. Further, there was a lot of wandering around with the proposals to suppress the pandemic. The Covid-19 pandemic did not only affect the physical health of people, nor the functioning of the economy and social community, but also left serious consequences for people's mental health.

When the trend of the number of infected people in the world began to fall, at the beginning of 2022, another crisis arose, perhaps the most familiar to man, the war in Ukraine began, in which the negative side of communicating with the public in real war situations was fully expressed.

One of the important procedures of successful implementation of crisis management is communication and we can freely call it *crisis communication*. In order for it to be successful, companies must have teams of trained associates who are ready at any moment to react in accordance with the already prepared anti-crisis action plan.

In order for the company's communication with the main stakeholders² to be successful, the importance of its systematic planning and organization is highlighted. This process takes place after the emergence of a crisis situation, and its role is to alleviate the problems caused by the crisis situation (McDonald, Sparks, Glendon 2010: 264).

2 Shareholder, owner of company shares, member of a joint stock company, interested party.

An effective response to the crisis requires intersectoral, i.e. interdepartmental coordination and communication, depending on whether it is the state sector or a private company. Effective implementation of anti-crisis measures implies that organizational units work together. Most companies, enterprises or public institutions are primarily designed to carry out routine, day-to-day operations in accordance with the scope of work as well as with principles such as fairness, legality, efficiency and economic efficiency. With the emergence of a crisis, leaders, managers and employees have to adapt to crisis circumstances, which is a very demanding task.

However, crisis management requires flexibility, improvisation and changing existing rules. On the basis of previous experiences, the following management communication procedure in crisis conditions was developed, which is recommended by renowned authors in this field, Lynette McDonald and Beverly Sparks in their scientific article „Stakeholder reactions to company crisis communication and causes”.

First, it is necessary to identify your crisis communication team.

Second, it is important to identify and permanently train a spokesperson who will be authorized to speak on behalf of the organization.

Third, it is particularly necessary to react quickly and draw up the communication protocols.

In addition to the above-mentioned guidelines for anti-crisis action, it is also necessary to get to know your audience, the public, to predict and evaluate the crisis situation, if possible, as well as make a decision on communication methods.

2. TERM AND SIGNIFICANCE OF NETWORK COMMUNICATION

American psychotherapist Irwin D. Yalom was remembered, among other things, for the famous statement that „People need other people for initial and continued survival, for socialization, for the pursuit of satisfaction. No one - not the dying, not the outcast, not the mighty - transcends the need for human contact” (Yalom 1995).

New technologies have brought significant changes in communication between people, especially in the domain of social media and networks, primarily Facebook, Instagram, Twitter and TikTok. One of the more significant changes is the change in the time of information transmission as an important factor in the business sense. In addition, social networks - online communication - are available to the widest possible population and thus have created the possibility of sharing information with a large number of users.

World-renowned experts in the field of public relations, D. L. Wilcox, G. T. Cameron, F. H. Ault and W. K. Agee, in their book *Public Relations - Strategies and Tactics*, among other things, point out that public relations should

encourage open, two-way communication and mutual understanding, whereby in that process not only the target audience but also the organization changes its attitudes and behaviour (Wilcox, Cameron, Ault and Agee 2008: 4).

From this we can conclude that all organizations should have a crisis management-crisis communication concept. In addition to the concept itself, we also need carriers, i.e., teams of managers, which will include external experts or experts in financial, legal, marketing, public relations - PR issues. One of the most important segments of crisis management is crisis PR.

Crisis communication is an integral part of crisis management, more precisely crisis management. Crisis management and crisis communication management is a parallel process.

For Božidar Novak, crisis communication is a special area of public relations that includes predicting possible crisis events, preparing for them and solving crises and communicating with interested and other publics of the organization, as well as post-crisis evaluation of the measures taken (Novak 2001: 23).

One of the dominant functions of crisis management is crisis prevention, (*MFR model, predictive management*), i.e., perception and analysis of the obtained results. Analytics (*predictive analytics*)³ is a necessary step in problem solving. It has a key function within strategies, policy and planning.

3. ANTI-CRISIS ACTION STRATEGY AND COMMUNICATION PHASES

An important element of the crisis communication framework is building strong relationships with stakeholders-users (shareholders), that is, with the public. Many authors who study crisis communication are of the opinion that an organization that has strong relations with stakeholders-users (shareholders) before the crisis can suffer less damage than an organization with weak or non-existent relations (McDonald et al. 2010: 264).

The initial reaction implies speed, accuracy and consistency⁴. The leaders of the organization need to react quickly, accept responsibility and repair credibility. They are not the only ones trying to frame the crisis. Their messages overlap and compete with those of other stakeholders, who have other positions and interests, and who are likely to represent different alternative definitions of the situation and advocate different courses of action.

3 Predictive analytics is a category of data analytics that aims to predict future outcomes based on historical data and analytical techniques such as statistical modeling and machine learning. The science of predictive analytics can generate future insights with a significant degree of accuracy. With the help of sophisticated predictive analytics tools and models, any organization can now use historical and current data to confidently forecast trends and behaviors milliseconds, days or years into the future. (*Faculty of Computer Science, What is predictive analytics?*)

4 Time pressure - the period between the emergence of the crisis and the first address of the PR service with the presentation of relevant and precise information.

Crisis management experts often talk about the information vacuum created by a crisis. The media will try to fill the information vacuum and be the key source of the first information. If the leaders of an organization facing a crisis do not release information to the media, others will, and this can be an opportunity to spread false information and attempt to attack the organization (Coombs, Holladay 2008: 254).

Crisis management experts also recommend that the organization's management express concern for the victims. Reputation repair can be done during a crisis, after a crisis, or both. Namely, there is no need to improve reputation in all crises.

One of the most important factors in any crisis phase is maintaining positive public relations. By the term public we can mean several interest groups such as employees of the company or users of the company's services, customers and suppliers.

Media, Web sites and Internet pages are mass information systems that include the general public. The revolution in information and communication technologies, i.e. the development of smart phones, tablets, and software, created a new „consumer“, digital consumer or digital person. If the company has a good anti-crisis strategy, we can place information through digital media in zero seconds, we just need to decide in which way, that is, which strategy to apply.

In his scientific article „Protecting Organization Reputations During a Crisis: The Development and Application of Situational Crisis Communication Theory“ published in 2007, Coombs writes about ten types of reputation repair strategies and groups them into four groups : denial stance (attacking the accuser, denial, and scapegoating), diminish stance (excuse and justification), rebuild stance (compensation and apology), as well as bolstering stance (reminder, ingratiation, and victimage) (Coombs 2007: 172-173).

Further, the crisis offers a tank of potential lessons for planning emergencies and training for future crises. All participants in anti-crisis measures should, especially the teams of crisis managers study lessons and translate them into strategies, practices, policies and laws and in special organizational units if a type of crisis is expected to occur again.

In addition to precisely made strategies, each organization should use a website in its anti-crisis action. The offer of goods and services on the Internet is increasing every day and every serious company has been having an online sales option for long. In the last twenty years, an emphasis was placed on improving the purchase through the site. Today's consumers want to be active, loud and tell their desire, suggestion to companies. The social networks Twitter, Facebook, Instagram, but also websites enable them to do so.

In his research, Taylor and Kent revealed that the possession of a crisis website was the best practice to use the Internet during the crisis. On the other hand, intranet sites in organization provide information to the employees and individual suppliers and customers (Taylor, Kent 2007: 380).

3.1. Social networks as part of social media

The fall of the Berlin Wall could not predict future events that will change not only the map of the world in a geographical and demographic sense, but will be affected by the change of man as an individual introducing him into a completely different world, the world of virtual living. By creating a digital, virtual world, we got a new paradigm, social networks have become a space where today's planet inhabitant lives. According to the words of Professor Srbobran Branković, one of the greatest political analysts and connoisseur of public opinion polls, under social networks⁵ we imply groups that are formed on the Internet and that are connected by common and individual interests, friendship, need to publish and exchange other useful information, and also to help each other with advice and otherwise, giving answers to issues of other network members (Branković 2013: 2).

However, the wide use of social networks has imposed that they are not only a communication platform but also a means of broadcasting content and information.

The public considers the Internet as the safest source of news, especially ideal for creating timely communication, unique information and interactive conversations (Seltzer, Mitrook 2007: 227).

At the end of 2008, communication face to face was 20 times „greater” from the one online, and two and a half years later, it is only 5.5 times. It is also important to notice that the growth of communication mediated online does not go to the detriment of the one that takes place face to face, which means that the overall scope of communication is increasing the processes (Branković 2013: 3).

Internet communication allows us to transfer multimedia material, real-time content from any point of planet. Before the information communication revolution this was not possible.

3.2. Virtual space of social networks as a new type of social contacts

By creating a virtual space of social networks, we created a new form of maintaining social contacts. The research conducted by Kejios in 2022, there was a result that there were 4.70 billion users of social media in the world, which is 59.0 percent of the overall global population. According to the information of the Global Social Media Statistic a higher growth trend was recorded in the previous twelve months than in the previous years, so that another 227 million inhabitants of the planet joined the community of users of social networks (<https://datareportal.com/social-media-users>).

Given the long-life personal engagement in the political life of Serbia, doing election campaigns, there was an especially interesting research conducted at Harvard University during 2013 on the use of social networks among members

5 Charles Dickens said: “Electric communication will never be a true substitute for the face of someone who with their soul encourages another person to be brave and true.”

of two political parties in America. The results of the research showed that Facebook is equally used by the Democrats 87% and Republicans 87%; Google 52% by the Democrats and 36% by the Republicans; Twitter 46% by the Democrats and 38% by the Republicans. Pinterest, on the other hand, is more used by the Republicans, 40%, while the Democrats are at 32%. (Use of Social Networking Technology - Harvard University, Harvard Kennedy School, 2013. <https://iop.harvard.edu/use-social-networking-technology>)

Companies are not the only ones that have initiated the transition of communication to the Internet and social networks. The World Health Organization-WHO issued a recommendation for the use of social networks in educational view regarding maintaining the level of basic physical activity.

Within the Medical Faculty of Belgrade University, the group of authors conducted a research entitled „The role of social networks and mobile applications in physical activity during the Covid-19 epidemic in Serbia”. The research was published in the scientific journal of Medical research. The authors state that the emergency state was introduced in the peak of epidemic, during which movement in public places, or outside the apartments, rooms and housing facilities in residential buildings and outside the household is prohibited, work from home and online teaching in schools and colleges was recommended. The World Health Organization recommended maintaining the level of basic physical activity by using the so-called online resources.

The research was conducted as a cross-sectional study, using a questionnaire distributed through social networks. It was determined that slightly more than a third of the respondents (38.3%) used social networks, i.e. mobile applications in order to perform physical activity during the state of emergency in Serbia, of which 27.1% used social networks even before the state of emergency, while 11.2% started use social media/mobile apps to do physical activity during the state of emergency. Ease of access and viewing of exercises was the most common reason for using social networks/mobile apps. Around 40% of study participants believed that social networks, i.e. mobile applications, facilitate physical activity (Milić, Savić, Rajović et al. 2022: 37-38).

We should not lose sight of the fact that almost all levels of education, primary, secondary and academic, have also worked online, and that is on specific networks created for the needs of education with formal or less formal use of social networks. Here we can assume that, as in the case of shops, those institutions that already had a developed online or distance learning system functioned better during the pandemic.

Probably the most comprehensive classification of social networks and new media is the one made by the British organization - Network of Research Organizations, which distinguishes several large groups: social networks in the narrow sense (Facebook, LinkedIn, My Space); media dealing with categorization and marking of various documents, books and other publications (BibSonomy, Cite ULike); blogs and microblogs (Blogger, Live Journal, Twitter); artificial worlds (Second Life, Open Sim), tools for sharing presentations (Scribd, Slide Share);

exchange of sound and image material (You Tube, Picasa); university and research blogs (Research blogging, Academic blog portal); tools for collaboration in research and writing (Dropbox, Google, Docs, Wikia); tools for project management and collaboration (Bamboo, Skype); tools for information management (Google Reader, and Google).

For the purposes of this paper, we single out some of the mentioned social networks in order to substantiate their importance for crisis communication.

Facebook- as a social network in the narrower sense according to the classification of the British Network of Research Organizations was created as a support for university networks, and was formed at the beginning of 2004 as a social network at Harvard University for the needs of university students.

One of the significant features of Facebook, unlike other social networks on the Internet, is that users do not have to make their profiles publicly available for all users, but only for friends, that is, for those persons to whom we grant access.

That is why Facebook uniquely connects the so-called „online” and „offline” friends and enables a quick and simple way of exchanging information with friends, acquaintances, and strangers. (Babić, Kordić 2011: 1628).

Since its appearance until today, Facebook has become one of the most popular social networks. Despite the emergence of other platforms such as Instagram and Twitter, Facebook continues to record continuous growth. One of the advantages of Facebook is that it can be combined with other social networks, so our posts can be seen in parallel, for example, on Instagram. In addition, through Facebook, by updating the status, we can share multimedia content, short videos-clips, photos or written texts. Through Messenger, we establish two-way communication that allows users to connect with „friends”.

How much power „Facebook Live” can have is best illustrated by data from the „Facebook for Media” platform: during the broadcast of the „yellow vest” protests in Paris, the French digital media „Brut” was watched by 17 million people in one day (Miles et al. 2019).

Something similar happened here in Serbia, in Belgrade, during the demonstrations following the proposal of the Crisis Staff and Dr. Kohn to reintroduce the state of emergency. In the period between 2020 and 2022, several demonstrations against the restrictive measures of the Crisis Staff were organized. The most massive protests were held in July 2020. Social networks played a significant role in informing the public about events on the streets of Belgrade. Today, Facebook is part of Meta Corporation, which seems to have originated from Facebook’s idea of synchronizing accounts on other networks. Today, Meta has its parent Facebook, followed by Instagram, and WhatsApp as well as the already mentioned messenger (https://about.meta.com/companyinfo/?utm_source=about.facebook.com&utm_medium=redirect)

Twitter- has experienced a great increase in usage in the last ten years in the direct address to the public of statesmen and politicians. Immediately after a political event, the aforementioned persons present their position through this social network. The phrase „the president or the minister published

on his Twitter account” has become commonplace among journalists in reporting news on some other media.

„Regarding the use of Twitter, the most common use is the distribution of news and information, as much as 85%, 30% is used for marketing and promotion activities, 19% is used as customer service, and 11% for the purpose of human resource management” (Gardašević et al. 2018: 2).

Research has shown that Twitter is perceived as an elite channel in times of crisis, a channel that serves to make decisions for journalists and politicians. It is considered to be much faster than traditional press releases and that it is its advantage (Eriksson, Olsson 2016: 202)

When it comes to Twitter, its usage is lower compared to Facebook (according to some research, daily usage was 6%). It should also be emphasized here that usage differs depending on gender, age groups. Twitter is described as an asymmetrical, basically micro-blog network that primarily allows users to follow friends, experts, celebrities, and even crisis news in 140-character messages (Zhao, Grasmuck, Martin, 2008: 1820).

With the purchase of shares by Elon Musk in the value of 44 billion dollars, Twitter as a social network came to the „front pages” of all media in the world.

TikTok is one of the fastest growing social networking platforms in the world. Due to its technical features, TikTok allows users to create short videos with music, filters and many other features. In addition to the fact that at first glance it seems that this social network has a fun character, information can be shared through it in various formats. Therefore, it can also be used for crisis PR. According to the 2021 Global Social Media Statistic-DataReportal, there were a total of 315 million TikTok downloads worldwide in the first quarter of 2020. Not only is this a massive 58% increase over the previous quarter, but even more impressively, it is also the most downloads an application has ever had in a given quarter (<https://nextvision.rs/top-10-tiktok-statistickih-istrzivanja-koje-morate-znati-u-2021/>).

In the period July-September 2022 the author of this paper conducted several interviews with students of the third and fourth years of the Fifth Gymnasium in Belgrade. The interview was designed with the aim of examining the attitudes of high school students in their final years about the use of social networks, with special reference to the intensity and quality of use, as well as the criteria for choosing a particular network. The most popular social network, at that age, is TikTok and then Instagram. In their opinion, other social networks such as Facebook, LinkedIn, Twitter are for the elderly and they do not attract much attention and therefore do not use them.

According to Global Social Media Statistic, 62% of TikTok users in America are between 10 and 29 years old. In comparison, only 7.1% of them are over 50 years old.

YouTube is a social network designed for the exchange of sound and image material. Unlike other networks, YouTube gives us the opportunity to follow content even if we are not registered users.

„Following content on the YouTube social network is possible even without logging into a Google profile. However, in this case, users are prevented from using numerous functions and tools. By logging in to the profile, users are given the option of „following”, or in the exact translation from English, „subscribing” to the channels of other users” (Atlagić, Obradović, 2021: 1084). The same authors in their scientific article Tools on social networks as a modern means of political engagement state that the tool for broadcasting content in real time also exists on this network and is called „YouTube live” (Atlagić, Obradović 2021: 1805).

YouTube is perhaps the first network that gave birth to „YouTubers” as a professional orientation thanks to the use of the channel. Although at first they were considered just ordinary Internet „stars”, it turned out that successful YouTubers make a significant profit from their independent profession. It is only later that TikTokers emerged.

Instagram is one of the most popular social networks today. Its technical characteristics are similar to TikTok's. It belongs to a relatively new form of communication and as a free application allows users to create and share photos and videos using filters. It is mainly used by the younger population, but it is also used by various companies for digital marketing purposes.

In April 2015, Facebook bought Instagram for one billion US dollars (<https://www.yahoo.com/news/beginners-guide-instagram-220028085.html>).

Instagram has ceased to be a social network for sharing only photos, but has become a profitable business for all those who wanted to earn money in addition to publishing video and photo content.

4. INSTITUTIONAL FRAMEWORK OF THE REPUBLIC OF SERBIA IN CRISES AND THE ROLE OF SOCIAL NETWORKS AS A MEANS OF COMMUNICATION

The management approach is not only a key element of economic growth and industrial competitiveness, but it is essential for improving social development, the quality of life of a society, nation and the global environment. How do you in general deal with a crisis and crisis effects in an organized society? In all likelihood, similar to the life of each of us - *under crisis conditions, an anti-crisis approach, i.e. crisis management, is necessary.*

States also maximally develop capacities for crisis management through the establishment of special ministries (Ministry of Disasters in Russia) or state agencies (FEMA/Federal Emergency Management Agency/in the USA), coordinating bodies for crisis situations at the government level, or special crisis teams in individual ministries (team for crisis situations in the Ministry of Foreign Affairs of Italy). Finally, supranational organizations (UN, NATO, EU, OSCE) deal with crisis resolution as one of their very important activities (Kešetović 2008: 10).

During 2022, as a representative of the Ministry of Justice, I joined the project team in connection with the „EU Public Administration Reform within the Sector Reform Contract” project. The task of the team was to survey the existing legislative and organizational framework for crisis management and the status of its implementation in the Republic of Serbia.

In cooperation with the project team, a survey and analysis of the existing crisis management system in Serbia was conducted in the previous two years. The analysis resulted in the report, including the summary. The further course of work on crisis management envisages a two-step approach. As a first step, a series of bilateral meetings with key stakeholders was planned, where the project team presented key findings and recommendations and gathered views on them. After the completion of the bilateral meetings, workshops were held in July 2022 that will enable the preparation of a „roadmap” draft for the operationalization of the recommendations in organizational and process aspects.⁶

Regarding the legal framework of the Republic of Serbia for managing crisis situations, the National Assembly of Serbia adopted the „Law on Emergency Situations” in 2009. This law regulates the operation, declaration and management of emergency situations and establishes a system for the protection and rescue of people, material and cultural assets and the environment from natural disasters and other accidents, as well as the competences of state bodies, autonomous provinces, local self-government units and the participation of the police and of the Serbian Army in protection and rescue. In 2011, the Serbian Parliament adopted the National Strategy for Protection and Rescue in Emergency Situations, after which the Government in December 2014 adopted the National Disaster Risk Management Program and the Action Plan for the implementation of the Program in the period 2017-2020. The Law on Emergency Situations was replaced by the „Law on Disaster Risk Reduction and Emergency Management”, adopted in 2018. In addition to the legislative reform, the Government of Serbia has shown a strong capacity in dealing with crises, including the Covid-19 pandemic.

CONCLUSION

In times when laboratories are used more for „weapons” than for the development of science, the emergence of a large number of crises is fully expected. Is the beginning of the economic crisis related exclusively to financial reasons and could the World Economic Crisis have been predicted? Is it an artificial creation to make the rich even richer or is it perhaps a prelude to World War III? And finally, is this all one big conspiracy theory or is the consumer society paying for the guild’s greed? Many analysts and theorists, whether they are

6 In the paper, we state the basic conclusions of the project team’s research work. Further, it was noticed that in the research process itself, the team did not sufficiently recognize crisis PR and the role of public networks, which we repeatedly insisted on.

economists, lawyers, managers or sociologists, have their own theory about the mentioned phenomenon. The paper analyses the actions of management in crisis situations, crisis communication as part of crisis PR with a special focus on social networks. The role of social networks as a sociological phenomenon and their role in society in general and especially in crisis situations are also mentioned. By creating a digital, virtual world, we have gained a new paradigm, *social networks have become the space in which today's planet dwellers live*.

The extent of social networks power, in addition to the fact that they are used by 4.7 billion people on the planet, is best shown by the examples of certain countries in crisis situations such as wars or coups, up throws, simply blocking access to social networks.

Crisis management-crisis communication in Serbia is still an insufficiently developed concept, but it is certainly a necessary concept that needs to be institutionalized through the public sector, that is, the state administration.

The legal regulations of the Republic of Serbia that regulate relations in the field of crisis management and crisis communication need to be corrected and adapted to European and world practices in which the synergy of these two fields is represented. In this regard, it is necessary to adopt a Crisis Management Strategy for the needs of the state administration of the Republic of Serbia. In the Strategy, special attention should be paid to social networks as an integral component of crisis communication and crisis management.

Based on the research results in this and other papers, it is possible to give recommendations for clarifying and strengthening roles and responsibilities.

First of all, it is necessary to establish a crisis management system that is divided into strategic, operational and tactical levels. At each of these levels, a clear institutional structure and competencies in the field of crisis management must be established. There are four options for the future of crisis management in Serbia, which are listed below⁷.

The first option is the simplest and maintains the status quo.

The second option involves making one of the existing ministries in the Government of the Republic of Serbia responsible for the coordination of other ministries in the field of crises. This option is close to the first one, because practically the existing Ministry of Internal Affairs coordinates all tasks in the field of crisis management, and this option did not prove to be the best solution.

The third option advocates building a centralized crisis management coordination system within the General Secretariat of the Government of the Republic of Serbia, similar to the Secretariat for Civil Contingencies in the United Kingdom („UK Civil Contingencies Secretariat“).

The fourth option implies the construction of a centralized crisis management coordination system led by a newly formed independent institution (directorate, agency) directly related to the Government of the Republic of Serbia

7 The project “Support to public administration reform within the framework of the Sector Reform Contract for the sector of public administration reform” EU for you, PAR project 2022 and the Ministry of Justice.

and subordinate to the prime minister. This option represents the most effective solution for crisis management coordination, which also includes building an effective crisis communication system within the directorate, that is, the agency.

Within the crisis communication system, it is necessary to establish an official "directory" of users of social networks who perform responsible work in the state sector of the Republic of Serbia and to strengthen control in the creation of possible false profiles of civil servants and officials, because the problem that can arise in crisis communication is the issue of false accounts and profiles which stream unverified and often false information.

It is evident from the results of the paper that the primary role of applied (applicable) research in one segment of crisis management - through communication is the recognition of the regularity and legality of the achieved level of development in crisis management and finding a more rational, efficient and effective model of crisis management in complex and difficult crisis situations in which the Republic of Serbia in the near and distant future can be found.

The scientific function of applied research in this area is to learn the regularities and legalities within the crisis management system and to find their practical application between that system and other social systems in Serbian society, with the ultimate goal of advancing crisis management in Serbia and building a more efficient and rational model of crisis communication between actors participating in crisis prevention, during the occurrence of crises and in the period of recovery after the end of crises.

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Горан М. ДЖАФИЋ

Александар М. ДАМЊАНОВИЋ

ФУНДАМЕНТАЛНО ИСТРАЖИВАЊЕ МРЕЖНОГ КОМУНИЦИРАЊА У КРИЗНОМ УПРАВЉАЊУ РЕПУБЛИКЕ СРПСКЕ

Резиме

Предмет рада су примењена истраживања у кризном менаџменту са тежиштем на мрежним комуникацијама, као продукт фундаменталних истраживања. Мотив за израду овог рада налази се у чињеници да до сада није начињен озбиљнији покушај на идентификовању заједничких вредности и циљева, између друштвених мрежа и комуникације путем истих у доба криза као и њихова узајамна веза и могућа интеракција. Синтеза ових појмова у квалитативном и квантитативном смислу би могла да представља добру основу за фундаментални, стратешки приступ истраживању друштвених мрежа и њиховој улози у кризној комуникацији. Ова врста кризне комуницирање представља посебно подручје односа с јавношћу које дефинитивно има ширу димензију и улогу и коју треба кроз фундаментално истраживање потпуније истражити. Узимајући у разматрање изузетно широк спектар утицаја које имају интернетске друштвене мрежа у XXI веку на једну друштвену заједницу, први задатак а уједно и потешкоћа, с обзиром на ограниченост овог рада, је било утврђивање оних вредности које поседују фундаментални теоријски капацитет и потенцијал за имплементацију истих кроз примењена истраживања у „нови“ стратешки, теоријски оквир који може бити основа за превазилажење кризе применом друштвених мрежа као нове димензије у односима с јавношћу у раздобљу криза. Главни резултат овог рада јесте утврђивање критеријума за оптимални избор оних правних и институционалних ентитета и секвенци који би својом међусобном синтезом представљали фундаменталне принципе и праксу у предикцији и предвиђању могућих кризних догађаја, па и само решавање криза кроз комуницирање путем друштвених мрежа са заинтересованим актерима и целокупном јавношћу.

Кључне речи: фундаментална истраживања, кризни менаџмент, друштвене мреже, кризна комуникације.

Vesna S. ZARKOVIĆ*

Institute for Serbian Culture Priština – Leposavić

THE SERBIAN ISSUE IN THE CONTEXT OF THE SUFFERING OF SERBS IN KOSOVO AND METOHİJA AT THE END OF THE 19TH AND THE BEGINNING OF THE 20TH CENTURY**

Abstract: In the paper, the author speaks about the suffering of Serbs in Kosovo and Metohija in the period from the Berlin Congress to the Balkan Wars in the context of solving the Serbian issue. The difficult position of the Serbian people imposed itself as a primary task in the foreign policy of the Kingdom of Serbia. Complex diplomatic relations influenced the Government in Belgrade to consider several ways to resolve the Serbian issue within the framework of the Eastern issue. In addition to the Ottoman authorities, the obstacles in the implementation of the plans were represented by the Albanians, but also by the interests of certain great powers, primarily Austria-Hungary. The realization of imagined ideas about the protection of the Serbian people in Old and Southern Serbia gave short-term results, but they contributed to the final liberation from Ottoman rule.

Key words: Serbs, Albanians, Kosovo and Metohija, Serbian issue, violence.

The liberation wars of 1876–1878 represented a turning point in solving the Serbian question as a segment within the Eastern issue. The Serbs from Kosovo and Metohija were worried about their fate, especially in 1877 when the Turkish army massively passed through Kosovo and committed various crimes, looting everything in front of them and boasting that they would reach Belgrade. This behavior of the Turkish soldiers instilled even more insecurity and fear among the Serbian population, which was waiting for the results of the battle and was delighted to receive the news of the success of the Serbian army. The Serbian army, with the help of Russia, liberated Kuršumlja, Prokuplje, Niš, Leskovac, Vranje and Gnjilane. Faced with the advance of the Serbian army,

* Senior research associate, vesna.zarkovic07@gmail.com

** This paper was written as part of the scientific research work of NIO under the Contract concluded with the Ministry of Education, Science and Technological Development Republic of Serbia, number: 451-03-47/2023-01/ 200020, date 03.02.2023.

the *bashibozu* soldiers in Kosovo threw down their weapons and fled from the locals. In these wars, the Serbian army, led by Major Radomir Putnik, liberated Gnjilane, and one of its advance units, under the command of Lieutenant Miloš Sandić, reached Gračanica in January 1878 (Popović 2007: 50). The success achieved by the Serbian soldiers was short-lived. After the withdrawal of the Serbian army from Lužan and Gračanica, the Turks began to take revenge on the Serbs for the fear and humiliation they suffered. Together with the *bashibozuks*, they attacked Serbian homes in Priština and in the villages. They killed people in their in houses and robbed movable property. Serbian peasants looked for salvation in the forests, and in the cities they moved from one yard to another. There was a recorded case of the death of Serbian young men who died while running away from the *bashibozuks*. Thirteen young men were first shot, and then, wounded in this way, they were ferociously dragged into a courtyard, where the *bashibozuks* shot at them again. Out of the thirteen, only one survived, pretending to be dead. On the same day, ten more prominent Serbian citizens were killed in Priština. The time that followed was marked by Turkish revenge against the Serbs, who were not allowed to leave their houses and bury the murdered according to Orthodox custom. The municipal authorities visited Serbian homes, collected the murdered, took them away in garbage trucks and buried them in the cemetery, near the church (Popović 2007: 230–232).

The Serbian-Turkish war caused major demographic disturbances not only in the areas liberated by the Serbian army, but also in those areas that were in the rear of the front on the Turkish side. The movement of the Christian population occurred a little earlier, in 1875, when under the pressure of the *bashibozuks* Circassians and Albanians, supported by the Turkish authorities, they moved *en masse* to Serbia. According to certain data, it is assumed that there were about 200,000 of them. The successes of the Serbian army in 1877 and 1878 led to the emigration of Turks, Albanians and Circassians, whose places were replaced by Serbs from various regions, primarily from the border districts of Aleksinac, Kruševac and Knjaževac (Bogdanović 1985: 137; Stojančević 1998: 173–177). However, the Albanian population began to settle in the border areas of the Ottoman Empire in large numbers in Malo Kosovo and Gornja Morava, but also in Kriva Reka and the areas around Ibarski Kolašin. The liberation wars had great consequences not only on the further development of Serbia, but also on the vision of its liberation aspirations for the unification of all Turkish regions inhabited by the Serbian population. The results achieved by Serbia in the war were called into question by the signing of the treaty between Russia and Turkey on February 19, 1878 in San Stefan. At that time, a good part of the liberated areas was assigned to Bulgaria. At the beginning of that year, on January 3 to be exact, Serbia sent a request to the Russian emperor „to include the independence of Serbia and the annexation of Old Serbia or the current Kosovo *vilayet* with the addition of Vidin to the preliminaries of peace as well as the terms of the armistice“. Despite this request, according to the Russian-Turkish agreement, the borders of San Stefan Bulgaria included Niš and all of Ponišavlje,

all of South and Upper Morava, and all of Macedonia, including a good part of Albania in the south. In addition to independence, Serbia received part of the territory in the northern parts of Kosovo, Stari Kolašin and Malo Kosovo with Vučitrn and Podujevo. This agreement provided for the Serbian army to leave the areas of Gornja Morava, Izornik and Kriva Reka, populated by Serbs, and in return to receive territory in the Lapland region, where the majority were Albanians with only a small number of Serbian peasants (Bogdanović 1985: 139–140). After such decisions and divisions, in the same year, the San Stefan Treaty was revised in Berlin, where the Serbs had to fight for the recognition of what they had *de facto* conquered.

At the congress in Berlin, Turkey presented its proposal, which stipulated that Vučitrn, Kuršumlja, Prokuplje and Leskovac remain within its borders, and in case of non-acceptance, the border should be at Grdelica (Serbia 1878. Documents 1978: 457–458, no. 272). The Turkish delegation justified its views and proposals by pressure from Albanian tribal elders, and it energetically demanded from the British delegate Salisbury „to prevent the expansion of Serbia and Montenegro into Albanian territory“. This attitude of the Turkish delegation was also supported by the fact that the Albanian elders sent a petition directed against Serbia right before the start of the Congress. The news that the Albanians were ready to defend their interests even with weapons contributed to this (Serbia 1878. Documents 1978: 467–468, No. 280).

The Serbs, unlike the Turkish side, referred to ethnographic and historical facts, which Jovan Ristić explained to Count Andrašić, the representative of Austria. Ristić indicated the cause and course of emigration of the Serbian population and the manner in which the Albanians settled and particularly emphasized: „They are not in the majority, they are newcomers. Not every enclave can be a state by itself.“ Furthermore, he placed a special emphasis on the atrocities against the Serbs, committed by the Albanians, especially in those areas from which the Serbian army had to withdraw. The resulting situation called into question the survival of the Serbs „under Turkish rule and angry Arnauts, who have no law, no soul, no heart“ (Serbia 1878. Documents 1978: 324–325, No. 186; Богдановић 1985: 140).

The Committee for the Liberation of Old Serbia and Macedonia, which was founded in Kosovo in 1877, also took part in the Berlin Congress. The President of the Committee, Sava Dečanac, signed a memorandum, which, among other things, states: „When the Almighty God in his mercy placed in your hands the fate of those people enslaved for many centuries, on an otherwise classic land, and when the great European powers accepted the noble task of improving the fate of the unfortunate population of this part of Europe, be in this sublime moment the fathers and benefactors of the forgotten people of Old Serbia. This nation has suffered untold sufferings to this day, because it was left at the mercy of the Turkish and Arban renegades. Now that the position of all the peoples of the Balkan Peninsula has improved, is it right that we remain in the chains of heavy tyranny, is it right that the Turks continue to slaughter us and the Arbanians

burn our homes, is it fair that we continue to be subjected to the actions that are worse than the treatment of livestock in Europe. Since we have participated in the war of liberation, since we have rebelled against exploitation, since we have expressed our desires for freedom and union with our brothers, if the old order is restored, Muslim fanaticism will be boundless, with even more severe violence, and will lead us to we suffer more than before. If he can't provide us with freedom, let him at least provide us with some autonomy and personal security" (Serbia 1878. Documents 1978: 502–503, No. 301).

The demands of the Serbian government and the engagement of its representatives at the Berlin Congress were not resolved in accordance with the expectations of the Serbs. Serbia gained independence and territorial expansion to four districts, liberated in the war. However, a part of the Serbian population still remained outside the country's borders, living in difficult conditions that worsened more and more. Independent Serbia, faced with the decisions of the Berlin Congress, directed its forces towards the south, i.e. towards the Serbs who still lived in the Ottoman Empire. In the period that followed, the Serbian population was exposed to attacks first of all by Albanians, and then by *muhajirs*, who came from areas that previously belonged to the Ottoman Empire, whose authorities were not interested in restoring order and preventing further violence. The reason for such behavior lies in the fact that the Serbs were designated as the main culprits for the failure of the war, because of which Russia allegedly declared war on Turkey. Members of the Turkish army and government often showed solidarity with the Albanian oppressors, as evidenced by the fact that on February 22, 1882, on the day Serbia was declared a kingdom, a Military court was established in Priština. Thanks to the work of this court, a large number of prominent Serbs, primarily teachers, priests and other influential people, signatories of many petitions for the Congress of Berlin, were sentenced to long-term prison terms, ranging from 6 to 101 years. Executioners (*urfies*) of the infamous Ibrahim Pasha slaughtered 7,000 people without trial. The president of the court Ibrahim Pasha himself sentenced to death even a Serbian name (History of the Serbian People VI/1, 1983: 293). Many convicts left their lives in distant Asia Minor and the Thessaloniki dungeons, and some of the survivors were pardoned only in 1888, with the mediation of Russian and British diplomacy (Kosovo and Metohija in Serbian History 1989: 227).

The suffering of the Serbian population and the daily violence against them forced the Government in Belgrade to seriously consider the issue of the position of their compatriots in the Ottoman Empire. The Prime Minister and Minister of Foreign Affairs, Jovan Ristić, intended to push Turkey to sign more international agreements. The main task was to negotiate a convention between Serbia and Turkey. The first Serbian representative in Constantinople, Filip Hristić, already in 1879 started talks with the Turkish side about the conclusion of the Serbian-Turkish consular convention. After him, other Serbian delegates also worked on this task, which lasted a full seventeen years. The work and negotiations with the Turkish side were by no means easy and simple, because Porta

always found new reasons and delayed the implementation of what had already been agreed. First, a temporary and then a permanent consular convention was signed. Solving the Serbian question and preventing the violence to which the Serbs were exposed in the Ottoman Empire was imposed as a priority for the Government in Belgrade. That is why, first in 1885, a plan was drawn up for organized educational and cultural work among the Serbian and in general among the Slavic population in Old Serbia and Macedonia, which meant that in addition to teachers, priests and national workers, Serbian consuls would be in charge of managing such tasks. It was a long-term plan for Serbia, so in October 1886, Stojan Novaković, one of the best connoisseurs of the situation in the Ottoman Empire, was sent to the post of deputy in Constantinople. His task was to organize a whole network of legal Serbian educational and cultural institutions, for example schools, churches, libraries with Serbian teachers, priests and national workers. As a priority in Novaković's work, the question of opening a consulate arose, which was also agreed upon by a temporary convention. The intention was that over time the consulates would strengthen their role and that due to the disturbances that were expected from the Turkish side, appropriate legal acts would be passed to regulate their position. The idea could only be implemented by signing a permanent consular convention, which Novaković continued to insist on (Vojvodić 2007: 112, 120). Thanks to the hard work, experience and skill of Stojan Novaković, Serbia opened its consulates based on a temporary consular convention, first in 1887 in Thessaloniki and Skopje, and two years later in Bitola and Priština (History of the Serbian People VI/1, 1983: 277).

In Kosovo and Metohija, especially in Priština, the opening of Serbian consulates, which were seen as the presence of Serbia, was followed with special attention. Immediately after taking office, the consul saw the real situation on the ground, and his primary task was to receive daily complaints from Serbs. The engagement of the consul on these issues and the regular sending of reports on the situation in the area of the Priština consulate had a negative impact on the Albanians, but also on the local Turkish authorities. Only one year after the opening of the consulate in Priština, the first Serbian consul, Luka Marinković, was killed (Zarković 2018: 374). If you look at the tragic fate of the murdered consul, you can imagine what happened to an ordinary Serb in the city, and especially in the villages.

And indeed, the years that followed confirm our opinion. The Greek-Turkish conflict in 1897 and the behavior of the Albanians, dissatisfied with the outcome, who were armed to the teeth and vented their anger on the innocent Serbs, had a negative impact on the position of the Serbian population. Anarchy reigned in Kosovo *vilayet* because the Turkish army was sent to the south due to the conflict with Greece. Thus, in February of the same year, the army from Kumanovo, Prizren, Skopje, Gostivar, Mitrovica and Priština, and then from Preševo and Tetovo, first moved towards Thessaloniki. The relocation of the army contributed to the reduction of the number of soldiers in Old

Serbia, the weakening of the garrison in the Kosovo *vilayet* and new personnel solutions. This was followed by the enrollment of Albanians, ready to go to war, who demanded from the sultan to arm themselves. Many of them had high expectations, such as getting some ranks and being appointed as elders that would bring them complete freedom. However, their wishes did not come true, and members of the regular army were appointed as elders, which caused the Albanians to go back, keeping their weapons and military equipment. Upon their return, they plundered everything in front of them and kept the loot for themselves, committing violence against the Christian population. From the very beginning, the mobilization of the Turkish army caused too much concern among the Serbs in Kosovo and Metohija, whose fear was justified, especially after learning that the permanent staff had been replaced by a reserve. The members of the reserve army were without any supervision, and as such they committed various incidents. The conditions for establishing order among the reserve army did not exist, and atrocities in the cities were committed by almost everyone, from officers to ordinary soldiers. The bad mood also came from the Turkish authorities, who very often called into the reserve squad, as well as because of the conflict with the rebel Albanians. In addition, dissatisfaction was expressed „against the emperor who sells them to the occupied people, spends the people's church money or does not take enough care of the Islamic population“ (Zarković 2014: 130-132). During the whole of 1897, violence was perpetrated against the Serbian population in the entire Kosovo province, about which there are numerous reports from the consuls of the Kingdom of Serbia from Priština and Skopje (Peruničić 1985: 251–300). In addition to Serbs, insecurity and fear were also present among representatives of foreign countries who served in those regions. The Government of the Kingdom of Serbia was trying to get a reaction from the Porte and the Turkish authorities to take certain measures to protect the Serbian population. After numerous interventions in Constantinople, the action of the Turkish authorities followed in the autumn of the same year, but it did not bring concrete results. On the contrary, the leniency of the Turkish authorities towards the Albanians was obvious and led to new mutual conflicts that resulted in the expulsion of the *mutasarif*s from Priština, Prizren and Sjenica. This time, the central Turkish authorities again did not respond adequately to this behavior of the Albanian rioters and their mutual conflicts, which had a negative impact on the life of the Serbian population. Instead of working to calm the situation, prevent new conflicts, and deal with the disruptive factor, they indulged the Albanians more and more, and often showered them with various gifts. The results of such a policy were also visible in a conflict in Djakovica between two Albanian champions, Riza Beg and Bajram Cur, which affected almost the whole of Metohija. The situation between them culminated, which influenced the Porte to send a commission from Constantinople and negotiate with Riza Beg (Jagodić 2009: 50).

Murders and violence against Serbs in Kosovo and Metohija became daily occurrences that influenced Stojan Novaković to establish a special commission

at the Porte that would establish, investigate and list crimes in the Kosovo *vilayet*. He sent two notes to the Turkish government, the first in May and the second in July 1898, in which he highlighted all the dangers that threatened to destroy the Serbs in those regions. In addition, he drew attention to the events and riots that took place every day on the Serbian-Turkish border. Along with the notes, there was also an addendum about numerous Albanian violence in recent times. Porta, thanks to Novaković's involvement, sent a commission to investigate in early August. General Saadedin Pasha was at the head of the commission that spent fifteen days in Priština and other parts of Kosovo and Metohija. During that time, they did not conduct any investigation, and instead of interrogating the accused, they met with the main Albanian perpetrators, known for a large number of crimes against Serbs (Vojvodić 2007a: 266–267).

The work of the commission was unsuccessful, and its action contributed to Novaković sending to the Government in Belgrade a proposal to address the signatory powers of the Berlin Congress, in order to be convinced of the truth of Serbian claims about the situation in the Kosovo Province, and further, as he said, to prevent: 'evil, directed with premeditation against the Christian there indigenous people'. It was obvious to Novaković that the Porte and the Sultan were not ready to seriously consider and prevent violence against the Serbian population. That is why, before sending the proposal to Belgrade, he drew up an action plan for the Serbian Government, based on which Constantinople was to be asked to form an impartial commission to investigate crimes in Old Serbia, which would be joined by a Serbian delegate (Vojvodić 2007a: 267, 270–272). On October 31, the Serbian delegate, with the approval of the Government, submitted a new note to the Porte in which he even more vigorously demanded the formation of a mixed commission that would carry out its work impartially. At the same time, he often talked with Russian and Austro-Hungarian deputies in Constantinople, who supported the idea of an impartial commission and believed that violence against Serbs was not only an internal issue of Turkey.

That period in the territory of Kosovo and Metohija was marked by numerous sufferings of the Serbian population that led to emigration, which is evidenced by the fact that at that time 116 families with 500 members fled across the border to Serbia and found refuge in Kuršumljija. This, as well as other data in the previous ten years, indicated the poor position and emigration of Serbs and influenced Stojan Novaković to draw the attention of the Government in Belgrade and request information about atrocities. His plan was to, based on the facts, ask the Porte to take certain measures and protect the Serbian population from further suffering. In addition, he demanded from the Government to inform not only Serbian, but also foreign press about the situation. Such a Novaković's proposal was approved by the Minister of Foreign Affairs in Belgrade, who sent a proposal to the delegates in Paris and Petrograd to publish information in the press. Porta understood the articles about the suffering of Serbs in the domestic and foreign press as a hostile attitude. The published texts caused an indignation in Constantinople, so all correspondents

of foreign newspapers denied the writing of the press in Serbia, as well as the data on emigration (Zarković 2015: 88–89).

The denial of the Porta and its representatives in the local government about the situation in which the Serbs found themselves contributed to the deterioration of the situation on the ground. The work of the diplomats of the Kingdom of Serbia in the Ottoman Empire, primarily the consuls in Priština, at that time was related to listing Albanian crimes. The year after the conclusion of the Greek-Turkish peace was marked by anarchy that spread to the entire Kosovo *vilayet*. The Turks thought that the events caused by the Cretan issue would also affect other peoples in the country, especially the Serbs. That is why they saw in the Albanians, from whom they did not take away their weapons, a guarantee for the preservation of the Empire. Such an attitude and pandering to Albanian outlaws influenced the increase in the number of atrocities, but also, at the same time, the involvement of the Government in Belgrade, which appealed to the highest authorities of the Turkish government to prevent the extermination of the Serbian population. The further course of events and the autonomy of Crete in October 1898 further disturbed the Albanians who thought that a similar situation could happen in the Kosovo vilayet, so they started to organize themselves. At the beginning of 1899, the sultan announced that their weapons would be confiscated, so they organized a gathering in Peć and decided to fight for autonomy. The organization of the Albanians and the decisions made at the meeting, according to the consul of the Kingdom of Serbia, were directed against the Serbian population (Vojvodić 2007a: 266; Peruničić 1985: 321–336, 337).

The steps taken by the Government in Belgrade to improve the position of the Serbs and prevent further violence did not bring concrete results, so at the suggestion of Stojan Novaković, the so-called *Blue Book* was published, which represents correspondence between the Government, the Embassy in Constantinople and the Porte about the suffering of Serbs for the period from May 1898 to June 1899. In fact, this publication, printed in 1,000 copies, aimed to put the Serbian issue in the context of the international issue. However, at that moment, the European powers were not ready to discuss the issue of the suffering of the Serbs in Kosovo and Metohija, as before when it was done for other peoples in the Ottoman Empire. The circumstances that arose in the relationship between Serbia and the Ottoman Empire influenced the decision from Belgrade that this book would not be the subject of discussion at the Hague Conference, which was also attended by delegates from Serbia (Vojvodić 2007a: 271–274).

Over time, the government in Belgrade saw that the atrocities against the Serbian population in Kosovo and Metohija not only did not stop, but also increased. That is why, from the beginning of 1899, it secretly sent weapons to Old Serbia. In that same year, two companies were sent from Serbia with the task of attacking thugs. The deterioration of the situation was influenced by various factors, such as the decline of the authority of the local government, the lack of money for current administrative needs, the growing dissatisfaction in the Turkish army and among government officials. The situation in which

the Ottoman Empire found itself made the Albanians the absolute masters of the situation in the entire Kosovo *vilayet*. The population in Priština, Peć and Novopazar *sandžak* was in the worst position, where there were frequent attacks on prominent Serbs, whose property was stolen. The representations of the Serbs sent to the Turkish authorities remained unsuccessful. Stories circulated among the Albanians about a secret agreement between the Balkan states in order to divide the European part of the Ottoman Empire. Using this and similar stories, they attacked again and again not only individually, but in waves, demolishing everything in front of them. Numerous schools and churches were hit, and the situation was also difficult on the Serbian-Turkish border.

The Turkish authorities were not ready to deal with the Albanians and punish them for the crimes committed. Encouraged by such a policy from Constantinople, they did not give up their intentions, so at the very beginning of the 20th century they decided to deal with the population of Ibarski Kolašin, which represented the most homogeneous environment, populated by Serbs. In that intention, they were supported by some Turkish officials, military commanders and religious elders. The Serbs of Ibarski Kolašin, faced with such plans of the Albanians, decided to arm themselves and offer resistance. At the suggestion of the consul from Priština, several rifles were delivered through the Raška customs office, which were issued to persons of trust. The government of the Kingdom of Serbia sent old rifles, confiscated from the Serbian-Turkish war. because, in case the Turkish authorities found out about the arming of the Serbs, it wanted to avoid responsibility. The Serbs began to slowly arm themselves and offer greater resistance to the Albanian oppressors. From time to time there were shootings that raised the suspicion of the Turkish authorities and the Albanians and prompted them to pay more attention, especially from the moment when rumors began to circulate about the secret transfer of weapons from Serbia. The Turkish authorities decided to send the army in the spring of 1901 with the aim of disarming the local population. A search was carried out in Kolašin, but without any results. Turkish officials probably already had some information about the transfer of weapons from Serbia, so they ordered the investigation to continue. That is why the army thoroughly searched the Sjenica and Novi Pazar area. This investigation caused great dissatisfaction among the Albanians who decided to take action themselves and raid the Serbs of Ibarski Kolašin. The investigation of weapons in the Kolašin villages in the summer of 1901 was followed by brutal crimes against Serbian villagers (Bataković 1990: 269–285).

The moves of the Albanians were followed with special attention by Austria-Hungary, which encouraged the action to carry out the massacre of the Serbs. It was in accordance with its planned policy, and the resulting situation would have benefited it in multiple ways. It had the aim of pointing to anarchy, provoking a reaction from the Kingdom of Serbia and thus creating doubt in friendly relations with the Porta.

Russian representatives in Constantinople and throughout the Ottoman Empire put pressure on the Turkish authorities and officials to improve

the situation on the ground, ensure the safety of the Serbs and punish the Albanian villains who participated in these events. Thanks to the efforts of the Russian and Serbian diplomacy, as well as the personal involvement of the consul from Skopje, Viktor Mashkov, and Semsi Pasha, the commander of the Mitrovica division, the massacre of the Serbian population in Ibarski Kolašin and Novi Pazar was avoided (Zarković 2008). The events in Ibarski Kolašin had a significant impact on the further course of events in the Ottoman Empire, primarily on the intervention of the great powers at the Porta and demands for the initiation of reform action in the European part of the Turkish state.

The Russian consul Mashkov reported the events in Kolašin and the suffering of the Serbs in detail to his embassy in Constantinople. Based on reports from the field, Russia was fully aware of the entire situation, which influenced the government in Petrograd to restart and intensify the implementation of the proclaimed reforms. Wanting to ease Russian pressure and prevent its intervention, Porta proclaimed a reform program for the Rumelian *vilayets* in November 1902 (Vojvodić 1988: 417–420; Martinović 1985: 60–65). It had formed a commission with the task of sorting out the situation in Kosovo, Bitola and Thessaloniki *vilayets*, which came to Skopje on December 12, 1902. The commission was headed by the former Armenian *valya* Husein Hilmi Pasha, whose actions were related to gendarmerie, tax and judicial reforms. The reform action, in accordance with the previously proclaimed equality, provided for the admission of a certain number of Christians to the gendarmerie, court and administration. Albanians, known for their opposition to the implementation of reforms, did not like this idea at all. Their leaders exerted various pressures on the Serbs, especially those who had already applied for work in the administration and gendarmerie. In addition to the already existing one, pressure was exerted by the ordinary Albanian population, as well as by members of the local authorities. The *begs* of Priština openly protested against the implementation of the reform action, joined by other Albanian leaders from other parts of the Kosovo *vilayet*. The Albanians did not only resent the Serbs, but also they reacted against the actions of the imperial army, which, by order of Hilma Pasha, had the task of dealing with outlaws in the Gnjilan, Peć and Prizren areas. The actions of Hilmi Pasha led to a conflict between the Albanians and the Turkish army, but also to the Albanian organization in January 1903 in Đakovica (Mikić 1988: 51). The meeting in Đakovica, caused by the reform action, represented a turning point in the relations between the Ottoman Empire and the Albanians.

Hilmi Pasha unsuccessfully tried to appease the Albanians, who did not give up their demands. The Albanians from Metohija insisted on their demands, while those in Kosovo avoided entering into an open conflict with the imperial army. Disagreements between these two groups contributed to the failure of the rally in Đakovica, whose advocates called a new rally near Lučki Most, halfway between Đakovica and Peć. This meeting was more extensive than the previous one, but its importance was diminished due to the fact that the leaders were second-rate Albanian leaders. At the time of its holding, the most influential

Albanian leaders were in Skopje, at the invitation of the *vali*, whose appeals to calm the situation had little effect on the opponents of the reforms.

The actions of the army did not completely appease the Albanians, who later further continued to organize, hold meetings and commit crimes against Serbs. Their opposition to the reform action and conflicts resulted in the conquest of Vučitrn, the campaign on Mitrovica and the murder of the Russian consul (Sekulić 2005: 151–152). Albanian action in this part of the Kosovo *vilayet* seriously undermined the reputation of the Ottoman Empire and, at the same time, provoked Russia and other great powers to put pressure on the Porta to implement the proclaimed reforms. The actions of the great powers influenced the Porta to make a decision on the engagement of new detachments and the determination to deal with the Albanians. There were bloody conflicts between the two sides, which resulted in the pacification of the rebel regions, the arrest and prosecution of the initiators of the resistance, and the beginning of the introduction of reforms (Zarković 2013: 147).

The appeasement of the Albanians and the implementation of reforms lasted a short time because in the summer of 1903 an uprising broke out in Macedonia. Among the most interested in reforms were Russia and Austria-Hungary, whose emperors drew up a plan for further reforms in the fall of 1903, which contained provisions for: reorganizing the gendarmerie with the help of foreign officers, regrouping administrative units based on the principle of nationality, reorganizing administrative and judicial authorities with local self-governments, the restoration and compensation of devastated areas and the disbandment of reservists, volunteers and *bashibozuks*, as well as the control that will be carried out by civil agents of Russia and Austria-Hungary (Jagodić 2009: 78).

This plan led to the dismantling of the Ottoman Empire and a greater influx of great powers, especially Austria-Hungary, which in later years would have a great influence on the Albanians, through whom they would strive to achieve their goals. Austro-Hungarian action influenced the implementation of reforms, the outcome of which was the exclusion of the northwestern part of the Kosovo *vilayet* from this project. These reforms were never implemented to the end, and the equalization of Christians and Muslims never took root. The Albanians considered the Serbs to be the main culprits, in which they had the undisguised support of Austria-Hungary, whose goal was to create even greater intolerance between the opposing parties. The various methods used by the representatives of the Dual Monarchy, as well as its numerous agents in the Kosovo *vilayet*, contributed to the creation of even greater anarchy. In that period, the Porta and the Sultan found themselves between the European powers as advocates of reforms and the Albanians as their opponents.

Serbia tried to, in accordance with its capabilities, improve its position and prevent the suffering of its compatriots in Old Serbia. However, as the violence against the Serbs continued to multiply, and diplomacy did not bring the expected results, other proposals appeared from the Serbian side to take certain steps to improve the position of the Serbs in Kosovo and Metohija. There were many

reasons for this and for the rift in the relations between Serbs and Albanians. First of all, religious fanaticism has always been a strong obstacle to rapprochement with the Orthodox, then patriarchal habits, customs and traditions, the expulsion of Albanians from Serbia after 1878 and finally the pandering of the imperial authorities, making them the absolute masters of the situation.

Among the methods used by Serbia to protect the Serbian population in Old and Southern Serbia one could find the following:

- obtaining and bribing Albanians, especially in the villages in those regions where violence and cruelty were most pronounced;
- of the most dangerous Albanian chieftains and robbers by mutual murder;
- political agreement with the Albanians;
- extermination Hiring Albanians as guardians of Serbian villages;
- armament;
- mutual extermination of Albanians;
- formation and sending of companies from Serbia (Rakić 1985: 94–106).

Serbia set aside a certain amount of money to pay certain Albanians because it wanted to protect the most vulnerable villages, especially those that did not have any form of protection. Albanians in numerous villages, even the larger ones, caused damage, let cattle into the sown fields, stole and destroyed the harvest of Serbian peasants. The insecurity and uncertainty of the Serbian peasants influenced the idea of making the Albanians the guardians of the village (the *poljaks*). A *poljak* was paid in kind for his work, and each house gave 10–15 kilograms of wheat and barley per year. In addition, the guardians of the village had additional income that they collected from the perpetrators of the damage. Hiring Albanians for the post of *poljaks* initially brought good results, but over time that work was performed by bad people, villains and evil-doers, for whom the protection of the fields was the last priority. From protectors, they became a great burden for the village, which had to support and feed them throughout the year. However, they were not alone in that work because they mostly led a company with them, made up of idlers and robbers, whose demands the Serbian peasants had to fulfill. The thefts in the villages were, in a way, the work of *poljaks* who did not directly participate in them, but they induced the bandits to do so. The *poljaks* reported to the authorities about the events in the villages. They stayed and slept in Serbian houses and often transmitted infectious diseases, lice and scabies. Because of such behavior and unsanitary conditions, the Albanian *poljak* became a synonym for general danger in Serbian villages. His function was to some extent legalized and the Serbs did not know how to get rid of this form of protection. They managed to do that at the beginning of the 20th century, at a time when Sima Avramović was consul in Priština, who was present at an unpleasant event caused by the behavior of Tafa, a *poljak* from the village of Donja Gušterica. Tafa, with the help of his comrades, mistreated the peasants, ignoring the presence of the consul, and when asked what he was doing, he arrogantly and coldly answered „I am a *poljak*“. In this way, he wanted to make it clear that he was the absolute master

of the village and that he could go anywhere uninvited. Avramović's remark that *poljak* belongs in a field, not in a village, was followed by an ironic reply: „It is our adet (custom) that *poljak* guards the village, not the field, because the field is guarded by itself.“ This sentence reflected the true position of the *poljaks*, and at the same time, the Serbian peasants. At the consul's insistence, Tafa, a *poljak*, left the village with his friends, but soon returned and continued to mistreat the Serbs. Upon his arrival in Priština, Consul Avramović officially requested the abolition of Albanian *poljaks* in Serbian villages, first from the *mutasarif*, and then from the *vali* in Skopje and the Porta in Constantinople. Avramović's efforts were supported by Bishop Nićifor and the Embassy of the Kingdom of Serbia in Constantinople, and they sent demands of identical content to the Turkish authorities. The Turkish government considered the demands of Serbian diplomacy, as well as the Patriarchate, and decided that in Serbian villages, *poljak* must be a Serb. The decision was announced on Mitrovdan in 1902 (Popović 2007: 304–307). After its publication, in some Serbian villages one could find some Albanian *poljaks*, but the final result was that a great burden was lifted from the Serbian people.

The greed and unrestrainedness of the Albanians in Kosovo and Metohija, in addition to the Serbian population, was also aimed at churches and monasteries. Certain wealthier monasteries were forced to seek protection, so they hired certain Albanian families to guard them. The guardians of the monasteries were called *vojvodas* and they guarded the monasteries of Dečane, Peć Patriarchate, Devič, Sokolica. In Drenica, a family with the surname Vojvoda, which it received thanks to its former occupation, survived until recent times. The Sokolica Monastery, near Mitrovica, was surrounded by notorious Albanian villages, but managed to be preserved thanks to the brothers Ahmet and Isa Ademović (Isa Boljetinac). Thanks to their protection, the visitors and guests of the monastery did not experience any major inconveniences, as evidenced by the words of consul Todor Stanković who visited this monastery at the beginning of the last decade of the 19th century in the company of Vladimir Karić and Mihail Ristić (Stanković 1910: 170).

One of the proposals, originating precisely from Consul Stanković, related to winning over certain Albanians and getting closer to them. Stanković was of the opinion that insufficient work had been done in this field, and he based his ideas on rapprochement on the experience of the field, gained during a tour of the area inhabited mainly by Albanians and contacts with some of their leaders. He established important contact with Sulejman aga in Vučitrn, a well-known protector of Serbs, then with Mustafa beg Džinić, the first member of the *medžlis*, and his nephew Ibrajım beg Džinić, also a member of the *medžlis*. By the way, both were considered sincere and loyal friends of the Serbs (Stanković 1910: 5–6). In addition to those mentioned, the consul also came into contact with other numerous Albanians on whom the fate of the Serbs in Kosovo and Metohija depended. He believed that ties with influential Albanians could be strengthened by giving various monetary rewards and gifts, and according to

his calculation, certain financial resources of around 1.500 dinars were needed for the realization of what he envisioned (Peruničić 1985: 304–305). Consul Stanković's efforts and actions did not yield the expected results, so Serbian diplomacy continued to search for a solution that would make life easier for Serbs under Turkish rule.

One of the numerous proposals that was considered to be able to contribute to the improvement of the position of the Serbian population in Old Serbia related to arming. Unlike Albanians and Turks who owned weapons, Serbs were denied that right. Despite this ban, some Serbs secretly had weapons that they obtained illegally. Such a position influenced the idea of arming the Serbs in Old Serbia in some Belgrade circles. The initiators were diplomats who served in Serbian representations and consulates in the Ottoman Empire. The development of this idea was encouraged by the work of Bulgarian committees that armed their population and supporters in Macedonia and members of the *exarchate*, due to which the Serbs found themselves on the defensive against the Turks and Albanians in Old Serbia, but also against the Bulgarians in Macedonia (Jovanović 1937: 271–307).

Ideas about arming the Serbian people, who, due to poverty, were not in a position to buy weapons like the Albanians, were especially common among Serbian politicians during the great persecutions against the Serbs. During the general reprisals of the Albanians in 1887, Serbia sent the army to the Vranje and Toplica districts, and Turkey accused it of transferring weapons to its own people, which served as a reason for large-scale searches (Vojvodić 2000a: 84). Aided by the Turks, the Albanians persisted in committing crimes against the innocent Serbian population. Albanian aspirations contributed to the Government in Belgrade increasingly considering the idea of arming the Serbs in Old Serbia. In 1898, Stojan Novaković developed a compromise plan that included arming, but also diplomatic pressure on the Porta. He noticed the actions of the Albanian tyrants and suggested that the Serbian people should be armed first, and then diplomatic pressure should be applied. It was his old plan from 1896, which predicted that the Serbs would arm themselves and in that way deter the Albanian villains who would then bypass those houses that they knew had male members and weapons (Jovanović 1921: 196).

The idea of arming was also advocated by the consul in Priština, Svetislav Simić, asking that it be implemented gradually. Since assuming the post of consul in early 1899, Simić saw the position of the Serbs in those regions, so he insisted on arming. In one of the numerous proposals addressed to the Government, he stated: „Left without the protection of the authorities, our people are instructed to defend themselves against Arbanas. But while all the Arbanas are armed, the Serbs, left with bare hands, are forced to bow their heads and receive blows without resistance, and are torn without a murmur. I have had at least a hundred cases where people, when I scolded them for not defending themselves, justified themselves by saying: 'How are we going to do it, sir, when we have nothing at our disposal. Get us rifles, and you'll see if they'll take

our heads off without replacing them“ (Bataković 1990: 274). In the conversation with some Serbs, various proposals could be heard, as well as risks that could put Serbia in an awkward position. It was considered that Serbia did not have enough money to send for the purchase of weapons, so it was proposed to distribute the old ones, left over from the Serbian-Turkish war of 1876-78 (Popović 2007: 168). Consul Simić sent this decision to the Government in Belgrade, but it hesitated to implement it for months, not wanting to cause an international conflict. At the end of June 1899, a session of the Propaganda Department of the Serbian government was held in Niš, which was attended, among others, by consuls from Priština, Bitola and Skopje. King Milan made the decision to start arming the Serbian people in Old Serbia (Jovanović 1941: 84). The government of Dr. Vladan Đorđević started delivering weapons in the spring, and that action continued the following year. During the action, there was a change of consul in Priština, and Simić's successor, Sima Avramović, objected to the way weapons were distributed and repeatedly warned the Ministry of Foreign Affairs of the dangers that threatened. In Belgrade, they did not respond to several warnings, but only after the dispatch of the Priština consul did they stop sending weapons without his knowledge (Zarković 2008: 39–41).

The idea of arming was initially related to the population in Old Serbia, and at first it was intended to keep weapons in the house for protection, and later to arm certain groups that would kill the biggest Serbian tyrants. No agreement was reached on this idea because some thought that such an action would cause a reaction that could be fatal for the Serbian people. That is why the opponents of armament proposed other methods to achieve the result. Among the most significant ideas were the following: 1) diplomatic action at the Porta and with the great powers, 2) peaceful policy towards Turkey, 3) bribing and paying certain Albanians who would protect certain villages and regions. The first idea was disturbed by the great powers that primarily looked at their own interests and did not take into account the real situation on the ground. An example of such action by the great powers is the Austro-Hungarian-Russian agreement from 1897, when it was agreed to dismember the Ottoman Empire and maintain the status quo (Vojvodić 2000: 49). In this kind of policy, the great powers helped their protégés, who ensured their influence on the ground, which is best evidenced by Austria-Hungary's relationship with the Albanians. The idea of peaceful relations between Serbia and Turkey was spoiled by the Albanians, but also by those who incited them to unrest and perform disobedience to the authorities, as well as the negligence of the authorities to restore order. The Albanians constantly committed crimes against the Serbs, even invaded the territory of Serbia, which could not leave the Government in Belgrade and the public indifferent. The third method, which concerned bribery and payment, was disrupted by the Albanians, but also by Austrian propaganda. Numerous cases have been recorded where the Albanians, despite the given promise and agreement, did not remain consistent. Such an attitude was influenced by their insatiability, and they constantly demanded a sum higher than the initial

amount, so protection often turned into supporting the „protector“. In addition, there were those who succumbed to Austrian propaganda, the content of which could be heard from the *hodjas* in the mosques. In such a situation, with the money that Austria could offer more than weak Serbia, the Serbian protectors switched to the Austrian side and turned into Serbian bloodsuckers (Zarković 2008: 35–36).

The beginning of the 20th century and the new adversities to which the Serbian population in Old and South Serbia was exposed not only from the Turks, but also from the Albanian and *exarchic* troops took on ever greater proportions. In Serbia, the position of the Serbian population under Turkish rule began to take precedence on the foreign policy front, and public opinion advocated the measure „an eye for an eye, a tooth for a tooth“. On the one hand, official Serbia used diplomatic means to seek the reorganization of the Turkish local administration, and on the other hand, it helped the Serbs to resist daily atrocities. This second, unofficial side of Serbian plans had a lot of support among official circles. They supported the actions of arming the Serbian population, which thus entered the phase of a favorable solution to the issue of Serbian defense in Turkey (Jovanović 1941: 142–143). A large number of soldiers, officers and other influential people from Serbia crossed secretly, armed, to Turkish territory, in order to protect their compatriots. In addition to the protection they provided, they simultaneously worked to strengthen self-confidence and spread the idea of liberation from Turkey and unification with Serbia (Ječmenić 1937: 316). In addition, the idea of creating a Serbian Chetnik organization began to appear in Serbia, the initiator of which was Dr. Milorad Gođevac, the chief physician of the Belgrade municipality. First, the Serbian Committee was formed, within which there were revolutionary, propaganda and financial sections. Representatives of the scientific and civic elite, respected representatives of the army, as well as the bearers of economic progress of that time in Serbia, took part in its work. Companies were formed that primarily had a defensive task. Their main goal was not to engage in conflict with the Turkish army and waste ammunition, but to stay on the ground as long as possible and organize Serbian villages for self-defense, both from Albanian and Bulgarian companies (Ilić 2006: 21, 23, 28). The Serbian Chetnik action led from 1903 until the Balkan Wars arose from the liberation aspirations of the Serbian people and at the same time represented the need for the unification of the Serbian ethnic space. The action was directly managed by the Ministry of Foreign Affairs, and other ministries also participated indirectly: military, education and church affairs, finance and internal affairs. The operation of the companies contributed to the protection of the Serbian population in the Old and even more so in Southern Serbia, and the knowledge of the terrain by the Serbian Chetniks came to the fore in the battles during the First Balkan War.

At the end of the first decade of the 20th century, the Ottoman Empire fell deeper and deeper into crisis. The representatives of the Kingdom of Serbia who served in the Empire were aware of the situation that was tearing the country

apart. They carefully analyzed the resulting situation and informed the Government in Belgrade about it. Serbian consuls, representatives of the church, with the help of educational workers, worked more actively to organize their compatriots in the Ottoman Empire with the aim of uniting them. The events of the autumn of 1912 and the reforms in Old Serbia showed all the weakness of the Ottoman Empire and it became more visible that it was not possible to improve the position of the Serbian population. The Albanian rebellions in the years before the Balkan conflicts, as well as the uprisings in the spring and summer of 1912, influenced the decision of the Government in Belgrade to establish a connection with the Albanian insurgent leaders, whom they helped with money and weapons. The Serbian side found justification for this decision in the fact that the internal unrest in the Ottoman Empire weakened its ability to offer stronger resistance and restore order in the country, which was also important because of the upcoming conflicts in the Balkans (Documents on the Foreign Policy of the Kingdom of Serbia 1903–1914, Book V, Volume 1, 1984: 11).

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Весна С. ЗАРКОВИЋ

СРПСКО ПИТАЊЕ У КОНТЕКСТУ СТРАДАЊА СРБА НА КОСОВУ И МЕТОХИЈИ КРАЈЕМ XIX И ПОЧЕТКОМ XX ВЕКА

Резиме

Ослободилачки ратови 1876–1878. године донели су слободу Србији, али не и српском народу на Косову и Метохији и у Старој Србији уопште. Срби који су живели у Османском царству су, потакнути примером Србије, више од три деценије водили непрекидну борбу за ослобођење од туђинске власти. У тој борби полагали су велику наду у Србију, која је, како је време одмицало, све више јачала своје позиције. Као главни и основни задатак пред српским политичарима се наметнуло решавање питања положаја српског становништва ван граница Србије. Захваљујући искуству и раду својих дипломата, пре свега Стојана Новаковића, са Турском је била потписана конзуларна конвенција, на основу које је Србија добила право да отвара представништва на територији Царства. Крајем осамдесетих година отворени су први конзулати преко којих се српском становништву пружала помоћ и заштита. Притиснути свакодневним зулумима Арбанаса и не ангажовањем турских власти да исте спречи, Срби су били приморани да у великом броју напуштају своја имања и уточиште проналазе углавном на територији Србије.

Србија је настојала да преостало српско становништво заштити и код њих пробуди националну свест кроз ширење политичко–просветне пропаганде. У том циљу успела је да отвори већи број школа, ангажује кадар који се школовао у Србији, отвори књижаре и омогући слање књига. Такође, издвајала је новац за издржавање школа и цркава и водила борбу за признавање народности. Упоредо са тим, српске дипломате у европским престоницама су се трудиле да информишу тамошњу јавност о тешком положају Срба у Старој Србији. У том циљу је за Прву хашку конференцију о миру припремљена тзв. *Плава књига* у којој се налазио списак почињених злочина над Србима у периоду 1897–1899. године. Краљевина Србија се трудила да са Османским царством одржава пријатељске односе, али када је постало више него очигледно да турске власти нису предузимале никакве мере да спрече арбанашка насиља, одлучила је да тајним каналима шаље оружје и упућује чете у јужне крајеве. Међу методама којима је Србија настојала да заштити српско становништво у Старој и Јужној Србији могле су се наћи: задобијање и поткупљивање Арбанаса, истребљење њихових најопаснијих вођа и разбојника, политички споразум са Арбанасима, ангажовање Арбанаса за чуваре српских села и њихово међусобно истребљење. Напори које је Влада Краљевине Србије улагала резултирали су ослобађањем и припајањем Косова и Метохије Србији.

Кључне речи: Срби, Албанци, Косови и Метохија, српско питање, насиља.

*Ena S. MIRKOVIĆ**

Institute for Serbian Culture Priština – Leposavić

KOSOVO AND METOHIA IN THE DOCUMENTS OF THE PRIME MINISTER BLAGOJE NEŠKOVIĆ (1945–1952) AS AN EXAMPLE OF METHODOLOGICAL ANALYSIS OF HISTORICAL SOURCES**

Abstract: There are relatively few documents in historiography that speak directly about the attitude of Blagoje Nešković, Prime Minister of the NR of Serbia, towards the issue of Kosovo and Metohija. For now, we have at our disposal four important documents that show his attitude towards the situation in this Serbian province. The first document is Blagoje Nešković's Report on the political situation in Serbia, Vojvodina and Kosovo and Metohija written in 1945, the second is an analysis of the elections held in 1945, the third is a dispatch from 1946 on the payment of emergency economic aid for colonists from Kosovo and Metohija, and the fourth is the statement of Đorđije Đoka Pajković which he gave regarding the case of Blagoje Nešković in 1952. With methodological analysis of these documents as important historical sources for the issue of Kosovo and Metohija during the government of Blagoje Nešković (1945–1952), it is possible to make a mutual comparison between them and to follow how the attitudes of the president of the Serbian government towards this territory changed. In this way, it is indirectly possible to analyze the importance of his views in relation to the later development of the situation in Kosovo and Metohija.

Key words: Kosovo and Metohija, Blagoje Nešković, documents, historical sources, comparative analysis, methodology.

1 INTRODUCTION

The beginning of Blagoje Nešković's¹ government in the People's Republic of Serbia (PRS) was marked by close relations between Yugoslavia and Albania. Yugoslavia recognized the Albanian government of Enver Hoxha,

* Research associate, ena04111986@gmail.com, 381 (64) 3348846.

** This paper was written as part of the scientific research work of NIO under the Contract concluded with the Ministry of Education, Science and Technological Development Republic of Serbia, number: 451-03-47/2023-01/ 200020, date 03.02.2023.

1 Dr. Blagoje Nešković (1907–1984) was born in Kragujevac in 1907. He graduated from high school in 1926 in Belgrade, and then from the Faculty of Medicine in Belgrade in 1933.

provided economic and military aid to the PR of Albania as well as diplomatic support. Yugoslavia was a natural ally against Italian encroachment into the Balkans, and was also an ally of Albania against Greece, which sought a revision of its northern border (Petranović 1991: 143). An important step in the Yugoslav-Albanian rapprochement was the signing of the agreement between the Provisional Government of Albania and the National Committee for the Liberation of Yugoslavia on February 20, 1945 in Belgrade (Životić 2011: 119). On that occasion, two interstate agreements were signed. The first agreement was related to military cooperation in the fight against Germany, and the second was an agreement on the exchange of economic goods, which provided that Albania would make available to Yugoslavia all surplus oil, gasoline, petroleum and other oil derivatives, as well as wool and olive oil, while Yugoslavia took the obligation to deliver corn, wheat and sugar to Albania (Životić 2011: 120).

As a student, he joined the Association of Marxist Students. He became a member of the Local Committee of the Communist Party of Yugoslavia for Belgrade in 1935. He volunteered in the Spanish Civil War. He participated as a fighter and doctor in the Đura Đaković Battalion, 129th International Brigade. He was appointed as the president of the Central Medical Commission of International Brigades, which gave an expert assessment of the capabilities of individual fighters for the efforts that await them on the battlefield. After returning from Spain, he spent two years in the camps in France working as a doctor. After the camp was dismantled, he returned to Yugoslavia, stayed in the camp in Bileća for a short time, and was then exiled to his hometown.

At the end of January 1941, he came to Belgrade and went underground. He was soon elected to the position of secretary of the Provincial Committee of the Communist Party of Yugoslavia for Serbia. He spent most of the war illegally in Belgrade (until he went to free territory in 1943) where he organized resistance against the occupiers in Serbia. He was a member of the Main People's Liberation Committee, a member of the Anti-Fascist Council of the People's Liberation of Yugoslavia and the Anti-Fascist Assembly of the People's Liberation of Serbia. At the founding congress of the Communist Party of Serbia in May 1945, he was elected secretary of the Central Committee and held that position until 1948. In the period from 1945 to 1948, he held the position of Prime Minister of the People's Republic of Serbia. The conflict with Josip Broz began in 1947, when he was criticized at a meeting of the highest state leadership for implementing a too lenient policy when determining purchase quotas in Vojvodina. On that occasion, Blagoje Nešković did not accept the criticism of the top party leadership. In 1948, he was appointed as the president of the commission, which also included Ivan Gošnjaki and Vida Tomšić, which was supposed to investigate the "case" of Andrija Hebrang and Sreten Žujović. In 1952, he became the Deputy Prime Minister of the Federal People's Republic of Yugoslavia.

In October 1952, the Politburo of the Central Committee of the Communist Party appointed a commission (composed of: Milovan Đilas, Aleksandar Ranković, Spasenija Cana Babović and Dušan Petrović Šane) to investigate the case of Dr. Blagoj Nešković, because he was accused of supporting the Informburo Resolution. The commission came to the conclusion that the Executive Committee of the Central Committee of the SKJ communicated to the organizations of the Communist League on November 27, 1952, that allegedly Dr. Nešković had a wavering attitude towards the USSR at the time of the conflict with the Information Bureau. As one of the many reasons for his removal from office, he was also attributed to a wrong assessment of the political situation in Kosovo and Metohija. We were particularly interested in how his attitude towards Kosovo differed from the official party line. After being expelled from the party, he completely withdrew from political life and devoted himself to a scientific career. The Union of Communists of Yugoslavia rejected his request for rehabilitation in 1983. Blagoje Nešković died on November 11, 1984 (Mirković 2018).

Yugoslavia helped Albania and the Albanian communists, but Enver Hodža perceived Yugoslav help as pressure and tried to resist the pro-Yugoslav group led by Koči Dzodze. The pressure and desire to annex Kosovo and Metohija to Albania continued to exist regardless of the apparently good relations between the two countries (Petranović 1991: 153).

Although the decision on the annexation of Kosovo and Metohija to Serbia was most likely made at an impromptu and informal meeting of the party leadership with representatives of the CPY Regional Committee for Kosovo and Metohija, Miladin Popović and Fadil Hodža, it did not succeed in stifling Albania's aspirations towards this territory, which it claimed from the point of view of the people's right to self-determination (Životić 2011: 130). A big problem was also the issue of colonists in KiM. Yugoslavia tacitly agreed to the stay of Albanian families who had settled on the estates of expelled Serbian colonists during the war, but it remained unresolved what to do with those families who did not manage to obtain land. Yugoslavia tried to discreetly return them to Albania, but the Albanian side had a greater interest in them staying in Kosovo and proposed to grant them land and thus resolve their status. Furthermore, it helped the illegal migration of Albanian families from poor areas to Kosovo (Životić 2011: 245). In the end, a part of the landless families returned to Albania, which only partially started to solve this issue.

The request for Kosovo was supported by all layers of Albanian society, and mostly by the intelligentsia, mainly of merchant-beg origin, educated in the West, who had a great influence in the state apparatus and public life in Albania (Životić 2011: 245). Also, Western countries, especially the representatives of Great Britain and the USA, supported the idea of Greater Albania and in that way influenced the disruption of the good relations between the two countries.

When the Informburo Resolution was published, the CP of Albania was among the first to support it. This can be explained by the fact that Enver Hoxha wanted the Soviet side to emerge victorious so that he could get rid of the pro-Yugoslav pressure in his party on the one hand and realize the idea of Greater Albania under the patronage of the USSR and with Kosovo as part of it on the other (Petranović 1991: 173). At the Eighth Plenum of the Central Committee of the Communist Party of Albania held in February-March 1948, an attempt was made to improve Yugoslav-Albanian relations, but it was only a temporary retreat for Enver Hoxha (Petranović 1991: 167). From the correspondence of J. Broza and Enver Hoxha conducted during April 1948, it is evident that the crisis in relations continued to deepen. J. Broz also ordered the withdrawal of Yugoslav instructors and military delegates to the Albanian army (Petranović 1995: 363). The Central Committee of the CPY pointed out that there was an obvious deterioration in relations because the Albanian side did not show enough trust in Yugoslav intentions and did not sufficiently appreciate the help that Yugoslavia provides to it (Petranović 1995: 368). Still, J. Broz softened that attitude a little with a letter sent to E. Hodža on April 22, 1948, underlining that Yugoslavia still wants to help the construction of Albania (Petranović 1995: 371). However, the Politburo

of the Central Committee of the Communist Party of Albania rejected the accusations that Albania was to blame for the deterioration of relations and shifted the entire responsibility for the crisis to Yugoslavia. Shortly after, in July 1948, Albania handed over two notes to the Yugoslav representative in Tirana. In the first note it demanded the immediate withdrawal of all Yugoslav experts of any kind from Albania, and in the second it unilaterally canceled all economic agreements and contracts with Yugoslavia signed since 1945. Yugoslavia responded by demanding the return of all material resources previously given on the basis of those agreements, as well as the repatriation of all Yugoslav citizens from Albania. Relations continued to deteriorate. Yugoslavia stopped supporting Albanian interests in foreign countries in which it had done so until then, and Enver Hodža began to speak openly against Yugoslavia in his speeches, accusing it of trying to subjugate Albania. Albania was obviously getting closer and closer to the USSR (Životić 2011: 322). The conflict led to the severing of political, economic, military and educational-cultural ties, and there was a serious threat of turning into an armed conflict. From the middle of 1948 until the end of 1953, when the conflict began to subside, there were frequent incidents between the border troops, and the culmination was in 1951, when the news of a possible Soviet attack on Yugoslavia via Albania was transmitted, which soon proved to be disinformation (Životić 2011: 322). Problems at the borders began to be solved in 1953, when work began on agreements to overcome this problem.

2 BLAGOJE NEŠKOVIĆ AND THE KOSOVO ISSUE

We do not have many sources about Blagoje Nešković's views on Kosovo. For now, we have at our disposal four documents that directly show what the attitude was towards the situation in Kosovo and Metohija. The first document is Blagoje Nešković's Report on the political situation in Serbia, Vojvodina and Kosovo and Metohija written in 1945, the second is an analysis of the elections held in 1945, the third is a dispatch from 1946 on the payment of economic aid for colonists from Kosovo and Metohija, and the fourth is a statement by Đordije Đoka Pajković which he gave in connection with the case of Blagoje Nešković in 1952.

The report can be found within the fund of Blagoje Nešković and Branislava Brana Perović in the Historical Archive of Belgrade in box number 10². It was written in 1945, when Blagoje Nešković was the secretary of the Central Committee and the Prime Minister of the People's Republic of Serbia. At the time of the creation of this document, the Federal Republic of Yugoslavia relied entirely on the Soviet Union in its foreign policy, which can be concluded based on the analysis of the content of the document. The Report is significant, because

2 Historical Archive of Belgrade, fund 2157, Bequest of Blagoje Nešković and Branislava Brana Perović, box 10 (unordered fund), Report of Blagoje Nešković on the political situation in Serbia, Vojvodina and Kosovo and Metohija.

it is based on Blagoje Nešković's views on the then most important current internal political issues in Serbia - the redemption issue, the national issue, the country's post-war recovery. It is particularly important because it is one of the few documents on the basis of which Blagoje Nešković's position on the Kosovo issue can be seen. From the content analysis, we learn that the attitude of Blagoje Nešković towards the Albanians in Kosovo and Metohija in 1945 did not differ from the attitude of the top of the Communist Party, i.e. that he fully followed the party's course on this matter. Regarding the attitude towards national minorities, the pre-war policy of the communists was continued, according to which the Serbian communists were especially expected to take the lead in condemning the Great Serbian reaction. This idea is also observed in B. Nešković, who says: "The Šiptar reaction cannot promise anything new to the people of Šiptar that it has not already promised them until now and during the occupation, and which, of course, it has not fulfilled. As for the Great Serbian reaction, the people of Kosovo and Metohija know it very well. Now it's up to us that the Šiptar masses not only get to know better the liberation movement, but to feel all the benefits it brings to all the people of our country."³ He advocated reducing the dissatisfaction of the Albanian national minority by educating Albanians and involving the Albanian masses in people's committees, respecting the rights of national minorities and investing more in regions inhabited predominantly by Albanians. We note that these views coincided with the official policy of the Yugoslav government of that period. In the report, he makes very specific proposals for the territory of Kosovo and Metohija:

- „a) solve the agrarian issue with the participation of the rural poor to the general satisfaction of the Šiptar and other masses of Kosovo and Metohija;
- b) resolve the distribution of the land, involve the widest Šiptar masses, and then Serbian and Montenegrin ones through the slum committees;
- c) lead the fiercest fight against chauvinism, religious intolerance, insulting traditions and curtailing the national rights of any national group;
- g) expand and strengthen the „Committee of Shippers of Kosovo and Metohija” as part of JNOF;
- d) rely on slum committees and Šiptar committees in setting up and consolidating people's committees;
- đ) drag the Šiptar masses themselves into the militia, as well as the entire state apparatus;
- e) work tirelessly against illiteracy, especially of the Šiptar masses;
- h) to draw into JNOF broadly and tolerantly those respectable Šiptars who want to work in the spirit of politics of the liberation movement.”⁴

It can be seen from the above-mentioned tasks that efforts were made to win over Albanians as sympathizers of the national liberation movement and that this was one of the basic ideas after the war in solving the Kosovo issue. The inclusion

3 Ibid.

4 Ibid.

of Albanians in the ranks of sympathizers and members of the CPY went together with the resolution of the land issue. The report unequivocally testifies that Blagoje Nešković was aware of the importance of solving the agrarian issue for winning over the Albanian national minority in Kosovo and Metohija. „There is no doubt that the issue of religious tolerance, language, schools, participation in government and administration and other national rights is important and that all of this will affect the attitude of the Šiptar masses towards the liberation movement, but the essence is the issue of land. When the Albanian people began to convince and personally assure the Šiptar peasant that the land he cultivates will not be taken away from him, when the rural poor were allowed to participate in the distribution of the land, when the settlement of the settlers in Kosovo and Metohija was approached fairly, it was immediately felt that the Šiptar the masses stopped joining armed gangs, even those who had broken away began to return to their homes.”⁵ The analysis of this text clearly shows that Blagoje Nešković supported the policy of the state leadership in Kosovo and Metohija, which allowed the Albanians to keep the land they had acquired during the war, and that he thought that such a policy had a positive effect on the acceptance of the communist movement among Albanians. It is the same with the issue of settlers. Although he does not speak in detail about the problem of Albanian families who moved to Kosovo and Metohija, he clearly says “when the settlement of the settlers in Kosovo and Metohija was fairly approached”, from which we can conclude that he considered that the state resolved this issue in the right way.

For PR of Serbia, the problem with the colonists in Kosovo and Metohija was not only with the Albanian population, but also with the returnees from Serbia, who turned out to no longer have their homes. This can also be seen on the basis of the dispatch that the Prime Minister of Serbia, Blagoje Nešković, sent on April 11, 1946, to the Presidency of the Government of the FNRJ, in which he demanded that an additional 70 million dinars be sent as a matter of urgency to about 8,000 families, i.e. 35,000 people who were refugee colonists from Kosovo and Metohija, who returned there after the war, and still had no roof over their heads. Nešković stated that the houses of some of them were destroyed and nothing had been done to rebuild them, while the houses and properties of others were usurped by Albanians who refused to return that property⁶. He requested that the aid in food, clothes and shoes sent by UNRRA be delivered to these people. This appeal from the Government of Serbia was sent after the report of the Audit Commission for Kosovo and Metohija, which stated that the families of the colonists were forced to sleep in baskets and barns for a year and a half in extremely difficult hygienic and material conditions because they were not allowed to get back their property (Vukadinović 2019:238). Funds were requested from the Government to provide materials for the construction and renovation of houses, but also for help with clothes, shoes and food that were missing.

5 Ibid.

6 Archive of Yugoslavia, fund 50, f. 89, 720.

That Blagoje Nešković believed that Kosovo and Metohija were indisputably Serbian territories is confirmed by the analysis of the elections held in 1945. The analysis is a very concise document that refers to the election results in the entire territory of Yugoslavia. Among other parts of the country, KiM is also mentioned. Blagoje Nešković emphasizes that the rights of national minorities will be respected in that area, but that he will not allow the history of Albania to be taught in the schools of Kosovo and Metohija.⁷ This statement indicates that he did not agree with the Albanian pretensions to Kosovo and Metohija. For him, Kosovo and Metohija are a part of the Yugoslav state, where multi-ethnicity must be respected, but on the other hand, state integrity must not be threatened.

Analyzing both of these sources, as well as based on knowledge of the CP's relationship with Kosovo and Metohija, we can say that Blagoje Nešković followed the party's political line in 1945-1946 and that his views were the result of current party policy.

The fourth source is the statement given by Đoko Pajković regarding the case of Blagoje Nešković in 1952, which is included in the Secret File of Blagoje Nešković.⁸ On September 9, 1952, Đoko Pajković, who was at the head of the Regional Committee of Kosovo and Metohija, submitted a statement in which he attacked Blagoje Nešković for his lack of understanding of the situation in Kosovo and Metohija. In that statement, he accused him of not knowing the situation in Kosovo and Metohija and of poorly conducted politics. The statement was written in a very personal tone and was used as one of the pieces of evidence for B. Nešković's from power and expulsion from the party. Đ. Pajković accuses him of a chauvinistic attitude towards the Albanians in Kosovo and Metohija, incorrect behavior towards him as a member of the Regional Committee for Kosovo and Metohija, and for an inadequately conducted policy of redemption in the area of Kosovo and Metohija.

"In his presentation, Blagoje Nešković stated that the basic task of the party organization was to allocate the undistributed land to the poor, and to create "poor committees". It was shown that this directive was the result of ignorance of the conditions in Kosovo and Metohija, that no undivided free country existed, that the „poor committees" had no reason to exist and that to determine all of this - with such a meager staff and weak committees, a lot of precious time was spent, until the Regional Committee saw that the main problem was actually on the other side i.e. they should have returned to the Shiptars the unjustly taken land, which was assigned to the settlers.

I pointed this out to Blagoje Nešković several times on behalf of the Regional Committee, which he did not attach any importance to. Finally, we decided to prepare a proposal for a decision to solve this issue, and we did so. However, he turned a deaf ear to it and constantly postponed the solution of this issue,

7 Historical Archive of Belgrade, fund 2157, Legacy of Blagoje Nešković and Branislava Brana Perović, box 10 (unordered fund), Analysis of the elections held in 1945.

8 Private archive of the Nešković family, Secret file of Blagoje Nešković, Statement of Đordija Đoka Pajković about Blagoje Nešković from 1952.

which, as practice has already shown, was a real serious measure of connecting our Party with the wider masses of Šiptars in Kosovo.

As a result of weak mutual relations between nationalities in Kosovo and Metohija, as well as the criminal policies of the occupiers, after the war we had about 25,000 property disputes in the area and about 10,000 disputes about burned and destroyed houses, between Šiptar and others. The position of the Regional Committee on this issue was that disputes should be resolved by agreement, settlement, etc. That is why joint commissions (Šiptari and others) were created in each municipality with the task of solving these matters. This was all at a time when there were party organizations on most of the territory of the area, so it took more time to resolve this issue. Blagoje Nešković was dissatisfied with this kind of work, accusing us in the Regional Committee of not working, of being afraid of the Šiptars, emphasizing that we should have a tougher course towards the Šiptars, and if they react against it, then we should tell them that we will evict them." (*Statement*, 1). Blagoje Nešković's attitudes towards Albanians differed significantly in his public speeches in relation to his statements to his colleagues. While in public appearances, as expected from a communist, he stuck to the Party's line, in private conversations his views were in line with his national feelings, which Đoko Pajković also points out:

„Immediately before the elections in 1945, when the Regional Committee, based on the interest that existed in the masses, asked Blagoje Nešković how the issues of Kosovo and Metohija would be resolved in the new state, he probably said because of his attitude towards Šiptar that it would be a „district within the Republic”, ignoring our opinion about the need for autonomy, calling it nationalist, ignorant, etc. Repeating this time also the position that the Šiptars are grave sinners from the war, that what they were given was a lot, as well as that any expressed dissatisfaction can lead to their eviction. I don't think I need to emphasize how much we were surprised and amazed by this attitude of the party leadership" (*Statement*, 2).

However, although he may have used a harsh tone, Blagoje Nešković's attitude at that moment fully corresponded to the policy of the top of the Communist Party. Namely, as we have already seen before, after the war it was left unresolved what to do with those Albanian families who did not manage to obtain land, but still moved to Kosovo and Metohija. On the Yugoslav side, there was an intention to return them to Albania, which was achieved in the end for a part of them. With this in mind, we can understand why B. Nešković mentions the possibility of emigration. Comparing this document with the *Report on the political situation in Serbia, Vojvodina and Kosovo and Metohija*, which was created at that time, it is clearly concluded that it agreed with the official state policy in that period. It is obvious that such statements were only later misused against him for the purpose of political discredit.

In the following text, Đ. Pajković points out the alleged chauvinistic attitude of B. Nešković towards the Albanians in Kosovo and Metohija. He especially repeats the accusation when he talks about the situation in 1945-1946.

„I had a particularly difficult and sharp conflict with him at the consultation held immediately after the 1945 elections in the Central Committee of the Communist Party of Serbia. Blagoje Nešković evaluated the exceptionally good results in these elections in Kosovo as the result of the opportunistic policy of the Regional Council of the Committee because, in his words, we „were trying to appease the Šiptars”. When I opposed this very nervously (because he denied any positive work and influence of the party organization on the situation and elections), he rudely and insultingly attacked me, saying that I and the other comrades from RC did not understand the situation in Kosovo and Metohija, although he had no basis for such a claim.

After this, our conflicts became more frequent. At the next consultation in the Central Committee of the CPS, I pointed out in my report that the Šiptar masses had begun to join the NF and that we made a final decision to organize them. He very harshly condemned my position, claiming that such an understanding of the situation and realization of unity is an expression of political blindness, ignorance and lack of class consciousness. My efforts to explain the issue, to emphasize the specifics of the political development in the area, the need for such a resolution of the issue, were thwarted by frequent interruptions on his part in a way that I never considered friendly” (*Statement*, 2).

CPY was looking for a way to win over as many Albanians as possible to its policy. In 1945, there were about a thousand members of the Party in Kosmet, of which about 300 were Albanians. The following year, this number increased five times compared to the Serbian and Albanian population (Nikolić 2011: 269). CPY especially tried to win over Albanians to join the Party since their number was almost four times smaller than the number of Serbs who joined the Party. In the field, the Party tried to return the less compromised outlaws to a normal life and to incorporate them into local government bodies (Petranović 1991: 103). However, this kind of policy did not give favorable results in the long run; it did not suppress nationalism or the aspiration of Albania to annex this area to its state. Albania was very keenly interested in the issue of Kosovo, regardless of the fact that the two countries improved relations in the post-war period (Petranović 1993: 93).

„At the end of 1946 or the beginning of 1947, the Regional Committee assessed the political situation in the region due to the complaint of the then head of the UDB, Spasoje Đaković. Blagoje Nešković invited the entire Regional Committee to a meeting in the Central Committee. At that meeting, he accused us of misjudging the political situation in Kosovo and Metohija, of beautifying it, of portraying it in a rosy light. And we did not, of course, accept that, which I openly told him. However, right after that he asked us to send him an annual report on the work of the party organizations and condition in the Region. When we sent him the report with the grades he gave, he immediately invited me to a meeting, which was also attended by the then secretary of the PC of Vojvodina Vidić, where he criticized my report as weak because it „shows the situation in a black light”. When I told him that it was not the grade of the Regional

committee but his grade and the grade of the UDB head, he was very angry and behaved very unfriendly towards me.

Regarding mistrust towards Šiptars and the Regional Committee, he overestimated various phenomena in our area and on that basis took a position towards the Regional Committee. In 1947 after the obligatory purchase of grain, a group of 20-30 peasants came to Prizren and Uroševac to SNO to complain about the collection. He was informed about it through UDB. That was enough for him to ask me questions about the demonstrations in Kosovo. When I told him that it was too harsh and exaggerated an assessment and that we would suppress it, he called me derogatory and insulting terms in the presence of some comrades, adding that I don't know anything" (*Statement*, 2).

Blagoje Nešković did support the government's official position towards Kosovo and Metohija and was against Kosovo joining Albania, which Albania was undoubtedly striving for throughout this period. „After the war, a federation between Yugoslavia, Bulgaria and Albania was planned in our party leadership. Then Đilas asked me on behalf of Broz if I would agree to Metohija joining Albania and Montenegro joining Serbia. I refused" (Glišić 2011: 177). When he was supposed to be expelled from the Party, he was also labeled as being intolerant towards Slovenes and Montenegrins and that he suspected that B. Kidrič and F. Leskošek work to the detriment of the PR of Serbia, and in favor of the People's Republic of Slovenia. This was taken as a grave sin against him in relation to the policy of brotherhood and unity in which it was expected that Serbia should voluntarily make the most efforts for its preservation (Glišić 2011: 177).

Đoko Pajković further criticizes Nešković's behavior regarding the obligatory purchase policy on the territory of Kosovo and Metohija in 1947. Namely, the lack of cadastral data on the exact area of the land held by the peasants was a problem when determining the purchase quotas. Due to doubts about the correctness of the farmers' applications, the Ministry of Trade made a decision to increase the areas by 20% and take the purchase based on that calculation. Đ. Pajković states that he immediately pointed out to B. Nešković the incorrectness of such a decision, but he ignored that suggestion. Later, the Ministry withdrew this decision and reduced the debts by the amount of the increased land area because it turned out that the population was too burdened. According to him, B. Nešković allegedly also then insisted on keeping the 20% increase according to which the purchase quotas were calculated and thus burdened the peasants too much.

„It is well known that we approached the obligatory purchase in 1947 unprepared. In our case, the absence of cadastral data on the land was a particular difficulty. In the Ministry of Trade at the time, a decision was made that where there are no cadastral studies, due to doubts about the correctness of the farmers' applications, the superficial lands should be increased by 20%. I pointed out to Blagoje Nešković that such an increase in land means an unfair and dangerous burden on the peasants. He reacted to it very harshly and not

in a friendly manner. However, this had an impact, both then and later, on the burden by the purchase, taking into account the structure of households and the fertility of the land, as well as a larger share than in other regions, which can be verified even now.

Recognizing the justification of our requests, the Ministry of Trade notified the Regional Committee about reduced debt for the amounts by which the land surface had been increased. On that basis, RC monitored the execution of the purchase. When he found out about it, he characterized the whole Regional Committee and first of all me as an opportunist. He brought back the 20% increase as obligatory. He considered our resistance to this incomprehensible policy an expression of fear. On several occasions after that, in an insulting and mocking form, he told me „not to be afraid”, „that I have become braver” etc. It is a special question just how much stupidity and damage within the masses we had from that” (*Statement*, 3).

As for the buyout policy, we know from historical sources that Blagoje Nešković was criticized for the buyout policy in Vojvodina exactly because, according to the party's standards, he was too lenient in determining the buyout quotas. For the territory of Kosovo and Metohija, we have no data that the party was dissatisfied with his work, and it was certainly in the state's favor that the purchase quotas were as high as possible. It is very likely that after suffering criticism due to the results of the purchase in Vojvodina B. Nešković tightened his attitude towards the purchase in the whole country, hence his persistent insistence to maintain the increased calculation by 20% of the area. We think that by looking through that prism, his attitude towards the buyout policy in Kosovo and Metohija could not be seen as contrary to state interests.

We can see that throughout the document Đoko Pajković is very personal and that he often points out how B. Nešković had an unfriendly attitude towards him.

„I think these few examples that I presented here show that Blagoje Nešković, not wanting to know the conditions in Kosovo and Metohija, on which I tried to provide him with as much material as possible, took such positions that made our work difficult and we lost precious time. My pointing out the unsustainability of some of his positions and conclusions were the reason for his rude, dictatorial and insulting attitude towards me the Regional Committee. He demanded the acceptance of his views without question, underestimated and insulted the Regional Committee as a whole as incapable of helping him, by providing the necessary notifications, etc. It is also interesting to point out: that he criticized me and the entire committee for insufficient acceptance of Šiptars into the Party (that was correct); but in some of his political standpoints we felt chauvinism, which could not be without consequences for the organizational development of the Party among the Šiptars.

I suffered a lot because of his attitude towards me. I often rummaged through my head whether he was right. I constantly came to the conclusion that the reason why he accuses me is the following: that I am an opportunist

and a coward. This does not stand, because I worked in such conditions, so I am not evaluated that way. In two or three of the aforementioned conflicts, I stuck to my views very firmly, which I told him openly. But despite that, I came to the decision several times to write to the Central Committee of the Communist Party of Serbia, to thank the Party for its trust and to ask to leave the Communist Party of Serbia. But, bearing in mind all the difficulties in our area, I decided not to do so, considering that I must not allow it to be a special and more of a problem for the Party" (*Statement*, 4).

Analyzing the content of the statement, one gets the impression that Blagoje Nešković and Đorđije Đoko Pajković were never on good terms, and that the statement was an opportunity for Pajković to deal with an old political dissenter. An important fact is that the statement was written subsequently only in 1952, when Blagoje Nešković was supposed to be replaced. Obviously, it was necessary to find as much evidence as possible and turn it against Blagoje Nešković, in order to justify the decision to expel him from the party. For these reasons, we think that Đoka Pajković's statement should be taken with a grain of salt. Based on the knowledge of the CPY's relationship on this issue, we can say that Nešković followed the political line of the party, that his attitude was the result of the current party policy. What we can also assume from Nešković's position is that he did not know about such an agreement with J. Broz and J. Stalin, which would have meant the surrender of Kosovo and Metohija to Albania if such an agreement had really existed. Blagoje Nešković had remained on the same line that the party had before the war.

3 CONCLUSION

By analyzing the contents of the Prime Minister Blagoje Nešković's documents related to the situation in Kosovo and Metohija, we came to the conclusion that Blagoje Nešković did support the government's official position towards Kosovo and Metohija and was against the annexation of Kosovo to Albania, which Albania was undoubtedly striving for throughout this period. Using the method of mutual comparison of these four documents, we determined that they complement each other and are correlated with the foreign policy that FPRY conducted towards Albania. The exception is partly the statement of Đorđija Đoka Pajković from 1952, since it was given in specific circumstances and with the clear aim of discrediting the political work of Blagoje Nešković. That is why we took this document with a dose of critical reserve. Blagoje Nešković had an ambivalent attitude towards the national issues, on the one hand he tried to prove himself as a good communist, so he often emphasized „Yugoslavism" and the „thesis of brotherhood and unity" which was an integral part of political rhetoric. On the other hand, he was a native of Šumadija, a Serb, who never forgot his nationality nor the role that Serbia played during the Second World War. At a time when communists, and especially Serbian communists, were not

forgiven for their national weakness, we can say that Blagoje Nešković had, in a way, revolutionary attitudes in relation to other communists and to the role he had in the CPY. Those attitudes were noticeable sometimes more sometimes less in accordance with how much such a thing was possible in CPY.

It has been shown that when it comes to the policy towards Kosovo and Metohija Blagoje Nešković had more far-sighted assessments than his fellow party members. He predicted that giving too much freedom to the Albanian population would have negative consequences for the unity of the country and that the role played by that population during the Second World War should not be forgotten. Regardless of the fact that he supported the policy of massification of the CPY by including as many Albanians as possible, he was determined that „he will not allow Albanian history and language to be taught in Serbian schools in Kosovo#. It turned out that his fear of giving too much autonomy to the Albanians in Kosovo and Metohija was well-founded, as will be shown in the coming decades.

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Ена С. МИРКОВИЋ

КОСОВО И МЕТОХИЈА У ДОКУМЕНТИМА ПРЕМИЈЕРА
БЛАГОЈА НЕШКОВИЋА (1945–1952)

– Фундаментално истраживање историјских извора –

Резиме

У првим годинама после Другог светског рата односи између Југославије и Албаније деловали су веома срдечно. Међутим, Албанија никада није одустала од својих претензија на територију Косова и Метохије коју је покушала да припоји својој држави. Југославија је то на разне начине покушавала да спречи. Пре свега су нас занимали ставови Благоја Нешковића, значајне личности комунистичког покрета, у вези са косовским питањем. Обављао је значајне политичке функције у послератним годинама (секретар ЦК, председник Владе Србије, потпредседник Владе ФНРЈ). 1952. године, када је био приморан да поднесе оставку на све партијске функције и искључен из ЦК Југославије, један од многих разлога за то била је његова погрешна процена политичке ситуације на Косову и Метохији. Посебно нас је занимало да ли се и на који начин његов однос према Косову и Метохији разликује од званичне партијске линије. Анализом доступних извора из тог периода, дошли смо до закључка да је Благоје Нешковић следио званичну линију Комунистичке партије и да се не може говорити о неким ставовима који су били супротни званичној државној политици. Показало се да је Благоје Нешковић, када је реч о политици према територији Косова и Метохије, имао далековидије оцене од својих партијских другова. Испоставило се да је његов страх од давања превелике аутономије Албанцима на Косову и Метохији био основан, што ће се показати у наредним деценијама.

Кључне речи: Косово и Метохија, Благоје Нешковић, документи, историјски извори, упоредна анализа, методологија.

Jovan D. SIMIJANović*

Institute for Serbian Culture Priština – Leposavić

TREPČA IN THE ECONOMY OF YUGOSLAVIA (1927–1956)**

Abstract: The company *Trepča*, which was founded during the time of the Kingdom of Serbs, Croats and Slovenes, was a significant economic factor during its stormy history, and it was often at the top by importance in the country at that time. This paper is the result of a multidisciplinary methodological approach to the study of the mentioned topic. The results of the research on the contribution of the work of *Trepča* to the overall economic activity in the period from its foundation in the late twenties to the mid-fifties of the 20th century were presented. Research includes knowledge about business operations in various conditions that occurred in the given chronological framework. On the basis of primary sources, and the published sources, literature and the press, we tried to present a credible contribution to knowledge, with an accent on the topic of the economic importance of the activities of this company within the framework of the country at that time.

Key words: *Trepča*, mining, metallurgy, Kosovska Mitrovica, Kosovo and Metohija, Serbia, Yugoslavia.

1. INTRODUCTION

For almost the entire 20th century, in fact all the time of the existence of the Kingdom of SCS, then the Kingdom of Yugoslavia, during the German occupation and then in socialist Yugoslavia, *Trepča* was one of the important economic factors. *Trepča* for all that time, apart from being significant in the economic sense, was also a significant factor in the overall political circumstances. Due to the strategic importance of its overall economic importance, political goals were one of the important motives during the researches that preceded the foundation of *Trepča*, as well as afterwards, until today. The existence and operation of *Trepča* throughout all the years had a significant impact on social, cultural,

* Research associate, jovan_simijanovic@yahoo.com

** This paper was written as part of the scientific research work of NIO under the Contract concluded with the Ministry of Education, Science and Technological Development Republic of Serbia, number: 451-03-47/2023-01/ 200020, date 03.02.2023.

educational, inter-ethnic relations in the areas that were directly related to the exploitation, production and other activities of that company.

A methodological scientific approach is necessary in elucidating historical circumstances, and the very topic of studying the activities of *Trepča* as a large, complex company provides plenty of opportunities for important knowledge from various scientific disciplines. The current state of research, at least when it comes to historiography, still allows great opportunities for further research and for satisfying scientific curiosity. Systematic, thorough and indiscriminate expressions and thus available knowledge close the way to myths and half-truths about the economic and political importance of *Trepča* and reexamine to the level of accuracy and inaccuracy a whole series of viewpoints about the importance and possible abuse of its economic power.

2. THE ESTABLISHMENT OF TREPČA AND ITS CONTRIBUTION TO THE DEVELOPMENT OF LOCAL SETTLEMENTS IN THE PERIOD BETWEEN THE TWO WORLD WARS

After the First World War, after all the suffering and destruction, for the economy of the newly formed state, the development of an industrial base, based on available resources, was highly desirable. The area where the infrastructure for the exploitation and processing of ore will be created was among the most economically undeveloped in the country at the time. Although there were no modern scientific and geological researches at that time, it was known even beyond the borders of the country that there were significant mineral deposits in the areas of future mines and plants, which brought extraordinary income to medieval Serbia, even with primitive methods. Of course, the liberation of today's Kosovo and Metohija during the First Balkan War already created the preconditions for the restoration of mining, but the long tragic series of wars, suffering and destruction lasted until the end of 1918. It was expected that at the first opportunity, foreign capital would find a way and realize research and exploitation - profit as the main goal. The initiative to research ore deposits in the area of the future *Trepča* mines was created in the middle of 1919. At that time the English mission was formed with the task of assessing the damage caused to the economy caused during the enemy occupation in the First World War; it was also expected to propose the necessary measures for the reconstruction of the devastated areas. The Commission submitted an extensive report entitled *Geology and mineral resources of the state of the Serbs, Croats and Slovenes*. An assessment of the condition of all mines that were active until the beginning of World War I was presented. The report also described the condition of mines that were exploited by Austria-Hungary during the occupation. The Commission, among others, also visited the area of Kopaonik and the north of today's Kosovo and Metohija, areas where there was no modern mining exploitation at the time. Based on numerous mining settlements and old slag heaps, in which

the existence of lead and zinc sulphide was established, the report concluded that there are rich deposits of lead ore, but also that there are also zinc, iron, copper and silver ores. Because of the favorable report, the mineral resources of *Trepča* become the object of interest of English capital (Wray 1921; Avramovski 1979a: 126).

After extensive research, the British company *Selection Trust LTD* bought the concession for the exploitation of ores from the previous owner of the concession for the exploitation of *Trepča*, Radomir Pašić. It is indicative that Nikola Pašić was familiar with the potential of future mineral deposits; he used his knowledge to become the owner of the concession. Death prevented him from selling the concessions, but his son realized them. The contract was officially signed in Belgrade on December 14, 1925. The concession was then sold for 72,500 British pounds sterling and 120,000 shares (the total number of shares foreseen for the foundation of the Joint Stock Company was 290,000), the value of the shares at that time was five shillings each (Aleksić 2017: 212). Two years later, that is at the end of 1927, the company *Selection Trust LTD* formed the companies *Trepča Mines Limited* and *Kopaonik Mines Limited*, based in London, as its sister companies, which then directly engaged in the exploitation of ore deposits (Avramovski 1979a: 127).¹

As can be assumed based on the fact of which country the damage assessment mission was from and where the headquarters of the founding company of the ore mining company was located, British capital had a monopoly on lead mining during the twenties and thirties of the twentieth century. The privileged status of exploitation companies owned by British capital was confirmed in 1931 by the Law on Tax Privileges, on the basis of which *Trepča Mines Limited* and *Kopaonik Mines Limited*, as well as *Belasica Mines Limited*, *Brskovo Mines Limited*, *Rudnica Mines Limited* received tax privileges (*Official Gazette of the Kingdom of Yugoslavia*, March 14, 1931: No. 58 - XVI, p. 194). In Yugoslavia, apart from *Trepča*, there were two other active lead-zinc mines in the period between the two world wars - *Mežica* and *Zletovo*. The mines on *Kopaonik* worked only temporarily, as did the *Lece* mine (*Trepča Bulletin*, March 1955: No. 3, p. 1).

During the fourth decade of the 20th century, new privileges for digging, extraction and processing of all ores were issued several times, which significantly increased the total number of ore fields for exploitation by the Company. The rounding of companies under the auspices of one company owned by British capital was formally carried out by the Decision of the Mining Administration in Belgrade dated August 20, 1938 on registration in the mining books. At that time there was a formal merger of the company *Trepča Mines Limited* with the companies *Zletovo Mines Limited*, *Novo Brdo Mines Limited*, *Kopaonik Mines Limited* (Simijanović 2021: 288).²

1 <http://ume.rgf.bg.ac.rs/index.php/ume/article/view/101/93> - approached 30. 11. 2018.

2 Archives of Yugoslavia (hereinafter: AY) – 23 (Fund of the General Directorate of Metallurgy of the Government of FNRJ), 6–9. (Secretariat) – Folder no. 3, Former legal relations of *Trepča Mines Limited*, report of 14 March 1950.

Ore mining began in 1930 in the *Prvi Tunel* pit in Stari Trg, the ore had 12.6% of lead. Ore flotation began on August 14, 1930, in Zvečan. Lead concentrate was produced, which was exported through the port of Thessaloniki (Bijelić 2019: 88). In 1935, *Trepča Mines Limited* reported a profit of £200,000.³ The company *Trepča Mines Limited* exported only lead and zinc ore concentrate until 1936, when the export of ore was prohibited, and foreign companies were conditioned to export only semi-finished products (Marković 1994: 31). This „conditioning“ happened during the government of Milan Stojadinović. On July 7, 1938, based on the Decree on Privileges for the Construction of a Zinc Smelter in Šabac and a Lead Smelter in Zvečan, the Company received the right to build a smelter under its own ownership (*Official Gazette of the Kingdom of Yugoslavia*, July 7, 1938: No. 150 – XLVIII).⁴ The first contingents of refined lead could only be exported at the end of 1939, when the first furnace of the smelter in Zvečan was put into operation (Avramovski 1979a: 136–137). Thus, only on the eve of World War II, the entire process from ore exploitation to the final raw product was completed in the area of the site. The start of the smelter's operation created excellent preconditions for accelerated economic growth. Flotation in Zvečan worked until March 31, 1941. In the previous period from August 14, 1930 to March 31, 1941, more than 6 million tons of ore were processed in flotation, which was transported from the mine for processing in flotation (Bijelić 2019: 88).

The opening and operation of the mine, as well as the process of semi-processing and transportation, had a sufficient influence to initiate the way out of economic backwardness, at least in Kosovska Mitrovica, Zvečan and other nearby places. From the earlier period, there were only two small companies, founded even before the Balkan wars: the Quarry in Boljetin, owned by Isa Boljetinac, and the Sawmill in the village of Draga near Mojstir, owned by Ali Draga. The quarry continued its work at the end of 1923 under the name „Industrial enterprise for the production of mill and mill stone Račić – Boljetini“. Along with the son of Isa Boljetini Muja, the co-owner was Puniša Račić. This company operated until 1938, when it was closed. The aforementioned sawmill was rebuilt as a joint-stock industrial company for wood processing *Zvečan* in Kosovska Mitrovica with headquarters in Belgrade in the mid-1920s. The company existed until 1928 when, due to financial difficulties, it fell under bankruptcy. Strugara *Ibar* was founded in 1930. After the merger with the joint-stock company *Treska* from Skopje in 1935, this sawing company grew into a serious wood processing company with 60 workers and administrative employees. In the same year, 1935, a third sawing mill was established in Kosovska Mitrovica - Džafer Deva's steam sawmill. In Kosovska Mitrovica, there was also a *Zvečan* steam mill with a capacity of 10 tons of flour per day, and a tile Factory with a capacity of one million pieces per year. Since 1927, Kosovska Mitrovica has been supplied with electricity from the 350 KW hydropower plant on the Ibar, which

3 http://www.esiweb.org/pdf/esi_document_id_62.pdf - approached 15. 1. 2023.

4 AY – 23 – 6 – 9 – 3, Previous legal relations of *Trepča Mines Limited*, report as of 14. 3. 1950.

was later moved to the Čečevska reka. For the needs of the *Trepča* mine and flotation, a thermal power plant was built in 1930, which in 1939 accounted for 92.8% of the total electricity production in Kosovo and Metohija (Avramovski 1979a: 124 - 126). Successful and very profitable for foreign investors, mine exploitation and export of raw materials did not significantly contribute to the development of Kosovska Mitrovica and Zvečan, and especially not to the rest of Kosovo and Metohija. Unfortunately, the coming evil times of World War II interrupted the favorable prospects.

3. TREPČA DURING WORLD WAR II

Immediately after the entry of German troops into Kosovska Mitrovica, on April 18, 1941, representatives of the German private companies *Mansfeld A.G.* and *Proysag* took over the facilities and mines of Trepča without any damage, because the employees of the English company themselves took care to prevent the demolition of the plant. German private companies were then given the right to exploit the mines as enemy property while the war and enmity with the state of the headquarters of the owner of said property continued (Avramovski 1979b: 254–255). During the war years, exploitation continued almost unhindered. The biggest problem was the lack of manpower and damage as a result of the Allied bombing on August 13, 1944, after which the flotation was not restarted until the final liberation on November 22 and 23 of the same year (Avramovski 1979b: 300). Fortunately, World War II was only an episode in the work of *Trepča*, after liberation there were opportunities to start work over with new circumstances and ambitions.

4. GENERAL CHARACTERISTICS OF INDUSTRIALIZATION AND DEVELOPMENT OF MINING IN YUGOSLAVIA IN THE FIRST DECADE AFTER THE END OF WORLD WAR II

Before successful modernization, which was especially urgently needed in the areas of Kosovo and Metohija, it was necessary to successfully carry out industrialization, as a prerequisite, by the new authorities of a desirable socialist civil society. Yugoslavia was a predominantly agrarian and industrially underdeveloped country. The industrialization that began in the period between the two world wars took place slowly and did not even experience its full momentum, and it was already overtaken by new terrible destruction and suffering. Just before the Second World War, 1,500 industrial companies were operating in Serbia, employing around 100,000 people. The total share of the population that was then employed in the industry was 2%, while the then average in developed countries was 10% (Timotijević 2012: 116). Industrialization and urbanization in interwar Yugoslavia were in their infancy, and the enormous suffering and

destruction during the World War further set back the initial positions. The socialist project of the new authorities has set ambitious tasks before itself, not only to rebuild what was destroyed, to compensate for what was missed, but also to achieve new record achievements.

During the first few years after liberation, the emphasis was on reconstruction and preparations were made for the transition to a planned economy. Until nationalization, which was carried out on the basis of the Law on the Nationalization of Private Business Enterprises, until December 6, 1946, there were three categories of business enterprises in Yugoslavia based on ownership: state, private and sequestered (Simijanović 2018: 243).⁵

After World War II, the government's priority was to create preconditions for accelerated planned industrialization of the country. In accordance with the set goals, the government tried to create a state property base through confiscation, sequestration, confiscation of war profits and nationalization. Already in 1945, 56.5% of the total industry was in state ownership, and another 32.4% was under sequestration. The nationalization process was completed in two waves: in 1946, the rest of the larger companies were taken over, and in 1948, the remaining smaller plants were taken over (Zapisnici 1995: 171-173, 536-538; Timotijević 2012: 108). Until the start of the implementation of nationalization, i.e. until the passing of the Law on the Nationalization of Private and Commercial Enterprises on December 6, 1946, there was a distinct variety of companies in terms of ownership. Enterprises could have a different character: state, sequestered and private. The Ministry of Heavy Industry was well aware of the major problems in production that caused the lack of raw materials, damage and obsolescence of machines, and above all, the lack of labor of all qualifications, especially qualified and highly qualified. The still unsettled ownership relationship and a high percentage of private companies were considered the main reason for these negative phenomena.⁶

The adoption of the general national economic plan in June 1946 led to strict centralization and the transition to a planned economy. By placing companies under the „administrative-operational management“ of state bodies, market legalities were often annulled. In such circumstances, in many cases deprived of business independence, usually with politically suitable and not always business-capable directors, there were not rare examples of companies often destroying their own working capital, usually by selling goods for a lower price than the cost of their production. Such phenomena most often occurred due to the well-intentioned, but non-realistic point of view that industrial production is an end in itself; the main measure of success was the progressive growth of production, without paying attention to the real needs

5 AY – 16 (Fund of the Ministry of Heavy Industry of the FNRJ) – 37–38 (Revision Department) folder no. 32, Explanation of the final account of the Ministry of Heavy Industry of the FNRJ for 1946.

6 AY – 16 – 37 – 38 - 32, Explanation of the consolidated final account of the Ministry of Heavy Industry of the FNRJ for the year 1946, 4.

of the market, without plans and orders, so that goods were often piled up in warehouses (Dobrivojević 2013: 64).

Improvisation, overestimation of one's own strengths and possibilities characterized the planning of that time. In the course of 1945 and 1946, the Party's economic cadres drew up the Industrialization Orientation Plan, which, according to their own admission, was mostly done blindly, since they did not have enough information about the mineral and energy resources available to the country. A further step towards the centralization of the economy was represented by the Law on State Economic Enterprises. According to this law, all companies were classified depending on their estimated importance into those of national, republican, provincial, regional and local importance. They were managed by the respective state authorities. The government thus held the entire development, production and personnel life of the company in its hands. It determined business rules, drew up plans, supervised, kept records, influenced the selection of directors and other officials. The government actively interfered in the work of the directors, having the right to change and modify their decisions (Dobrivojević 2013: 79-80).

The Law on the Five-Year Plan for the Development of the National Economy of the Federal Republic of Yugoslavia in the years 1947-1951 highlighted the following basic tasks: Liquidation of economic and technical backwardness, consolidation of the country's economic and defense strength, consolidation and further development of the socialist sector of the national economy and the new relations of production arising from them, and raising the general well-being of workers from all three economic sectors. Among other things, the Law provided the task of increasing industrial production in total production from 45% in 1939 to 64% in 1951 (*Law on Five-Year Plan* 1947: 65-66). During the drafting of the Law on the Five-Year Plan, the Soviet experience was used, which implied a directed system of planning through state bodies (Mitrović 1988: 327).

The law on the five-year plan was created and entered into force at the time of the strongest relations with the USSR and the states of people's democracy, according to whose model the organization of the centralized economy was copied in Yugoslavia. However, during 1948, a conflict arose with the mentioned countries, which also in terms of the concept of economic organization caused changes in the direction of decentralization of economic development, with the idea of ensuring the even development of all regions in the country. The state authorities, the communists in power, in practice equated economic regions with republics and autonomous units, and considered equal economic development to be the equalization of the economic development of republics and provinces. Given that at that time the Autonomous Kosovo-Metohija Region (hereinafter: AKMR) was considered as a separate economic entity, the plan of accelerated industrialization and deagrarianization of the population was valid for it as well. To that end, from 1947 to 1956, investments in the industry of this area were five times higher than investments in agriculture, specifically, the most investment

in this area was in the *Trepča* mine complex, then the construction of the *Obilić* coal mine, as well as the opening of magnesite and chrome mines as well as the *Šar* cement factory in Đeneral Janković (Vukadinović 2020: 575-576).

In the period from 1947-1954 half of all investment funds went to mining development. At the same time, large investments in heavy industry have not only slowed down the growth of standard of living, but also the development of other economic branches. The production of consumer goods was neglected, there was a decline in agricultural production and food shortages, so it was necessary to resort to the import of grain, one of the most important export items in the Kingdom of Yugoslavia. Despite the aspirations, the forced process of industrialization caused almost the lowest standard of living in Europe, only Bulgarians and Romanians lived harder (Dobrivojević 2013: 106-107). Post-war optimism and élan in the people met with reality every day, and the top of the party was aware of that fact (Marković 1996: 13). However, time will show that the results achieved in industrialization did not represent the economic optimum considering the resources and efforts invested. The national income of Yugoslavia in 1957 was 200 dollars per capita. Yugoslavia in the period 1948-1952 had an annual growth rate of 1.7% compared to the pre-war 2.14%. Nevertheless, despite all the difficulties in development, the industry became a leading economic area in the first post-war decade, so the structure of the national income changed accordingly. The share of industry and mining increased from pre-war 21.1% to 38.3% in 1956 (Dobrivojević 2013: 106-108).

Industrialization was the ultimate priority, through it and with its help any modernization was imagined. Through industrialization, an effort was made to achieve intensive agricultural production as well, more efficient and automated, with as little labor as possible, as it was considered very valuable for industrial production at the time (*Law on Five-Year Plan* 1947:11).

In practice, it turned out that the imperative to speed up the implementation of industrialization was at the same time the biggest weakness of those processes. Despite the fact that industrial production reached the pre-war level by the end of 1946 (Mitrović 1997: 23), and already at the end of the following 1947 it exceeded the pre-war level by 21% (Gatalović 2016: 271), it suffered from various problems. First of all, there was the lack of skilled workers and the absence of specialization in production. The processing of raw materials to the stage of semi-finished products and their export was practiced, instead of perfecting the production and export finished products (Dobrivojević 2013: 63).

5. ACTIVITY AND DEVELOPMENT OF *TREPČA* (1944-1956)

The National Committee for the Liberation of Yugoslavia (hereafter NKOY) started dealing with the assets of the company *Trepča Mines Limited* after the liberation of Zvečan and Kosovska Mitrovica. All objects, goods, materials and tools owned by this company, which were then in customs warehouses,

were moved to *Trepča* warehouses at the end of 1944, and it was all at the disposal of the Commission for the Economic Reconstruction of the Country at the NKOY.⁷

In the post-war period, Kombinat *Trepča* initially included the Stari Trg mine with flotation in Zvečan, the Ajvalija Kišnica and Novo Brdo mines with flotation in Badovac, the *Kopaonik* mine with flotation in Leposavić, and later the *Rudnik* mine with flotation located near Gornji Milanovac, the mine and the Lece flotation plant near Medveđa, the *Blagodat* mine and flotation plant near Vranje and the *Šuplja Stijena* mine and flotation plant near Pljevlja (Grupa autora 1974, 31, 39).

In the first years after World War II, mining, despite lagging behind due to war events, still significantly participated in the total volume of economic activities at the time on the territory of Kosovo and Metohija. This state of affairs does not testify to the development and volume of mining production, but to general economic, above all industrial backwardness. Apart from mines, only four brick factories, four wood processing companies, eight industrial mills and three ice factories worked in this area (Petranović, 1969, pp. 310). According to some data, at the end of 1947, industrial production accounted for only 16.1% of the total social product of the autonomous Kosovo-Metohija region (*What had happened in Kosovo*, 1981, pp. 157).

A few years after the liberation, larger investments in production were started. For the purpose of building the lead smelter hall, and thus expanding the capacity in *Trepča*, during 1948, the company *Đuro Đaković* from Slavonski Brod was engaged, and the contract was signed on August 13 of the same year (Simijanović 2018: 244).⁸

Until 1951, *Trepča* operated under the auspices of the General Directorate of Metallurgy of the Government of the Federal People's Republic of Yugoslavia (hereinafter: FNRJ). Since 1951, *Trepča*, together with thirteen other mines in Serbia, has come under the jurisdiction of the People's Republic (hereafter NR) of Serbia (Simijanović 2018: 244).⁹ Already at the beginning of the 1950s, the *Trepča* Kombinat was one of the most complex labor organizations in Yugoslavia (Group of authors, 1974: pp. 31). During that decade, *Trepča* developed into a business enterprise of the greatest importance, which exceeded the boundaries of the Socialist Autonomous Province (hereinafter referred to as SAP) of Kosovo, Serbia, and even Yugoslavia. Thanks to this company, at the end of the fifties, Kosovska Mitrovica became the city with the largest number of workers of Albanian nationality in SAP Kosovo, and therefore also in Serbia (Gatalović, 2014, pp. 668).

7 AY – 17 (Fund of the Ministry of Industry FNRJ) - 124 (Department of Industry) - Folder no. 123, Letter from the Commission for Economic Reconstruction of NKOY to *Trepča* dated November 25, 1944.

8 ^{AY – 16 - 4} (Cabinet), Folder no. 4. Production of an iron structure for the *Trepča* mine.

9 AY – 23 – 15 – 16 (department of financial plan and price plan) folder no. 9, Minutes on the review of financial plans for 1951 of companies that came under the jurisdiction of the Republic of Serbia in 1951.

Since immediately after the end of World War II, on the basis of previous knowledge about ore reserves, it was reasonably assumed that the export of lead could be a significant factor in the total export of Yugoslavia, new research was planned to examine the perspective. In order to fulfill the ambitious plans of the accelerated development of *Trepča*, the planning service and the administration had to be familiar with the available possibilities. Thus, since 1947, investigative works had been started, mainly in locations where before the war research was started by a British company. After the formation of the geological service of *Trepča* in 1951, new research was carried out, but until 1954, *Trepča* financed these researches from its own resources. The research resulted in the fact that at the end of 1954, the geological service of this company produced a detailed study on the ore deposit in Kišnica, which showed the significant capacities of this deposit. In the same year, for the sake of research, small financial resources arrived from the fund of the Republic of Serbia, and for the following year, 1955, financial resources were received from the Institute for Mining and Technological Research of the FNRJ, thanks to which the research was completed and the future exploitation of this rich ore deposit was made possible (*Trepča Bulletin*, March 1955, No. 3, pp. 1-2).

Research and assessments by experts were positive. It was estimated that 56% of Yugoslavia's lead reserves were located on the territory of Kosovo and Metohija, as well as 31% of chromium reserves, 46% of coal reserves, and 26% of cement reserves (Limani 1980: 47; Vukadinović 2020: 576). Therefore, apart from lead ore, this area was also rich in other necessary resources for the successful development of mining and industry. Investigations of the site had proven that the raw material base is not a problem, but the infrastructure and the lack of modern tools and technologies are. Regarding the procurement of the necessary raw materials and other necessary matters for the construction of the infrastructure and the work itself, problems arose from the very beginning. In the beginning, the deadlines for the delivery of materials and raw materials necessary for the work by *Trepča*'s subcontractors were a big problem. Contracts were often concluded without a specifically defined delivery term clause. The management, taught by this experience, insisted on a precise and legally binding contract since 1950, because the previously imprecisely defined deadlines offered the possibility of prolongation thus jeopardizing production.¹⁰

In the first years after World War II in Yugoslavia, working conditions in mining were extremely bad. The worst working conditions then reigned in the Bor mining basin, and the conditions in *Trepča* were not much better, with the fact that in the case of *Trepča*, working in underground mines was an additional risk and difficulty. Until 1951, a huge amount of work was done by hand. There were not enough tools, machines, excavators, drills. Also, a big problem was

10 AY – 23 – 27 (group for material and financial audit) – Folder no. 16, Balance of *Trepča* for 1949, problems of the procurement service during 1949.

the lack of spare parts for machines and tools.¹¹ In the beginning, production was mostly based on numerous workers. An effort was made to compensate for the lack of tools and mechanization with a large number of working hours of numerous workers. In 1949, the total number of employed workers and officials in *Trepča* was 4,640. That year, 186 workers and officials were employed more than planned.¹² In 1950, the combine had a total of 3,847 workers and employees, and for the following year 1951, it was planned that there would be a total of 5,636 employees, which would be an increase of 146.5% more employees in just one year (Simijanović 2021: 291).¹³

During 1948 and 1949, the labor shortage was present throughout Yugoslavia, especially in mining, and then in construction and forestry (Dobrivojević, 2009, pp. 106). When it comes to *Trepča*, jobs in pit horizons and in the smelter were the most unpopular at that time. It was precisely in these plants that the greatest fluctuation of labor force occurred, especially in the summer months. However, the usual attitudes of the administration about the lack of motivation of peasant workers to diligently fulfill their work obligations in the case of the smelter could not be justified. Although smelter workers had a somewhat privileged status, regular mandatory medical examinations, larger meals and the right to have special clothes and shoes, in practice the supply of protective equipment, even work clothes and shoes, was irregular. The workers were not equipped with protective masks, although they were mandatory in the smelter. Most often, they worked in their own clothes and shoes, in which they went home.¹⁴ However, the refinery department suffered the greatest shortage of manpower, because there was not a sufficient number of skilled, trained locksmiths to eliminate frequent boiler malfunctions; there was evident lack of those who were willing to accept a job when they knew their health would be at risk (Simijanović 2021: 292).¹⁵

With the arrival of new educated workers and further education of those already employed, the educational structure of the employees changed, however, the deficit of educated personnel was not easily solved.¹⁶ The fact that even in 1955, 50% of the workers in the smelter were illiterate, and that the company lacked 650 qualified and 250 highly qualified workers, was devastating for the factory management. Because of this situation, a year earlier, in 1954, a sub-committee of the Workers' University in Zvečan was organized (*Trepča Bulletin*, June 1955, no. 6, pp. 1). Over the next year, the Labor University in Zvečan trained close to a thousand workers and officials in various courses. However, the deficit of qualified workers still existed. Even at the end of 1956,

11 AY – 23 – 3 (secretariat) – Folder no. 7, Examination of the final accounts of Bor for 1949.

12 AY – 23 – 27 – 16, Calculation of the salary fund of *Trepča* for the year 1949.

13 AY – 23 – 15 – 16 – 9, Record of review of financial plans for 1951 of companies that came under the jurisdiction of the Republic of Serbia in 1951.

14 AY – 23 – 27 – 16, Balance sheet of *Trepča* for 1949. Smelter, workforce.

15 Ibid, refinement department.

16 AY – 23 – 16 – 27, Annual report of *Trepča* for 1949, 11.

the situation regarding the education and professional skills of the workers was unsatisfactory. According to the statistical indicators that were published in the newspaper *Jedinstvo*, in the territory of the then AKMR, out of a total of 56,899 employees in that area, 21,606 of them were without appropriate qualifications, and 5,615 workers were without elementary school. In the given circumstances, the form of workers' universities has proven to be very effective in solving the problem of the lack of workers who possess the necessary knowledge and skills for the needs of their workplaces (*Jedinstvo* 8 October 1956: year XII, no. 41, pp. 4; Simijanović 2021: 292).

The management of *Trepča* strived to achieve „record“ results. *Trepča* collectively became the winner of the May Day competition in 1947, completing the tasks of the first planning year forty days before the deadline (Group of authors, 1974, pp. 22). The planned tasks of *Trepča* for 1948 were completed with 116.5% (Zlatković, 2000, pp. 65). Such a trend continued in the following years. The total production plan in January 1955 was achieved with 96.63% (*Trepča Bulletin*, January 1955, No. 1, pp. 11). Productivity was shown by plants and activities: mine, flotation, smelter and refinery. The management of *Trepča* zealously followed the competitive and record-breaking spirit of that time. Over time, from achieving records, which had a much more important propaganda role than profit, attention gradually shifted to the question of real productivity and profit of total production. Despite this, some analyzes have estimated that there was a surplus of labor in production. In *Trepča* at the beginning of 1956, 6% of workers were employed more than was necessary, in *Ajvalija* 3.7%. Overhead costs were significant in all *Trepča* mines. On average, a worker cost RSD 18,000 per month. However, not a small number of workers came to their workplaces on foot, from a distance of up to 30 kilometers. These workers would arrive at work already exhausted, so they could not even provide the expected productivity. Production suffered the most due to the absence of a large number of workers during the agricultural work season. A large number of workers were not interested in production, they invested all their work effort in their agricultural production, and they wanted to keep the position of an employee only because of the social benefits for themselves and their families. The problem of illness among workers who spent many years working in the mine turned out to be a significant burden on the fulfillment of the planned productivity. This category of workers did not meet the conditions for acquiring the right to a pension, and on the other hand, it was inhumane to keep them in the same jobs. It was practiced to find other easier jobs for such workers. Practically because of that category of workers, a maintenance section was established, but according to the economists at the company, there was no real need for that section. Transferring to this category of workers and getting an easier job also became the subject of machinations and corruption, many were unjustifiably transferred to that category. Even many people who were sick from before were admitted to the mines, only to be transferred to the maintenance service after a short time, based on their incapacity, so that this

service was soon burdened with an excess of workers (*Jedinstvo*, 9. 1. 1956, XII бр. 2, pp. 4; Simijanović 2021: 294–295).

In order to increase the profitability of production, by the beginning of 1956, the norm in *Trepča* was increased from 6.4 to 7.2 tons per wage. *Trepča* was also the first company in Kosovo and Metohija in which the lay-off system was introduced, all with the aim of reducing production costs and increasing productivity (*Jedinstvo*, January 30, 1956, year XII No. 5, pp. 3). In the first half of 1956 alone, the number of employees in industry and mining, according to the statement presented at the session of the Executive Committee of the People's Committee of the Autonomous Kosovo and Metohija Region (hereinafter: AKMR), was reduced by 3.7%. The policy of reducing the number of employed workers in *Trepča* had the greatest influence on such a situation (*Jedinstvo*, 24 September 1956, year XII, no. 39, pp. 1). At the beginning of 1956, significant savings were achieved after the construction of an apartment block for housing single workers. One billion and one hundred million dinars were allocated for the capital construction of *Trepča* in 1956; 70% of those funds were earmarked for the purchase of equipment, the rest was earmarked for the construction of roads and other infrastructure. These funds were provided from the depreciation fund of the company (*Jedinstvo*, 27. 2. 1956, XII бр. 9, pp. 4; Simijanović 2012: 295).

The measures taken in the field of savings and better organization of work with the aforementioned housing construction, as well as the introduction of more modern work methods, have led to certain savings. Javid Nimani, the first vice-president of the Regional People's Committee of AKMR, also praised the achievements in this regard (*Jedinstvo*, 7 May 1956, Year XII No. 19, pp. 3). Despite everything, during 1956 the half-year production plan was fulfilled with 44.7%, increasing the norm to 7.2 tons per wage. Reorganization and modernization did not help. An unexpected drop in the percentage of metal in the ore was cited as the biggest cause. The earlier percentage was 7.2%, while in 1956 the quality of the ore dropped to 6.5% of the metal. The solution was found in the opening of new mines in which there is ore of better quality. (*Jedinstvo*, 13. 8. 1956. year. XII No. 33, pp. 1; „Ore reserves are discovered by geologists of *Trepče*“, *Jedinstvo*, 4. 6. 1956., XII No. 23, pp. 3; *Jedinstvo*, 24. 9. 1956. Year XII No. 39, pp. 1; Simijanović 2021: 295).

6. TREPČA'S CONTRIBUTION TO THE ECONOMIC GROWTH OF AKMR, SERBIA AND YUGOSLAVIA

Until the mid-fifties of the 20th century, the *Trepča* Kombinat was positioned as one of the leaders of Yugoslav mining and metallurgy, which had a significant impact on the overall economic activity in the country. In those years, Yugoslavia was the first in Europe with a total annual production of lead of about 70,000 tons. Although the practice of beautification was common in

the newspapers of that time, the data from the pages of this newspaper cannot be completely ignored, according to which this company in 1955 participated with 1% in the total national income of Yugoslavia, and 10% in the foreign exchange inflow. An important condition for success was that the large volume of production also provided the possibility for *Trepča* to independently organize sales in the country and be a profitable partner to export companies. That *Trepča* was indeed a significant factor in the overall Yugoslav economy is indicated by the fact that the company Jugometal, otherwise specialized in the export of Yugoslav ores and metals abroad, since its foundation in 1946, has been successful mainly thanks to *Trepča*. By 1955, *Jugometal* achieved 27.7% of export turnover from the export of *Trepča*'s products. The company *Jugometal* has built good business relations in the United States of America as an exporter without intermediaries. Thanks to professional operations during the Korean War, when many renowned lead producers and sellers took advantage of the economic situation and prices due to increased demand, *Jugometal* maintained a reputation as a reliable partner in the US market. The contract between *Trepča* and *Jugometal* was based on a simple clause: *Jugometal* took a 0.5% commission on the sale of lead, silver, and bismuth, i.e. a 0.75% commission on zinc and pyrite concentrate, calculated and charged for its export mediation services in RSD equivalent (*Trepča Bulletin*, January 1955, No. 1, pp. 15–18; Simijanović 2021: 296).

Thanks to the production and profits of *Trepča*, Kosovska Mitrovica became the richest city in Kosovo and Metohija already in the early fifties of the 20th century. The People's Committee of Zvečan County and the City Assembly of Kosovska Mitrovica, thanks to the good budget that was filled due to *Trepča*'s income, invested in the construction of infrastructure, tourist facilities and other capital constructions in the mentioned county. Also, in the first post-working decade, the *Ajvalija* mine was modernized and expanded, and the *Kišnica* mine was opened. Thanks to *Trepča*, primarily the exploitation of its mines and production, as well as the work of other mines, non-ferrous metallurgy participated with 74.3% in the total industrial production in Kosovo and Metohija (Vukadinović 2020: 577; Mađaraj 1989: 45). Despite the growth and profit of non-ferrous metallurgy, the national income per capita at AKMR in 1957 was only 41.6% of the Yugoslav average (Vukadinović 2020: 579). While the national income per capita at the FNRJY level was 66,400 dinars, at the AKMR level it was only 34,501 dinars (Gatalović 2016: 272). In the mid-fifties of the 20th century, the total population in AKMR numbered around 950,000 people, of which only 268,000 were economically active, mostly in agriculture. Despite *Trepča*, as the most dominant mining and production combine and other plants in that area, the number of employees in production was still only about 31,000 workers (Vukadinović 2021: 330).

The rate of economic growth in the area of Kosovo and Metohija in the period 1947-1956 was 3.5% on average per year. *Trepča* contributed a large part to that modest growth for the area of the entire AKMR. In the future economic

plans of 1957-1961, 1962, 1963, 1964, the focus was on the goals of AKMO reaching the Yugoslav average through increased investment. The federal level of government also got involved in solving the economic underdevelopment of this area. 50 billion dinars were immediately allocated from the federal budget for investments in AKMR. The largest part of those funds, 22.7 billion, was intended for the development of industry and mining, 16.85 billion was also invested in agriculture, and the rest was intended for transport and financing of the Regional Investment Fund of Kosovo and Metohija. Since the adoption of the Social Plan of Economic Development of AKMO in December 1957, which covered the period until 1961, incomparably larger investments of the federal budget in this area began. From 1956 to 1960, total investments in AKMR were 65 billion dinars, of which 77% was non-returnable aid from the federation. Thanks to all of the above, the growth rate in the following period 1957-1963. increased to 7.9% per year. In that period, federal financial resources contributed the most, with 71% participation in economic investments in fixed assets at AKMR (Vukadinović 2020: 580-582; Vukadinović 2021: 330-332). All the investments and the already extensive non-ferrous metallurgy gave results in that the area of Kosovo and Metohija contributed with 84.2% of the production of lead-zinc ore, 80% of refined lead, 76.4% of caustic-baked magnesite and 89.9% of silver production in Yugoslavia (Vukadinović 2020: 582). Large investments and the profitability of Trepca's products led to the fact that in the following period, specifically in 1960, the average national income per capita in Kosovska Mitrovica was 136% of the Yugoslav average, while at the same time in the poorest municipality of Kosovo and Metohija, the municipality of Dragaš, the income was only 10 % of the Yugoslav average (Vukadinović 2020: 583-584). AKMR was officially included in the list of underdeveloped areas at the Yugoslav level for the first time through the social plan of economic development of FNRJ from 1957 to 1961. Then even more intensive economic investments in development were started. However, despite investments of state importance, development was slowed down due to various factors and circumstances; due to centuries of backwardness in the territory of Kosovo and Metohija, high natural increase of the Albanian national minority, pronounced disproportion between employed and dependent persons, overpopulation in agricultural areas. What's more, despite previously being given the highest level of investment priority, FNRJ was forced, especially since 1963, to allocate more and more additional financial resources, in order to achieve the desired development (Gatalović 2016: 273; Gatalović 2018: 291).

To the above-mentioned causes of extremely slow development, we would add the proven hostile attitude of the majority towards the state, as well as the nationalism present in the majority, even the chauvinism of many members of the Albanian national minority towards the Serbian people. Such a mood certainly, in numerous examples, affected the productivity and profitability of labor organizations, nationalism additionally affected the irresponsible attitude towards work and means of work among certain individuals.

7. CONCLUSION

The exploitation and processing of ores in the modern era in the areas of earlier medieval mines in the area of today's northern Kosovo and Metohija and the Kopaonik mountain began after the First World War. The beginning of exploitation and processing was preceded by research by the English mission formed in the middle of 1919, which had the task of assessing the damage caused to the economy during the enemy occupation in the First World War. It was also tasked to propose the necessary measures for the reconstruction of the devastated areas. The commission soon submitted an extensive report entitled *Geology and Mineral Resources of the State of Serbs, Croats and Slovenes*, which indicated the potential for future mining in the area of Kopaonik and the north of today's Kosovo and Metohija, where there was no modern mining exploitation at the time.

British investment capital immediately appeared, which wanted to invest and exploit mineral potential. The concessions were bought in 1925, and at the end of 1927, the *Selection Trust* company formed the companies *Trepča Mines Limited* and *Kopaonik Mines Limited*, based in London, as their sister companies, which then directly engaged in the exploitation of ore deposits. Until 1941, British capital had a monopoly on lead mining in Yugoslavia. Nevertheless, exploitation and processing affected the economic and demographic development of Kosovska Mitrovica, Zvečan and other smaller places near the mines in the period between the two world wars.

Exploitation and development was interrupted by World War II. In April 1941, representatives of the German private companies *Mansfeld A.G.* and *Projsag* took over the facilities and mines of *Trepča* without any damage. Immediately after the German occupation, the owners became German private companies, which were then given the right to exploit the mines as enemy property while the war and hostility with the state of the headquarters of the owner of said property continued. *Trepča* was liberated at the end of November 1944.

In the first years after the 20th World War, the biggest problems in the production and business of *Trepča* were caused by insufficient and poor infrastructure, as well as the lack of raw materials for reconstruction and the process of exploitation.

Working conditions in the first post-war years in the *Trepča* mines were extremely bad. Until 1951, a huge amount of work was done by hand.

An effort was made to compensate for the lack of tools and mechanization with a large number of working hours of numerous workers. Over time and thanks to the increase in production, the need for qualified workers and engineers grew. On the other hand, the problem of excess employees in workplaces that did not require trained personnel at that time also appeared.

Thanks, above all, to the demand on the world market and the competitive price of its products, *Trepča* became one of the most important exporters in Yugoslavia by the mid-fifties of the 20th century. In those years, Yugoslavia

was the first in Europe with a total annual production of lead of about 70,000 tons. In 1955, this company participated with 1% in the total national income of Yugoslavia, and 10% in foreign currency inflow.

Thanks to the production and profits of *Trepča*, Kosovska Mitrovica became the richest city in Kosovo and Metohija already in the early fifties of the 20th century. Also, thanks to *Trepča*, primarily the exploitation of its mines and its production, as well as the work of other mines, non-ferrous metallurgy participated with 74.3% in the total industrial production in Kosovo and Metohija.

All the investments and the already extensive non-ferrous metallurgy gave results as the area of Kosovo and Metohija contributed with 84.2% of lead-zinc ore production, 80% of refined lead, 76.4% of caustic-baked magnesite and 89.9% of silver production in Yugoslavia.

Large investments and the profitability of Trepča's products led to the fact that in the following period, specifically in 1960, the average national income per capita in Kosovska Mitrovica was 136% of the Yugoslav average.

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Јован Д. СИМИЈАНОВИЋ

ТРЕПЧА У ЕКОНОМИЈИ ЈУГОСЛАВИЈЕ (1927–1956)

Резиме

Оснивању компаније *Трејча* су претходила истраживања од стране енглеске мисије формиране средином 1919. због задатка да се процени штета нанета привреди настала током непријатељске окупације у I светском рату. Поред осталих, Комисија је обишла и област Копаноника и север данашњег Косова и Метохије, области где тада није постојала савремена рударска експлоатација и констатовала да постоје потенцијали. Одмах се појавио Британски инвестициони капитал, који је желео да инвестира и експлоатише рудне потенцијале. Откупљене су концесије 1925., а крајем 1927. године компанија *Selection Trust* је формирала компаније *Trepča Mines Limited* и *Kopaonik Mines Limited*, које су се потом непосредно бавиле експлоатацијом рудних налазишта. Британски капитал је све до 1941. године поседовао монопол на експлоатацију олова у Југославији. Ипак, експлоатација и прерада су утицали на економски и демографски развој Косовске Митровице, Звечана и осталих места у близини рудника у периоду између два светска рата.

Експлоатацију и развој је прекинуо II светски рат. Компанија *Mansfeld A. G.* и *Projsag* је у априлу 1941. преузела постројења и руднике *Трејче*. Крајем новембра 1944. године је ослобођена *Трејча*.

У првим годинама након Другог светског рата највеће проблеме у производњи и пословању *Трејче* узроковали су недовољна и лоша инфраструктура, као и недостатак репроматеријала за обнову и процес експлоатације. Све до 1951. године огроман обим посла обављао ручно. Великим бројем радних часова бројних радника настојало је да се надомести недостатак алата и механизације.

Потражња на светском тржишту и конкурентност цена производа *Трејче* је узроковало то да је до половине педесетих година XX века ова компанија постала један од најзначајнијих извозника у Југославији. Тих година Југославија је са укупном годишњом производњом олова од око 70.000 тона била прва у Европи. Ово предузеће 1955. године учествовало са 1% у укупном националном дохотку Југославије, и 10% у девизном приливу.

Захваљујући производњи и профиту *Трејче* већ почетком педесетих година XX века Косовска Митровица је постала најбогатији град на Косову и Метохији. Такође, захваљујући *Трејчи*, као и раду осталих рудника обојена металургија је учествовала са 74,3% у укупној индустријској производњи на Косову и Метохији. До краја педесетих година XX века област Косова и Метохије доприносила са 84,2% производње оловно-цинкане руде, 80% рафинисаног олова 76,4% каустично печеног магнезита и 89,9% производње сребра у Југославији.

Кључне речи: *Трејча*, рударство, металургија, Косовска Митровица, Косово и Метохија, Србија, Југославија.

*Ivana Ž. IVANOVİK**

Institute for Public Opinion Research - TIM Institute Skopje

THE IMPORTANCE OF SCIENTIFIC RESEARCH PROJECTS FOR THE DEVELOPMENT OF MODERN COUNTRIES

Abstract: Fundamental research is conducted with the aim of contributing to science through the systematic collection, interpretation and evaluation of data. That activity is deeply planned.

In addition to fundamental research, the scientific research activity also includes applied research, the results of which contain originality, and are aimed at expanding and improving the activity and overall knowledge.

The purpose of any scientific research is to give an answer and find a solution to numerous previously posed questions and identified problems. For every question and problem that becomes the subject of study and research, it is necessary to create a project so that it can be thoroughly studied. Research as a synchronized, dynamic, coordinated, professional and creative activity, which brings into functional connection all the activities that need to be performed in order to achieve the desired goal, leads to the preparation of a project as a fundamental document of every scientific research.

Scientific research projects are studies that should be systematically planned before starting the entire complex research process.

Key words: research, scientific-research work, project, development.

1. INTRODUCTION

Knowledge is an increasingly important resource of modern states. It contributes to the functioning of democracy and innovation and helps countries to be globally competitive. But science that significantly contributes to the production of knowledge faces new challenges.

The role of science in an increasingly fragmented and digital society, as well as its importance for politics and civil society, will be redefined. Science can never offer universal truth or an objective view of the world. However, it can offer methodologically testable interpretations and can challenge certainties

* Senior research associate, ivanovikivana@gmail.com

and trigger reflections. Science has an important social role and at the same time bears a great responsibility precisely when the situation is not clear. How can science clearly communicate existing uncertainties and disputes and yet avoid the impression of arbitrariness?

The question is often asked – „is research in developing countries worth it?“ The question is sometimes asked in another way, shouldn't a developing country concentrate on other tasks, and leave research to more developed countries?

I think so, but it has to be kept in proportion. Clearly, it would be unwise for all graduates to undertake a research course after obtaining their first degree in science. This would be too great a financial burden on the exchequer, so this privilege must be reserved for a relatively small minority who may pursue some research occupation in their later life.

Without research, we will not have development in the country. If we want our nation to develop, then we must work on our innovative ideas, so that we can build our nation very well with a strong economy. Through research, we will bring our nation to another supreme level of success.

What is the importance of research?

Research generates new ideas, builds credibility and develops understanding and analytical skills so that the researcher can apply his courage to rationalize the work and build a better foundation for the followers and so that they can make the right decision at the right time without facing obstacles.

Research is important for developing analytical concepts and enabling better results. Research encourages work and helps gain credibility.

Research is a powerful technique for discovering new concepts through proper observation and facilitates making the right decision at the right time. Research is the backbone and prerogative of quality work in almost every field. No matter how competent and experienced a person is in their field, without proper research things go wrong and the success rate drops.

Research is vital for almost everyone, regardless of career field – from doctors to lawyers, students to scientists, from communication to the arts, from professional people to those engaged in small unskilled jobs, conducting research is of great importance. It is a myth that research is only for science students.

2. WHAT IS RESEARCH?

Research is the pursuit of knowledge through analysis, observation, investigation, description and explanation of an unexplored idea, fact or methodology. It allows you to develop a suitable strategy for carrying out a particular job or project without digging too much into unnecessary things and makes it easier to make the right decision when the situation calls for it.

Research reveals many unexplored things that stimulate work ability and develop understanding and decision-making. Without research, one must trust

one's intuition or imagination, which cannot be accurate. This is why research is important for increasing performance and better results.

Research is important before you start working, and here are 5 reasons why research is important to stimulate better results and success for people.

2.1 Research helps you achieve your goal

Many companies have found success by conducting research on their products and services through customer satisfaction exercises. Through surveys, companies offer feedback on their products and services to find out how satisfied customers are and this gives them the opportunity to adjust their business and improve their services.

2.2 Research reveals new ideas and facts

Research encourages new ideas and facts; it allows the researcher to draw new conclusions about his research topic. The deeper he investigates a particular subject, the better he can enter the field and properly help position his ideas. Research encourages diverse ideas and helps build insightful and analytical concepts.

When a student is curious to know, research provides access to a deeper explanation of the different dimensions of the subject. Research provides a great learning curve and instills positivity in the researcher and students through the exploration of new ideas and facts. It also helps raise awareness of the subject and provides new facts.

2.3 Research develops understanding and decision-making

It is the most valuable tool to understand the complexity of the problem, to disapprove of lies, to uphold the truth, and to further create knowledge that is reliable and authentic. Conducting research develops better understanding and improves decision-making abilities. Researchers analyze project details and help make sound and well-informed decisions.

To understand the problem and make decisions, it is important to know the facts observed through research for better results. Research drives decision making and develops better understanding for problem solving.

2.4 Research helps to understand what is not working

Research gives you the opportunity to discover and explore many new things that are not working for your project. Research helps you find a new concept or some amazing information about any particular topic, and it also reveals many antagonistic elements that are not suitable for your project. Research not only helps to explore what is useful and works for your project, but also explains the various aspects that are invalid and do not work for your venture

2.5 Research builds credibility

Any argument or statement based on imagination or intuition affects the reputation and credibility of the subject and researcher. Research on these topics increases credibility and weight and critics would not find loopholes and appreciate the research project. It also helps to boost the researcher's confidence. Research builds a solid foundation when new ideas are studied, experimented and explained to participants and organizations to accelerate the success rate to gain credibility for the research project.

Research is a broad concept needed in almost every field to improve performance and quality of work. It is important for better understanding, decision making and insightful and analytical ideas to enable better results. Without extensive research projects can be derailed and the success rate minimized. Work without proper research would be fraught with errors and omissions that affect the reputation of the company and the researcher.

Research generates new ideas, builds credibility and develops understanding and analytical skills so that the researcher can apply his courage to rationalize the work and build a better foundation for the followers in the career field and so that they can make the right decision at the right time without facing obstacles.

Market and social research provides accurate and timely information about the behavior, needs, attitudes, opinions and motivations of the population. Armed with this knowledge, businesses are able to develop products and services to meet the desires of their customers, and governments can adapt policies and programs to the needs of citizens. Also, important national statistics on social issues, television viewing, tourist trends, unemployment and so on can be reliably determined.

Research contributes to economic well-being by ensuring that ventures are relevant and properly targeted.

Consumers of market and social research include state and federal government agencies, companies, and nongovernmental organizations—in fact, any organization that needs to better understand the community, trends of any kind, or its own customers will use research.

Research projects inform decision-makers' responses to a range of important issues, including the planning of major transport and infrastructure projects, responses to climate change, tax policy and many other areas.

Market and social research is not marketing and cannot be used to „push“ a product or service.

The main purpose of research is to inform action, gather evidence for theories and contribute to the development of knowledge in the area of interest.

Why is research necessary and valuable in our daily lives? Because:

- it is a tool for building knowledge and facilitating learning;
- it is a tool for understanding the problem and raising public awareness;
- it helps us succeed in business;

- allows us to refute lies and support truths;
- it is a tool for finding, measuring and exploiting opportunities;
- promotes confidence in reading, writing, analyzing and sharing valuable information;
- provides food and exercise for the mind.

3. USING RESEARCH TO UNDERSTAND CURRENT ISSUES

3.1 Using research to understand people and to create realistic fiction and stories

Many actors take the time to research individuals to better understand their roles, to gain an inner understanding of what it's like to have a certain identity.

Many films, plays, present stories based on real-life events and problems. A serious content producer knows how vital research is in underpinning the context of stories to entertain and educate audiences across a variety of media platforms.

3.2 The importance of research and development

Research benefits business. Many successful companies, such as those producing consumer goods or mass-market products, invest in research and development. Various industries that involve science and engineering processes (such as agriculture, food and beverage, manufacturing, healthcare and pharmaceuticals, software, energy..) have high R&D costs because it is key to creating and improving their products and services.

Research and development can also help provide an edge over competitors. Figuring out how to make things happen more efficiently and to differentiate a company's offerings from those of its competitors can increase a company's market value.

3.3 Market research and targeted marketing

Research can also help a company maintain a positive commercial image, retain existing customers, and attract new customers through targeted marketing. Marketing is a form of communication, and for that communication to be effective, businesses must understand their customers.

This usually happens through market research, which can include surveying psychological studies on consumption, hosting focus groups, testing products with a select group of customers, satisfaction surveys of existing customers, and researching the business's main competitors, among other strategies. The most successful companies, large and small, base their product design, service offerings, and marketing communications on insights gained from fundamental research processes.

3.4. Field testing and reviews

Scientists also engage in research to test the validity and reliability of their claims or those of other scientists. Their integrity and competence depend on the quality of their research. However, not everything that scientists come up with is accepted. A scientific paper is usually peer-reviewed before publication. This means that when an individual publishes research, others in the field fact-check and investigate it for common biases, statistical errors, and methodological issues before it is shared with the scientific community at large.

Professional and credible journalists also undertake thorough research to determine the veracity of their stories. Fact-checking to detect research bias, propaganda and fake news.

With internet technology and social media, pseudo-journalism has become a social concern. Fake news is always in the spotlight during political campaigns.

Fact-checking to determine the truth is an integral part of the research process.

Research helps people to nurture their potential and achieve their goals by taking advantage of various opportunities. This could mean securing employment, awarding scholarships or grants, securing project funding, initiating business collaborations, finding travel opportunities on a budget, or securing other small everyday victories.

I would like to end here with a World Bank research study from 2006 that highlighted sleep as a key factor in effective learning, i.e. the process of obtaining optimal learning using few resources. The study reiterated the role of sleep in: (1) protecting and restoring memory, (2) advancing learning, and (3) improving abilities and problem solving. It went on to note that „knowledge is better consolidated when people study when they should be awake, rather than, say, in late-night sessions.“ The need for research into „the memory capacity of poor people in low-income countries“ was stated, in order to enable teachers to better help poor students to learn basic skills.

CONCLUSION

Research is what drives humanity forward. It is fueled by curiosity: we become curious, ask questions and immerse ourselves in discovering everything we need to know. Learning is progressing. Without curiosity and exploration, progress would stop and our lives as we know them would be completely different.

Social research helps in gaining knowledge about human society. The dynamic nature of society makes it a challenge to understand the movement towards progress and prosperity. They allow us to analyze social behavior, understand its causes and accelerate its evolution.

Social research expands our knowledge to drive discovery and innovation. It contributes to the growth and development of a nation or the entire human society.

Social research refers to the study of individuals and societies and is often used to identify social patterns that occur regularly in social life. It can be defined as a systematic understanding of social facts or phenomena. It is used to gather information about the social world, to devise a course of action or simply to develop new knowledge.

The goal of social research is to identify cause-and-effect relationships between social problems so that these problems can be solved to improve social well-being.

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Ивана Ж. ИВАНОВИК

ЗНАЧАЈ НАУЧНО-ИСТРАЖИВАЧКИХ ПРОЈЕКТА ЗА РАЗВОЈ САВРЕМЕНИХ ЗЕМАЉА

Резиме

Фундаментално истраживање се спроводи у циљу доприноса науци кроз систематско прикупљање, тумачење и евалуацију података. Та активност је дубоко планска.

Научно-истраживачка делатност поред фундаменталних истраживања обухвата и примењена истраживања, чији резултати садрже оригиналност, а усмерена су на проширење и унапређење делатности и целокупног знања.

Сврха сваког научног истраживања је да одговори и пронађе решење за бројна претходно постављена питања и идентификоване проблеме. За свако питање и проблем који постаје предмет проучавања и истраживања потребно је изградити пројекат како би се могао темељно проучити. Истраживање као синхронизована, динамична, координирана, стручна и креативна делатност, која доводи у функционалну везу све активности које је потребно извршити да би се постигао жељени циљ, доводи до припреме пројекта као темељног документа сваког научног истраживања.

Научно истраживачки пројекти су студије које треба систематски планирати пре почетка читавог сложеног истраживачког процеса.

Кључне речи: истраживање, научно-истраживачки рад, пројекат, развој.

*Gordan B. BOJKOVIĆ**

Institute for Serbian Culture Priština – Leposavić

SERBIAN MEDIEVAL STUDIES ABOUT KOSOVO AND METOHIA, THE PREVIOUS THIRTY YEARS**

Abstract: The area of Kosovo and Metohija represents the political, religious, economic and cultural center of the medieval Serbian state from the beginning of the 14th century until the Battle of Marica in 1371. The aim of this paper is to present to what extent the topics related exclusively to this space are present in scientific works in the last thirty years, which is an indicator of the attention paid to it in Serbian medieval studies in general.

Key words: Kosovo and Metohija, Middle Ages, Serbia, Serbian Orthodox Church.

The period of the last thirty years begins with the disintegration of the common state of the Southern Slavs. With the disappearance of the joint state and the ruling ideology, a new situation arose in every respect. The final consequence is also the restoration of the independent state of Serbia. This change was inevitably reflected in the historiography, as well as in the national history of the Serbs and Serbia in the Middle Ages. One of the important consequences of these events is that the territory of the newly formed states of the Southern Slavs does not match, either state-wise or ethnically, the situation in the Middle Ages. Therefore, Serbian medieval studies also deal with spaces that are occupied today by other nations and other, sovereign states. Additionally, this issue has been complicated by the unilateral declaration of independence of the southern Serbian province of Kosovo and Metohija, which has been the central area of the Serbian medieval state since the end of the 13th century. Today, there is a strong tendency in that area to falsify the past and rearrange the undoubtedly established situation in the past in accordance with the contemporary situation, all in the service of the needs of current politics.

* Research Associate, gordanb7@gmail.com

** The paper was created within the scientific research work of NIO under the Contract concluded with the Ministry of Science, Technological Development and Innovation of the RS No: 451-03-47/2023-01/200020 as of 03.02.2023.

It must be pointed out right away that Serbian medieval studies in general in the period 1990-2015 had already been researched in the book *Metodološki i istoriografski prilozi* by prof. dr Siniša Mišić.¹ Among other things, in this book there is an overview of the situation at the turning of this period, assessments of the study of the sources, methods and approaches to the study of certain issues are discussed, some new directions of interest and areas of study that appear in this period are presented, as well as some current areas of Serbian historiography of the Middle Ages. These evaluations will be used in this paper as well.

In history, or better, in historiography, fundamental research is the exploration of new sources or the opening of new topics by studying already known sources. Sources for the medieval history of Serbia have been published since the 19th century. At first they were only read and then printed; over time they also received editions with a critical apparatus. In this regard, the documents published in the *Stari srpski arhiv*² are the most fully processed methodologically. This journal was launched by the Department of National History of the Middle Ages and Historical Geography of the History Department of the Faculty of Philosophy of the University of Belgrade. The magazine publishes diplomatic materials from the time of King Milutin. It includes, in addition to the read text of the source, a phototype edition of the original document, as well as a translation into a modern language, with a list of previous editions, if any. The following are resolved and described: diplomatic elements, toponymy, prosopographic data, certain expressions, titles, legal formulations of the Middle Ages and the circumstances in which the document was created. According to these characteristics, SSA can be a template for publishing other historical sources in the future. There remains the hope that it can be an incentive for the work on publishing the medieval Serbian diplomat achievements. Publishing historical sources makes them easily accessible to a wider circle of researchers, which can encourage fundamental research, among other things. Duplication of old writings and documents also protects them from eventual destruction, such as, for example, befell a large number of rare documents from the Middle Ages during the bombing of the National Library in Belgrade in the April War. This is all the more significant because these are rare, often unique specimens. Their loss represents an unspeakable blow to both science and culture in general.

Important, royal monasteries are connected to the territory of Kosovo and Metohija, created in the years of political and economic rise of the medieval Serbian state, whose founders are: King Stefan Uroš II Milutin, King Stefan Uroš III Dečanski and King, and later Emperor, Stefan Uroš IV Dušan. From the nineties until today, only the charter of Emperor Dušan regarding his endowment

1 S. Mišić, *Metodološki i istoriografski prilozi*, Centar za istorijsku geografiju i istorijsku demografiju Filozofskog fakulteta u Beogradu, Narodni muzej u Požarevcu, Beograd, 2021; hereon: S. Mišić, *Metodološki i istoriografski prilozi*.

2 *Stari srpski arhiv*, I-XX.

to the monastery of the Holy Archangels³ has been critically processed and published. In addition, in 2011, a phototype edition of the charter of the Banjska monastery in two books was published.⁴ The charter of Gračanica and the first charter to the Dečani monastery in the observed period were primarily dealt with by philologists. The difference is significant, because philology primarily deals with language: this is knowledge that is certainly welcome to historians, but the sphere of interest of history is different. The second and third charters to the Dečani monastery, with their content and an interval of about fifteen years, provide a valuable insight into the historical development in that area, but so far they do not have a new edition.

For the study of Kosovo and Metohija, the publication of the trade books of the Kubužić brothers in 1999⁵ is significant. These books contain important data for the economy of not only mining and trading towns, but also their wider surroundings, such as, for example, Novi Brdo. The Latin copy of the mining code of despot Stefan Lazarević was published in 2005.⁶ This document, issued specifically for Novo Brdo, was already processed in the Cyrillic script in an earlier period. Knowledge of its provisions was completed with the Latin transcription. Both of these sources, the commercial books of the Kubužić brothers and the mining law of the despot Stefan are especially important sources for economic history, but also for a number of other questions concerning social history, law and administration. The people of Dubrovnik are otherwise very present in the territory of Kosovo and Metohija, due to their economic and political interests. That activity left its mark in the Dubrovnik archive. For these reasons, the area of Kosovo and Metohija in the Middle Ages is extremely well lit by various sources.

By the end of the 20th century, three generations of medievalists had studied all the original material from the Serbian Middle Ages that we have at our disposal. That is why, when studying the past, we have to rely more and more on the results of archeology, as well as on the study and collection of facts from toponymic material, through field research. The development of the methodology of historical research in medieval studies today allows researchers to use this knowledge. They complete the knowledge of space and historical processes, since material remains are often the only type of source that has reached us.⁷ The space in which people live and its characteristics determine the material framework of the population's life and impose a certain type of organization of human communities, in order to functionally adapt to that same space and use it for their lives. Field research and toponomistic concepts⁸ represent fundamental

3 S. Mišić, T. Subotin-Golubović, *Svetoarhandjelovska hrisovulja*, Istorijски institut, Beograd, 2003.

4 Đorđe Trifunović, *Povelja kralja Milutina manastiru Banjska, Fototipija izvornog rukopisa*, Muzej u Prištini, Centar za očuvanje nasleđa Kosova i Metohije Mnemosyne, Službeni glasnik RS, Beograd, 2011.

5 D. Kovačević-Kojić, *Trgovačke knjige braće Kubužić*, Beograd, 1999.

6 S. Ćirković, *Latinični prepis rudarskog zakonika despota Stefana Lazarevića*, Beograd, 2005.

7 S. Mišić, *Metodološki i istoriografski prilozi*, 10.

8 On toponymy as a source for historical geography, see in detail: S. Mišić, *Metodološki i istoriografski prilozi*, 10-39.

research in history today, especially in historical geography. For periods and areas that are poorly, or not at all, covered by historical sources, field research is the only way to get facts from the medieval past (or any other era).

In this regard, attention must be drawn to the fact that mass emigration of the population from rural settlements and areas, which is a characteristic of the epoch in which we live, represents a serious problem for these studies. With the disappearance of the population in a certain area, the traditional microtoponymy also disappears. The cadastral books only preserve the memory of it, to some extent. Local tradition is disappearing. It is also a loss for the language, which is tragic. Regarding the protection of toponymic material, a bright but lonely example is the systematic efforts to collect it, undertaken by SANU through its Board and Language Institute. In the territory of Kosovo and Metohija, this problem is very pronounced, because it is not only the migration of the population that is present, but also the change of its ethnic structure, which also brings a change of name and title. While that process remained gradual, the existing terms were maintained, albeit in a somewhat modified form. After the sudden emigration of the Serbian population that occurred in 1999, the toponymy of this area has been changing more and more. Fortunately, part of the toponymic material from Kosovo and Metohija was collected in the sixties of the 20th century. Unfortunately, it is not »only« toponymic structures that is at risk, but also material cultural assets, especially immovable ones. Dragiša Bojović, Ph.D., drew attention to the destruction of manuscript and literary heritage in Kosmet, to which he devoted a special monograph published in 2007.⁹ Although it is not directly related to the topic of this paper, it seems necessary to draw attention to this problem.

Furthermore, we must also emphasize that fundamental research in history requires long-term, dedicated and systematic work, regardless of whether the research is carried out in archives, libraries, or in the field. Often, it implies multidisciplinary. On the other hand, the current system of scoring of scientific papers not only underestimates this type of research, but practically makes it impossible. At the moment, it is not possible to engage in fundamental research and fulfill the necessary conditions not only for selection into higher scientific titles, but also for re-selection into those already achieved. This forces researchers to consciously renounce this type of scientific work. The consequences of such an attitude towards research, which is essential for the development of a science, are devastating.

A significant number of papers have been created on the basis of existing sources in the last thirty years. In that period, Serbian medieval studies in general opened up new topics and avenues of research in the sphere of ideas, history of administration and institutions, private life and soil, and initiated research in the field of social history, history of social structures, and historical demography.¹⁰

9 D. Bojović, *Uništavanje rukopisnog i književnog nasledja i manastirskih biblioteka na Kosovu i Metohiji*, Kosovska Mitrovica, Filozofski fakultet, 2007.

10 S. Mišić, *Metodološki i istoriografski prilozi*, 75.

Unfortunately, there is still little synthesis.¹¹ One of the few is a synthesis on mining in medieval Serbia, in which the results of long-term research into this economic branch were announced.¹² Although it is much wider than the area of today's Kosovo and Metohija, this synthesis also touches it, since the largest and richest mines of precious metals in medieval Serbia were located in that area. A special book published in 2004 was dedicated to Novi Brdo, the most important mine and city center of medieval Serbia and one of the most important in Europe.¹³

In our historiography, monographs about the personalities of rulers are not common either. One of the few is the biography of Vuk Branković, a regional lord whose territory largely coincided with the territory of modern Kosmet.¹⁴ Before it, the biography of the king and emperor Stefan Uroš IV Dušan, written by Sima Ćirković and Božidar Ferjančić, was published.¹⁵ The activity of the greatest conqueror among the Nemanjići extends, militarily and politically, far beyond the scope of the medieval Serbian state. In internal politics, it left a significant mark in the codification of legislation and the administrative organization of the state. The Serbian emperor himself, however, was tied to Kosmet in many ways with his life: it was precisely there that, with a daring raid, he seized power from his father, Stefan Uroš III Dečanski. His court was also located in Prizren. Another court in which he used to live was the court of Nerodimlje, near the Svrčinski lake. Emperor Dušan was also tied to Prizren with his endowment, the Monastery of the Holy Archangels. *Svetoarhandelska hrisovulja*, with which he founded his monastery, is an important historical source. Its already mentioned edition was prepared by prof. Ph.D. Siniša Mišić and Prof. Ph.D. Tatjana Subotin-Golubović. Based on the abundance of data it provides, it simultaneously represents a kind of testimony about Prizren in the middle of the 14th century. Emperor Dušan also left a significant mark in Novo Brdo: the monumental fortifications of this large mining and economic center were built by order of the Serbian emperor. After Emperor Dušan, the biography of King Stefan Uroš II Milutin was also published by Byzantologist Vlada Stanković.¹⁶ This book therefore inevitably observes the activities of this ruler through the prism of Byzantine politics. Nevertheless, it was during the time of King Milutin that Kosmet became the central area of the Serbian medieval state, which inevitably and inseparably ties him to those areas.

Recently, a whole series of monographs by the younger and middle generation of historians have appeared, dealing with certain topics from the economic and urban life of medieval Serbia; they are largely based on original material

11 S. Mišić, *Metodološki i istoriografski prilozi*, 62.

12 S. Ćirković, D. Kovačević-Kojić, R. Ćuk, *Staro srpsko rudarstvo*, Beograd, 2002.

13 *Novo brdo*, Beograd 2014.

14 M. Šuica, *Vuk Branković – slavni i velmožni gospodin*, Beograd, 2014.

15 B. Ferjančić, S. Ćirković, *Stefan Dušan – kralj i car*, Beograd, 2005.

16 V. Stanković, *Kralj Milutin: (1282-1321)*, Beograd, 2012.

related to the areas of Kosovo and Metohija.¹⁷ These papers open new topics in the research of the social and economic life of medieval Serbia. Here, attention must be drawn to the fact that they simultaneously testify that these questions cannot be investigated, nor understood, without data related to the areas of Kosovo and Metohija in the Middle Ages. One of the topics to which special attention is paid in the observed period is urbanization. The cities and squares of Kosovo and Metohija are listed in *the Leksikon gradova i trgova srednjevekovnih srpskih zemalja*.¹⁸ This lexicon is intended to be a starting point for researching the history of towns and squares on the territory of Serbian medieval states. The area of Kosmet is relatively small compared to the entire area treated in the *Lexicon*, but the number of developed urban settlements located in Kosmet clearly indicates the importance of that territory in the Middle Ages, testifying to advanced social processes characteristic of the late Middle Ages on the European continent.

The importance of this region is further indicated by the fact that these cities are religious (Peć), political (Prizren) and economic (Prizren, Novo Brdo) centers, some of which surpass the borders of the state in their importance. In addition to them, a whole series of local centers developed gradually, and they gained more and more importance over time and developed into important places (Velika Hoća, Priština, Trepča, Vučitrn...). The book *Trgovi i urbanizacija Srbije u srednjem veku* by Božidar Zarković is largely based on material from this area, although it analyzes the entire area of the medieval Serbian state.¹⁹ The same author also published a paper on Kopaonik in the Middle Ages.²⁰ Some of the most important mining areas of this mountain lie on the territory of Kosmet.

A special place in the communication of research results was occupied by scientific gatherings, from which proceedings were published. SANU organized a scientific conference on Archbishop Danilo II back in 1987. A collection of papers from this gathering was published in 1991.²¹ It illuminates the activities of one of the leading figures in the religious, intellectual and political life of Serbia at the turn of the 13th and 14th centuries, as well as the general circumstances

17 B. Zarković, *Trgovi i urbanizacija u srednjem veku*, Kosovska Mitrovica, 2017; A. Fostikov, *Zanatstvo srednjevekovne Srbije*, Beograd-Požarevac, 2019; M. Štetić, *Vinogradarstvo u srednjevekovnoj Srbiji*, Beograd, 2021; M. Koprivica, *Vlastelinstva i ekonomija manastira srednjevekovne Srbije*, Beograd-Niš, 2022.

18 *Leksikon tradova i trgova srednjevekovnih srpskih zemalja – prema pisanim izvorima*, red. S. Mišić, Beograd, 2010.

19 B. Zarković, *Trgovi i urbanizacija Srbije u srednjem veku*, Kosovska Mitrovica, 2017; it must be emphasized that the author's conclusions about the origin and division of the square as a type of settlement do not agree with the previous results of historiographic science; those results are listed in the introduction of the aforementioned *Leksikon gradova i trgova srednjevekovnih srpskih zemalja* by the editor S. Mišić, with the most important references in this regard.

20 B. Zarković, *Kopaonik u srednjem veku*, Institut za srpsku kulturu Priština/Leposavić, 2022.

21 *Arhiepiskop Danilo II i njegovo doba*: international scientific meeting held on the occasion of the 650th anniversary of his death: Srpska akademija nauka i umetnosti, Beograd, 1991.

of that period. A significant part of Archbishop Danilo II's activities was related to the area of Kosovo and Metohija: not only did he serve as archbishop in Peć, but he was also connected with the monasteries of Banjska and Dečani. There are three collections of papers dedicated to the Battle of Kosovo from 1389.²² Several battles took place on the Kosovo field during the Serbian Middle Ages, but the one from 1389 captured the imagination of all social strata during the centuries-long period. The rich epic separated it from real events. With these gatherings, the battle itself was returned to the framework of rational reasoning. Scientific conference from 1992. is dedicated to the social structure of Serbian urban settlements. Miloš Blagojević's paper on the city of Prizren, its urban area and its relationship to the parish was published in the proceedings of the meeting.²³ The scientific gathering dedicated to the Banjska monastery went beyond the local framework. Proceedings were published in 2007.²⁴ Papers regarding history, archaeology, history of art, history of literature deal not only with the monastery of Saint Stephen, but also with the era of King Milutin, in which medieval Serbia stepped out of the shadow of other Balkan powers.

In addition to the mentioned scientific gatherings, in the observed period there several if them held which do not have the area of Kosovo and Metohija as their topic, but which inevitably refer to it. From the international scientific conference *Vlast i moć, Vlastela moravske Srbije od 1365-1402.* held on the territory of Kruševac in 2013, a thematic anthology was published in Kruševac in 2014, which contains a text about the rise of Prince Lazar.²⁵ The heritage properties of the legendary ruler of Moravian Serbia were located in the vicinity of Prilepac, near Novi Brdo. From there, through family ties and family-political alliances, Prince Lazar Hrebeljanović began his rise to ruling power. In 2014 in Trstenik there was a scientific meeting aheld bout Princess Milica and her age.²⁶ Prince Lazar Hrebeljanović himself is originally from Kosovo, from the vicinity of the aforementioned Prilepce, where his heritage properties were actually located. With their subject matter, these collections shed light on the circumstances

22 *Okrugli sto, Kosovska bitka u istoriografiji*, Zbornik radova sa okruglog stola, Beograd, 1990; *Kosovska bitka 1389. godine i njene posledice*, Zbornik radova sa međunarodnog simpozijuma u Himelstiru održanog 1989. godine, Beograd, 1991; *Boj na Kosovu – starija i novija saznanja*, Beograd, 1992.

23 M. Blagojević, *Grad i župa – mede gradskog društva*, Socijalna struktura srpskih gradskih naselja (12-18. vek), Smederevo-Beograd, 1992.

24 Manastir Banjska i doba kralja Milutina, ur. D. Bojović, Niš, 2007.

25 *Vlast i moć, Vlastela moravske Srbije*, Thematic collection of papers from the international scientific meeting held from September 20 to 22 in Kruševac, Veliki Šiljegovac and Varvarin, Kruševac, 2014. We herewith wish to point out the following paper about Prince Lazar: S. Mišić, *Od zemaljskog kneza do kneza Srba – uzdizanje do vladarske moći*, 7-20, together with earlier references regarding this matter.

26 *Kneginja Milica-monahinja Jevgenija i njeno doba*, Thematic collection of papers from the scientific conference held on September 12, 2014. in the Ljubostinja monastery, Trstenik, 2014. We wish to draw special attention to the following papers: S. Mišić, *Kneginja Milica i Lazarevo nasleđe*, 7-15; D. Ječmenica, *Izvori manifestacije moći i uticaja kneginje Milice*, 17-27.

of the period related to the rule of Prince Lazar and his successors, in the tumultuous times of the struggle for the inheritance of the Serbian throne and the preservation of the ruling ideology. In addition to these two collections, in 2017 in Kraljevo, a collection of papers from the international scientific meeting entitled *Srpska kraljevstva u srednjem veku*²⁷ was published. With its subject matter, this collection is both directly and indirectly related to the area of Kosovo and Metohija, as the central area of the Serbian medieval kingdom.

The area of Kosovo and Metohija is to a large extent present in Serbian medieval studies, thanks to its importance for the medieval Serbian state. This importance has as a result an exceptional source material that allows us today to treat various issues of interest to historical science, and even to open some new fields of research. Herewith we wish to reiterate that, unfortunately, field research in that area is difficult. The presence of scientific institutions, primarily the University of Philosophy from Priština, currently in Kosovska Mitrovica and the Institute for Serbian Culture Priština, currently in Leposavic, enables scientific research in the fields of humanities and social sciences to be carried out in this area despite the difficult working conditions.²⁸ Unfortunately, this area still does not have a single monographic edition in the field of medieval history, although all the conditions for its creation exist; and that would probably be the most important task in the near future for Serbian medievalists. It must be pointed out, as far as fundamental research in the field of historiography is concerned, that the current system of evaluating scientific results by means of points makes fundamental research impossible, which makes it difficult to make new advances in this science.

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27 *Srpska kraljevstva u srednjem veku*, Proceedings of the international scientific meeting held from 15-17. September 2017 in Kraljevo, in honor of commemorating eight hundred years since the coronation of Stefan Nemanjić (Prvovenčani), Kraljevo, 2017. We wish to draw special attention to the following paper: B. Zarković, *Svetostefanska hrisovulja kao izvor za proučavanje urbanizacije srednjevekovne Srbije*, 417-434-

28 It must be emphasized that the mentioned scientific institutions organize a whole series of different scientific gatherings and researches and issue various scientific publications related to the areas of Kosovo. Their collaborators have published numerous papers from various scientific fields related to the area of Kosovo and Metohija, but unfortunately, listing them is beyond the scope of this paper.

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Гордан Б. БОЈКОВИЋ

СРПСКА МЕДИЕВИСТИКА О КОСОВУ И МЕТОХИЈИ, ПРЕТХОДНИХ ТРИДЕСЕТ ГОДИНА

Резиме

Простор Косова и Метохије представља политички, верски, економски и културни центар средњовековне српске државе од почетка XIV века, па све до битке на Марици, 1371. године. Циљ овог рада је да покаже колико су теме везане искључиво за овај простор, присутне у научним радовима у последњих тридесет година, што је индикатор пажње која му је посвећена у српској медиевистици, уопште.

У изради рада коришћене су готово све основне аналитичке и синтетичке методе сазнања са тежиштем на анализи, синтези, класификацији систематизацији, генерализацији и индуктивно-дедуктивној методи. Од општенаучних метода коришћен је историјски и хипотетичко дедуктивна метода, а од метода за прикупљање података искључиво Метода анализе садржаја докумената са обадве технике, квалитативном и квантитативном техником анализе докумената наведених у списку коришћене литературе.

Два су главна резултата до којих смо дошли у изради овог рада. Резултати истраживања су потврдили да је подручје Косова и Метохије у великој мери присутно у српској медиевистици, пре свега, захваљујући значају овог подручја за средњовековну српску државу. У овом периоду створен је изузетан изворни материјал који омогућава да се кроз фундаментална истраживања сагледавају различита питања од интереса за историјску науку, па чак и да отварају нова поља истраживања. Такође, резултати истраживања су потврдили да ово подручје још увек нема ниједно монографско издање из области средњовековне историје, иако постоје сви услови за његово стварање, што намеће круцијални задатак пред српске медиевисте и историчаре да на основу проведених нових фундаментална истраживања понуде српској историографији нова монографска научна дела у блиској будућности.

Кључне речи: Косово и Метохија, средњи век, Србија, Српска православна црква.

*Vlado N. RADIĆ**

*Nikola V. RADIĆ***

Faculty of Business Economics and Entrepreneurship

IMPACT OF THE CRISIS ON ENERGY SECURITY AND AVAILABILITY OF STRATEGIC MATERIALS

Abstract: Restrictions related to the Covid-19 pandemic led to a sharp drop in energy demand and reduced CO₂ emissions in 2020. In contrast, 2021 is characterized by a strong and extremely fast recovery of the global economy and an increase in demand for products and services. Because economic growth is strongly correlated with energy consumption, global demand for electricity, oil and natural gas quickly surpassed pre-pandemic levels, driving prices to their highest levels in a decade in Europe, the United States, and major Asian markets. The imbalance between supply and demand in the energy market from 2021 has carried over into 2022, with energy prices holding record-high levels even before Russia's special military operation in Ukraine. Rising energy prices have fueled inflation, strong consumer demand, rising wages, higher housing and food costs, and low-interest rates. Along with disrupted supply chains, higher transport costs, and longer delivery times, there have been restrictions on industrial production in vital sectors. One of the reasons is the lack of strategic materials. The availability of these materials is essential to progress in advanced and clean energy technologies, so any supply disruption has repercussions for the economy, national security, implementation of green energy programs, and other initiatives.

Key words: crisis, energy security, strategic materials, supply chains.

1. INTRODUCTION

The issue of the energy transition is not directly related to the Covid-19 pandemic, nor Russia's special military operation in Ukraine, or the gap between the rich and the poor. The question was raised several decades ago when it was realized that fossil fuel supplies are drying up and that they are finite. Since then, the attention of world forums, country leaders, scientists, and businessmen,

* Academician, Full professor, vlado.radic55@hotmail.com

** Assistant Professor, bra.radici@hotmail.com

as well as „ordinary” citizens around the world has been focused on renewable sources, which include solar energy, wind energy, hydropower, biomass energy, and biofuel. Since the transition from fossil energy to energy from renewable sources has reached the required level - neither technologically nor economically - the operation in Ukraine only accentuated the problems on the political, economic, and military levels.

By the nature of things, due to geographical and spatial reasons, Russia is the largest supplier of oil and natural gas to European countries. The situation is similar to strategic materials. Russia is an important supplier of minerals and metals, especially nickel, palladium, platinum, and titanium, as well as aluminum, copper, and uranium. Manufacturers from the European Union (EU), United States of America (USA), Japan, South Korea, and China are highly dependent on imports from Russia, so supply chain disruptions will almost certainly affect production in numerous industrial sectors.

For years, there has been a debate in the world about how to meet the ever-increasing demands of manufacturers in the automotive, computer, aviation, and power industries. Substitution methods and real analyzes of the availability of various minerals and metals are being researched more and more to secure them for a longer period. It is already known that the accelerated trend of switching to electric cars is fraught with serious obstacles because a large amount of lithium is needed for the production of batteries to start these cars. Bearing in mind that the production of lithium is accompanied by many environmental problems (dangerous and carcinogenic fumes, tailings, long-term pollution of soil and watercourses), its extraction and further processing will not fulfill one of the three elements of the energy transition – environmental sustainability.

Looking at the contemporary political, economic, and especially military context in the world, especially since the beginning of the conflict in Ukraine, it is obvious that the West is losing its dominance over the rest of the world. Imposing their solutions, initiating sanctions, an unprecedented range of arms assistance to Ukraine, and falling behind in certain sectors compared to China, and even Russia put them in a disadvantageous position and the inability to react rationally. Therefore, even before the Covid-19 pandemic, the US declared an „economic war” against China, to eliminate dependence on Chinese production of raw materials, semi-finished products, or finished products. In addition, Russia and China have proven at various times that they are welcome in the Western order only if they are ready to serve it and play by the rules of the USA and its corporations. The moment they want to realize their interests or rise to a level that represents a potential challenge to US dominance, they must be thwarted. And it is written in all the strategic documents of the United States of America.

After the collapse of the Soviet Union and the Warsaw Pact, Russia was written off as a great power and ceased to be seriously studied. Experts have been replaced by protagonists, based on their constructed theories, which are

then systematically spread throughout the world, and unfounded conclusions and political strategies are shaped. The few remaining connoisseurs of the real situation are sidelined, or their voices are simply drowned out by that propaganda noise. Hence so many incoherent moves, such as the introduction of sanctions against Russia, with which the EU caused greater damage to itself, in the form of a high jump in the prices of almost all goods, the collapse of entire industrial branches, threats to food safety and shortages of energy and raw materials.

2. ENERGY SECURITY

At the moment, the most serious problem is energy security, which implies a regular and uninterrupted supply of oil and natural gas at acceptable prices, enabling uninterrupted production in companies around the world, as well as meeting the needs of the population during the heating season. According to official statements, the EU has already spent over 500 billion euros to alleviate the energy crisis (Sgaravati et al., 2022).

Until the start of the conflict in Ukraine, Russia was the largest supplier of oil and natural gas to European countries. This has been the case for decades, so the construction of gas pipelines for transport, hubs, and warehouses was economically and politically justified (North Stream 1 and 2, transport corridors across Ukraine, Belarus, and the Baltic Sea). While Nord Stream 1 was economically (and to some extent politically) justified and accepted by Western countries, the agreement between Germany and Russia on the construction of Nord Stream 2 in 2015 was opposed by the Baltic countries, and temporarily damaged political relations between Germany and USA. Opponents pointed out that Nord Stream 2 represents a political motive to cut Ukraine off from transport and weaken it financially and security-wise.

With the start of the conflict in Ukraine, everything that was said about the Nord Stream 2 gas pipeline has now been multiplied, with the introduction of dozens of unprecedented „packages“ of sanctions against Russia, its officials, banks, companies, and individuals. The governments of the USA, Greater Britain, EU member states, Japan, Canada, and others, almost synchronously and in a short period, agreed on their positions regarding the interruption of the supply of oil and natural gas from Russia. The USA and Great Britain have made the end of 2022 official as the deadline for cutting off supplies from Russia. Other countries, despite the agreement regarding the introduction of sanctions, have begun to analyze their position, so dissonant tones and a change of opinion about the “majority” can already be observed in the EU. Hungary stands out here, which expresses the view that the sanctions against Russia are more directed against them than will weaken Russian “financing” of the war in Ukraine.

The Russia-Ukraine conflict has serious implications for global energy and food markets, which in turn have the potential for cascading effects

on economies and societies around the world. Russia and Ukraine are significant players in the global energy, food, and fertilizer markets. Russia is the world's third-largest producer and exporter of oil, the second-largest producer and exporter of natural gas, and the third-largest exporter of coal (BP, 2021). Russia is also the world's largest exporter of wheat and the second-largest exporter of sunflower oil. Ukraine is equally important to global food markets, as the largest exporter of sunflower oil, the fourth largest exporter of corn, and the fifth largest exporter of wheat. Russia is also the largest exporter of fertilizers as a whole, the second largest exporter of nitrogen fertilizers, and the third largest exporter of potassium fertilizers (CH, 2020).

In 2020, Russia participated in global energy production with about 10% (BP, 2021) and is the main exporter of all fossil fuels, accounting (by volume) for about 15% of world trade in coal, 10% in oil, and 8% in gas.

The European Union imports 90% of natural gas, and Russia provides 41.1% of that import. As for oil and coal, Russia participates in exports with 26.9% and 46.7%, respectively. The UK is relatively independent of Russian energy, with 4% natural gas and 8% oil imports (Bolton, 2022). Russia is China's second-largest supplier (by volume) of oil and fourth-largest supplier of natural gas, and China is Russia's second-largest coal market (BP, 2021). However, Russian natural gas exports to China are expected to rise dramatically from around 10 billion cubic meters in 2020 to around 100 billion cubic meters by 2030, with the construction of new pipelines already underway or approved (DW, 2022). By comparison, the combined capacity of Nord Stream 1 and 2, which connects Russia to Germany, is 110 billion cubic meters (CEW, 2022).

The importance of Russia and Ukraine as producers of energy and food is such that the conflict has significantly shaken global markets. The interruption of energy supplies from Russia caused an unprecedented increase in the price of fossil fuels: as of April 6, 2022, oil was \$108 per barrel, and the price of natural gas in Europe in March in a very short time reached 345 euros per megawatt-hour, and the Australian coal futures price rose in the first half of March to \$435 per ton – the highest price ever, and three times higher than at the beginning of the year (Proctor, 2022). Although Russia is an important global producer, it does not determine the price independently, so the decisions made by the Organization of the Petroleum Exporting Countries (OPEC) will significantly determine further price trends (Duguid et al., 2022). If Russian production were to be limited, the OPEC countries would have to increase production and prevent market tightness and further price increases.

In the EU, there is a relative inflexibility of gas movement (most of it is pumped along fixed pipes), so the importance of Russian supply led to a big jump in prices. The likelihood of long-term natural gas supply disruptions and a potential switch to coal in Europe sent a strong signal to coal futures markets, with the price of coal rising to nearly €100/tonne in the first three months of 2022, from €60/tonne in November in 2021 (Di Bella et al, 2022).

As the conflict in Ukraine is unlikely to end in the short term, its impact on global resource markets will continue to intensify, and with it the likelihood of serious “ripple effects” on economies and societies around the world. „Ripple effects” are often referred to as „risk cascades” and can have negative impacts across many geographies and industry sectors. Before the current crisis, the most dramatic „peak” of food prices was recorded in 2010-2011. year, caused by an extreme heat wave that affected agricultural production in Ukraine and western Russia (Challinor et al., 2018).

The Center for Research on Energy and Clean Air (CREA) from Helsinki concludes that Russia has earned more than enough in the energy war against Europe to cover the costs of the armed conflict in Ukraine. According to their statements, since the beginning of the conflict in Ukraine, Russia has earned 162 billion euros from the sale of oil, gas, and coal. The EU imported 54% of that, worth around 87 billion euros. According to the same estimate, the Russian government spent close to 100 billion euros on war operations. Nevertheless, Russia profited because, despite the reduced amount of oil and other energy products flowing to the West (supply to Europe was reduced by 75%), the price of energy products skyrocketed. In addition, Russia has found new markets such as China (acquired oil and gas worth 35 billion euros), on which it intends to place surpluses. The head of the oil giant Gazprom, A. Miller, announced that Russia will start increasing the amount of gas it can send to China through the “Power of Siberia” gas pipeline (CREA, 2022).

Also, Turkey imported oil and gas worth 10.7 billion euros, India 6.6 billion euros, Japan 2.5 billion euros, Egypt 2.3 billion euros, and South Korea 2 billion euros. Within the EU, the largest importers were Germany with 19 billion euros, the Netherlands with 11.1 billion euros, Italy with 8.6 billion euros, Poland with 7.4 billion euros, France with 5.5 billion euros, Bulgaria 5.2 billion euros, Belgium with 4, 5 billion euros and Spain 3.3 billion euros (Tan, 2022). Together, the EU, NATO, and the G7 countries (in fact, the EU, Turkey, and Japan) imported 56% of Russian fossil fuels in the period July-August 2022. Rising fossil fuel prices mean that Russia’s current income is well above previous years’ levels, despite reduced export volumes. The average prices of Russian fossil fuels are more than twice as high as in 2021, so the revenues generated from sales directly contribute to Russia’s military budget. It is estimated that since the start of the conflict, at least 43 billion euros have gone directly into Russian state coffers from mineral extraction taxes and export duties. India, China, the United Arab Emirates, Egypt, and Turkey saw the largest increase in imports, while China is increasing its coal imports (CREA, 2022).

After the ban on EU coal imports came into effect on August 10, the volume of Russian coal exports fell to their lowest level since the start of the conflict, as Russia failed to find other buyers to replace EU demand. In the weeks following the EU coal import ban, there was no significant increase in shipments to any other country. Two months before the import ban, the EU was still importing 20% of Russian coal, with the Netherlands, Poland, Germany, Spain, and Italy

being the biggest importers. A drop in coal exports has led to the closure of mines in Russia's main coal-producing region, Kemerovo. Since August 29, the import and circulation of Russian coal to Switzerland have been banned, which has had a great impact on the industry, because Switzerland imported about three-quarters of coal of Russian origin. It has already been reported that some Swiss-based trading companies are opening subsidiaries and moving operations to other countries, such as the United Arab Emirates (CREA, 2022).

Europe has a way to limit Russian export prices because, in July of this year, 62% of all shipping capacity loaded with Russian fossil fuels was owned by EU companies. The vast majority of ships carrying Russian fossil fuels are insured in Great Britain (51%) and Norway (22%). The increase in deliveries of Russian oil to India, the Middle East, and Egypt is made possible by European-owned and insured ships that transport most of that oil. The US and Australia receive shipments of petroleum products from refineries in India, which are among the largest buyers of Russian oil. The EU is likely to face the same problem when the ban on oil imports from Russia comes into effect in December 2022. Blended oil is exported to Great Britain from Russia and Kazakhstan and unless the rules on blended oil are strengthened, this import could continue in 2023, even after the import ban comes into force (Iordache, 2022).

The immediate political goal of the Russian government – that Ukraine stops turning towards the West and that NATO troops do not accumulate on its borders – is currently being achieved by military means. There is still no mention of peace agreements or a political solution to the problem. It could be said that the military aid that comes to Ukraine from NATO member countries, especially the USA, Germany, and Great Britain, but also Poland, the Czech Republic, Slovakia, and others contribute to this. Since military aid is measured in tens of billions of euros/dollars, and the estimated damage to the infrastructure in Ukraine is already over 100 billion euros/dollars, a well-founded conclusion can be drawn – regardless of the problems caused by the conflict in Ukraine, the disruption of energy security, the increase the price of energy and consequently inflation and the cost of living, Western countries do not seek to solve the problem but intensify sanctions and military aid to Ukraine. It is increasingly likely that the conflict will not end quickly and that the consequences, not only for Ukraine and Russia but also for the rest of the world, will be very difficult and long-lasting.

3. STRATEGIC (CRITICAL) MATERIALS

The term „strategic materials” does not refer to any specific industry. „Strategic materials,” instead, transcend many industries, from mining to those that convert raw minerals into usable materials, to those that use the materials in the production of intermediate and end products for civilian and military use. In this regard, strategic materials need to be categorized along two lines: traditional

materials that have been used for many years, and advanced materials, many of which have recently been created or are still being developed.

Strategic or critical materials are materials (minerals, metals) whose lack or impossibility of procurement has consequences for „carrying” branches, such as the automotive, aviation, computer, and military industries, and electric power. At the time of the Covid-19 pandemic, the duration and end of which no one indicates anymore, it turned out that the world is dependent on delivery from one country, this time from China. It is a known fact that Wuhan, the city from which the pandemic spread, is the center of the largest number of companies engaged in the production of parts and assemblies for the most renowned car manufacturers in Europe, the USA, Japan, and South Korea. Also, it is known that the restrictive policy of suppressing the pandemic implemented by China implies zero tolerance, so the largest logistics and production centers such as Shanghai are „locked”. This prevents the efficient transport of goods from China, which affects the extension of delivery times, delays, and the formation of waiting lists. It is similar to the chronic shortage of semiconductors, which escalated with the outbreak of the pandemic, due to which the delivery of cars was extended indefinitely (Radić & Radić, 2021).

The proclaimed faster transition to renewable resources and reduction in the use of fossil fuels points to the trend of electrification in the automotive industry. As automakers race to position themselves in the transition from internal combustion engines to electric vehicles, and expect hundreds of billions from that transition, problems with the supply of the necessary materials are challenging such optimistic expectations.

For the expectations to be realized, they will need a lot of batteries, which means that it is necessary to dig, process, and adapt to the final purpose a lot of minerals, e.g. lithium, cobalt, or nickel. These minerals are not particularly rare, but their production needs to increase at an unprecedented rate to meet the ambitions of the automotive industry. On the other hand, there is another big challenge: the existing supply chain is dominated by one country – China. It controls about three-quarters of the market for minerals necessary for the production of batteries, although it does not have the richest deposits – they are in DR Congo, Australia, and Chile. However, China is determined to dominate the processing of these minerals, it has the economic strength, capital, huge market, and the will to make it happen, so such a performance causes concern in the West.

At the 2021 Climate Change Conference in Glasgow (COP26), signatories were expected to take increased commitments to mitigate climate change. The result of the conference was the climate pact, which was negotiated by consensus by the representatives of 197 present parties (countries). Due to subsequent interventions by India and China, the conference ended with the adoption of a less stringent resolution than expected. However, the pact was the first climate agreement to explicitly commit to reducing coal use. It also includes wording that calls for more urgent reductions in greenhouse gas emissions and promises

more funding for developing countries to adapt to climate impacts (Hook et. al, 2021, Shasi, 2021).

Meanwhile, the conflict in Ukraine has created a new kind of anxiety. Russia, although a much smaller player than China in supply chains, provides a significant amount of nickel to global markets, which is why the price of the mineral has risen since the beginning of the conflict. Concerned about future access to minerals needed to make batteries, the Biden administration and other governments around the world are trying to build domestic supply chains to reduce dependence on China. Thus, the US Congress allocated 3 billion dollars to support domestic mining and processing of minerals for batteries. Unlike companies racing to open new mines, many local communities in the US are understandably reluctant to allow new mines or refineries to open (Domonoske, 2022).

The global demand for nickel for the production of lithium-ion batteries was more than 150,000 tons in 2019 (Al Barazi et al., 2021), which is less than 5% of the volume of the world's primary nickel market. By 2025, demand in the electric vehicle sector could increase to approximately 500,000 tonnes per year, equivalent to 15% of the total global market. To increase the energy density of lithium-ion batteries, a much higher proportion of nickel is used in the cells. This means that demand will increase disproportionately to the increase in battery production. Nickel sulfate, essential for lithium-ion batteries, is a targeted class 1 nickel product (over 99% purity). To meet the growing demand in the future, it is necessary to develop new production methods for nickel sulfate. The market is highly dependent on primary nickel supplies from Southeast Asia, particularly Indonesia, which is the largest nickel mining country. In 2020, Indonesia imposed a ban on nickel ore exports to ensure that large parts of the value chain remain in the country. After China, it is the second largest producer of nickel in the world, but only of class 2 nickel (less than 99% purity). Many projects are underway in Indonesia to produce better-quality nickel products for battery production.

Automakers aren't just worried about geopolitical risks, they're deeply concerned about the number of minerals they need. Demand for some products could increase tenfold within a few years. Companies that are manufacturers, e.g. of lithium, become aware that they cannot just „enter” the business and ensure supply because it is not defined either by capacity or by quantity. Therefore, General Motors, Volkswagen, and BMW are taking the unusual step of buying minerals directly from mines, and in some cases even investing in them, to secure the necessary resources. This is a big change, as car manufacturers usually rely on a network of suppliers to deliver parts and assemblies on a just-in-time basis. Tesla, the revolutionary manufacturer of electric cars, has been working directly with mines for years and providing the necessary minerals for itself. What seemed to be a short-term solution turned into a reality – China had a vision about it ten years ago and it took almost a decade to realize that vision. So there is no solution ahead!

Efforts to secure minerals for batteries could have ramifications beyond the automotive industry. For one thing, pressure could be put on the mining industry to improve its operations. The mining industry's harsh history includes the use of child labor in cobalt mines in the Congo and causing pollution and deadly accidents in mines and refineries around the world. When selling its products in a long and convoluted supply chain, an individual mine is essentially immune to boycotts or public pressure. Automakers, on the other hand, care a lot about what the public thinks of them, especially what they think of their eco-branded electric vehicles.

The specificity of the present moment is the increase in the prices of key minerals needed for the transition to „clean” energy. Thus, the prices of lithium and cobalt have more than doubled in 2021, and the prices of copper, nickel, and aluminum have increased by 25% to 40%. The price trends have continued in 2022, so the price of lithium has increased by an incredible two and a half times since the beginning of the year. Prices of nickel and aluminum – for which Russia is a key supplier – also continued to rise. For most minerals and metals, price increases in 2021 significantly exceed the largest annual increases recorded in the 2010s (IEA, 2022).

Innovation and economies of scale have rapidly driven down the costs of key clean energy technologies, but rising feedstock prices could reverse this. Raw materials now have a significant and growing share of the total cost of clean energy technologies. For example, cathode materials – which are essential for lithium-ion batteries and include lithium, nickel, cobalt, and manganese – accounted for less than 5% of the battery's cost in the middle of the last decade, and there were only a few battery gigafactories then. That share has grown to over 20% today with around 300 gigafactories in various stages of planning and construction around the world. Higher cathode material prices in 2021 increased lithium-ion battery costs by about 5% from 2020 levels (IEA, 2022).

Electric cars are more and more present on the market, which means that more batteries will have to be produced, which in turn will lead to increasing demand for raw materials. During the ramp-up phase of electric mobility, occasional supply bottlenecks are likely to occur. At a later stage, concepts for recycling used battery cells could ease pressure on supply chains. The global fleet of electric cars grew to 10.9 million vehicles in 2020 (Diess et al., 2021), three million more than in 2019. With more than five million electric cars on the road, China remains the undisputed leader, followed by the US with 1.77 million. Germany is in third place with almost 570,000 electric vehicles (Diess et al., 2022). In 2020, the number of registered electric cars reached a record 3.18 million units. From 2030 onwards, they could account for between 25 and 75% of new registrations, leading to demand for batteries with capacities of 1 to 6 TWh per year (Thielmann et al., 2020). Forecasts say that lithium-ion batteries will be the standard solution for electric cars in the next ten years, so the main materials needed for the production of batteries will be graphite, cobalt,

lithium, manganese, and nickel. According to estimates from the Fraunhofer Institute for System Research and Innovation (ISI) in Munich, the proportion of lithium in each battery cell of around 72 g/kg will not be noticeably reduced. However, the proportion of cobalt could be significantly reduced from 200 g/kg to about 60 g/kg per cell (Neef & Jung, 2021). Thus, the demand for primary raw materials for the production of car batteries by 2030 should be between 250,000 and 450,000 tons of lithium, between 250,000 and 420,000 tons of cobalt, and between 1.3 and 2.4 million tons of nickel.

When evaluating raw material deposits, two different figures need to be taken into account: on the one hand, the resources that are generally available on Earth and, on the other hand, the deposits that are profitable using today's technologies. In most cases, total deposits significantly exceed anticipated demand, even if the number of raw materials required would simultaneously increase as a result of higher demand in other areas. However, several studies indicate that temporary shortages or price increases of certain raw materials are possible, e.g. if new production sites have to be opened, if demand is too high or if there are problems with imports from producing countries. The situation differs significantly among different metals, as a detailed analysis and assessment by the German mineral resources agency DERA shows (OECD, 2022).

Graphite is used as the anode material in lithium-ion batteries and has the largest volume fraction of all battery raw materials, thus affecting a significant part of cell production costs (Schäfer, 2021). China has played a dominant role in almost the entire supply chain for several years and produces about 50% of the world's synthetic graphite and 70% of flake graphite, which requires pretreatment before being used in batteries. Numerous types of research are being carried out, especially in Africa, so new locations for exploitation in Mozambique, Tanzania, and Madagascar could relieve pressure on the highly concentrated world market. However, the risks associated with flake graphite processing pose a security of supply problem, as it is almost entirely carried out in China, along with anode production. Also, research is underway on new anode materials that could influence the future demand for graphite.

Like nickel and manganese, cobalt is essential for battery cathodes. It currently represents the greatest procurement risk of all battery raw materials, especially due to expected dynamic demand growth and potential supply bottlenecks. The demand for cobalt for electric vehicles could increase to as much as 315,000 tons by 2030, which is 20 times the current amount (Backhaus, 2021). The ongoing development of low or even cobalt-free cathodes could lead to a significant reduction in overall demand. The role of DR Congo, which is by far the largest producer, represents a major risk for strategic planning. Cobalt mining there has dominated the global market for more than a decade, with a current market share of 69%, and the country could significantly increase its production if demand continues to grow (Backhaus, 2021).

In the lithium market, a significant increase in demand is expected compared to current production levels. According to DERA forecasts, by 2026

the supply of lithium needs to triple to cover future demand. Lithium extraction is currently limited to Australia, Chile, and Argentina and a few companies, with just four companies controlling nearly 60% of global production (Al Barazi et al., 2021). However, the lithium “boom” of recent years has shown that the market is facing major changes. In addition to the expansion of existing facilities, large projects are planned and implemented in other countries, such as Canada, Mexico, and Bolivia. Europe also has significant potential. Bottlenecks in the supply of lithium are currently unlikely, but experts indicate that the concentration in just a few producing countries will remain unchanged. In addition, Asian battery producers secured large quotas by entering into long-term supply contracts and acquiring stakes in companies, which significantly reduced the amount of lithium freely available on the world market.

From batteries to solar panels and wind turbines, the rapidly decreasing cost trends seen over the past decade have largely reversed in 2021, with wind turbine and solar PV module prices up 9% and 16%, respectively. In China, the increase in lithium prices is already reflected in higher prices of electric vehicles – Tesla, BYD, and Xpeng announce price increases of 2% to 9%.

Battery applications make up only a small part of the manganese market. The main buyer of manganese is the steel industry, which uses about 90% of the global supply. Currently, only about 0.2% of the manganese extracted worldwide is used in lithium-ion batteries. In the future, this figure will only increase to about 1%.

To reduce the world’s dependence on the aforementioned raw material-producing countries, the establishment of a comprehensive structure for recycling will become increasingly important in the future. Processes for obtaining raw materials from small lithium-ion batteries, such as those in mobile phones, are already partially implemented. However, vehicle batteries are much larger, heavier, and more powerful, which makes the industrialization of the recycling process more complex. The German Federal Ministry for Economic Affairs and Energy (BMWi) together with the Swedish innovation agency Vinnova is funding the research project „Libero” at the RWTH Aachen University within the framework of the Central Innovation Program for Small and Medium Enterprises. A German-Swedish consortium is working to develop a robust and flexible process for battery recycling that is mostly waste-free. The goal of the project started in 2019 is to plan a facility with an annual recycling capacity of 25,000 tons of batteries (Fridrich, 2021). The Finnish company Fortum has already developed a process for recycling lithium-ion batteries from electric vehicles (Reichenbach, 2021).

In early 2021, Volkswagen began operating a pilot plant for the recycling of high-voltage vehicle batteries in Salzgitter. The plant will recycle 100% of lithium, nickel, manganese, and cobalt, plus 90% of aluminum, copper, and plastic (Diess et al., 2021). The plant is designed to recycle up to 3,600 battery systems per year, which is equivalent to around 1,500 tons of batteries. However, when a larger quantity of used batteries is available, the processing system can

be scaled up. Other car manufacturers, such as Mercedes-Benz, are thinking the same way and have planned to build a high-voltage battery recycling plant in the city of Gaggenau.

Reusing old car batteries in stationary applications could extend their service life before the need to recycle them. There is currently no practical experience as to how many batteries would qualify for other uses in terms of remaining storage capacity and service life. In general, the concept of „second” life is only suitable for applications where old batteries with low energy density can be used. In addition, issues such as standardization and guarantees need to be addressed (Shahjalal et al., 2021). According to Fraunhofer ISI, higher failure and replacement rates can be expected than with new batteries, which means that a high level of reliability cannot be guaranteed. Due to the necessary levels of redundancy, the number of cells required and the cost of the batteries would be higher. The Fraunhofer Institute ISI assumes that only a part of old, used batteries can be used a second time (Thielmann et al., 2021).

Although Russia is a major producer of many minerals and metals, the country’s increasing international isolation is putting additional pressure on already tight markets. The first impacts were felt on aluminum markets, where in 2020 Russia accounted for 6% of world production (second largest producer in the world) and 8% of EU imports. Since aluminum production is highly energy-intensive, the high prices of natural gas and electricity have already affected almost half of the EU’s production capacity at the beginning of 2022. With supplies also reduced in China, aluminum prices rose to record highs following the start of Russia’s operation in Ukraine, causing stress in many industries.

Russia produces about 10% of nickel globally, but almost 20% of the supply of Class 1 nickel is needed for battery production. It is also the second-largest producer of cobalt and the fourth-largest producer of graphite. The increase in the price of nickel in March of this year caused a major disruption - in one day it rose from \$25,000 to over \$100,000 per ton, so the London Metal Exchange suspended nickel trading for a week. This event was not driven by market benchmarks, but by short-term pressure on a large Chinese company. However, it was a wake-up call on the importance of diversifying supply sources.

Russia also provides 43% of the global supply of palladium, a precious material used in catalytic converters in cars. More than half of Russian palladium exports go to Europe. As with aluminum, inventory levels were low even before the Russian operation in Ukraine. Car manufacturers may choose to use platinum, but Russia is also a major producer of platinum, with a 14% market share and the second largest in the world.

Uranium for nuclear fuel is another element of concern. Russia accounts for 6% of the world’s uranium production but has about 40% of the global capacity for its enrichment. Uranium prices, which were already high at the end of 2021 due to reduced supplies, rose by about one-third in March 2022, to the highest level since the 2011 Fukushima nuclear accident in Japan. Although uranium

conversion and enrichment facilities exist in Canada, China, France, the US, and elsewhere, many have been operating at low utilization rates or are idle. In light of renewed interest in nuclear power's role in the clean energy transition, Russia's operation in Ukraine underscored the need to diversify its enriched uranium stockpile, including investing in new facilities and reopening existing facilities.

The growing demand for minerals and metals needed for the energy transition is making supply difficult. Mining and processing are the two key bottlenecks. New capacities are not the only problem: the primary risk is the geographical concentration of locations where exploitation, and especially processing, is carried out. China's dominance in processing means that economic or geopolitical shocks can disrupt supply.

The situation is different in terms of renewable energy technologies, which include solar and wind energy, hydropower, biomass energy, and biofuels. These technologies are potential energy sources that are in line with the global community's efforts to reduce greenhouse gas emissions. In the last two or three decades, there have been significant scientific advances in the application of these energy sources, which has resulted in a lower price of the necessary minerals-metals. The trend of introducing solar photovoltaic panels or wind generators is noticeable in many countries of the world. However, similar to car electrification, several countries have primacy in the research, development, and production of parts, assemblies, and finished products. These are China, Japan, the USA, Germany, Canada, and Great Britain.

The first generation of solar photovoltaic modules was made of silicon with a crystalline structure. Research into silicon material is constantly increasing and is mainly aimed at improving its efficiency and sustainability. Monocrystalline and multi-crystalline silicon are the two most basic types of silicon used in solar PV modules. Monocrystalline silicon has a higher efficiency compared to multi-crystalline. On the other hand, multi-crystalline silicon is cheaper, so manufacturers use it for low-cost solar systems. Amorphous silicon is a non-crystalline allotropic form of silicon that is also widely used in solar photovoltaic equipment in thin film technology. Amorphous silicon carbide, amorphous silicon germanium, microcrystalline silicon, and amorphous silicon nitride are different types of amorphous silicon in use (Gul et al., 2016, Li et al., 2021, Li et al., 2021).

Cadmium and tellurium are also used for the development and production of solar photovoltaic systems. They are mixed in a specific ratio to develop cadmium telluride solar cells and are considered the most efficient thin film material. Compound semiconductor solar photovoltaic devices are made of gallium and arsenide. They are similar to silicon cells but are more efficient, less thick, and dense than monocrystalline and multi-crystalline silicon cells.

Aluminum, antimony, and lead are used in solar photovoltaic equipment to improve the energy range. Other materials used to develop advanced solar photovoltaic cells are copper, indium, gallium, and selenium, and are mainly used to improve the efficiency of solar photovoltaic devices and to dissipate heat.

4. PROVIDING ENERGY AND STRATEGIC MATERIALS IN TIMES OF CRISIS

A crisis means a severe, all-encompassing disturbance in social life (political and economic) from which the exit is very difficult and usually long-lasting. A social crisis means a state of disturbed relations in a society burdened with various unresolved problems.

Crises appear at the individual or societal level. At the individual level, they represent increased tension, psychological burden, exposure to stress, and difficult orientation in time and space in the decision-making process, that is, they represent a change in the usual functioning of a person. At the social level, they show a threatening social situation in the political, economic, social, and cultural systems. They represent an obstacle, an important change that interferes with normal work and causes another phenomenon as a consequence.

A crisis means a very difficult situation after which either resolution or disaster is expected. It is also important to connect the concepts of crisis in different scientific disciplines. In general, the term crisis in the broadest sense of the word includes a situation threatened by something very dangerous in a bad sense. It refers to a decisive turning point in the development or implementation of a policy or other social activity, to the most important moment of a system or process. But the crisis is not only negative for an individual or society, it contains the ability to discover new opportunities that not only help in overcoming difficulties and obstacles but also open up new opportunities for development and a higher level of development.

In the last fifteen years, the world has experienced a series of destabilizing events. Among them is the financial crisis of 2007-2008. year, the food price crisis of 2010-2011. in 2010, the wave of demonstrations, protests, and rebellions in Arab countries in 2010 (Tunisia, Algeria, Morocco, Egypt, Libya, Iraq, Jordan, Yemen, ...), the war in Syria in 2011, increased migration, and the growing population of displaced people, the rise of populism around the world (example of the election of Donald Trump as president in 2016), significant trade disruptions, including the trade „war” between the US and China, the exit of Great Britain from the EU (‐Brexite”) in 2020, the COVID-19 pandemic (from 2020 onwards) and the withdrawal of US troops from Afghanistan in 2021. During this period, multilateral processes were weakened, political leadership was often lacking, and global unity was at a low level.

The Russian special operation in Ukraine that began in February 2022 remains a seismic global event, the full implications of which the rest of the world has yet to grasp. This operation marked a return to war between states, something Europe had not experienced since 1945 (unless you count the 1999 NATO aggression against the Federal Republic of Yugoslavia). On the battlefield, where Russia hoped for a quick and easy victory, the conflict has entered the stage of exhaustion - Russia cannot control Ukraine, and Ukraine cannot expel Russian forces from its territory.

In addition to security implications, the conflict initiates the need to restructure international trade. It is not known when a significant number of sanctions imposed on Russia may be lifted and if or when others may be imposed. Russia may move to impose counter-sanctions or export bans, and other countries may do the same if they feel their interests are harmed by sanctions against Russia (China, for example, has threatened such action). Even if the conflict ends today, the imposed sanctions will continue to significantly interrupt the flow of goods from Russia to global markets. As unity within the Euro-Atlantic community strengthens, and as China looks set to draw closer to Russia, the conflict has the potential to cause significant reconfiguration in markets where Russia has until now been a major supplier of energy, food, fertilizer, minerals, and metals.

European countries will not be able to get through the coming winter and 2023 without Russian gas or a significant reduction in economic costs in the region. Europe has managed to fill up its underground gas storages quite a bit (85% as of mid-September) at the expense of increased supplies from alternative suppliers and reduced gas consumption in the industry. However, Europe, as before, failed to solve the problem of its dependence on Russian gas. To ensure gas needs until the end of 2022, European countries should preserve its use for an additional 7–12 billion cubic meters, which is possible only with a complete or partial stoppage of some industries. Today in Europe, 70% of the capacities that produce nitrogen fertilizers have already been stopped, aluminum production has been reduced by 25%, steel smelting has been reduced by 5%, and this process will most likely continue even if the winter is mild.

The gas deficit in the EU during the 2022–2023 season. in European countries will amount to at least 10 billion cubic meters, even in the case of a mild winter. Exporters of liquefied natural gas from the USA cannot increase deliveries fast enough to prevent gas shortages in the EU during the winter, while the delivery of gas from Russia to Europe is logistically difficult, primarily due to technical restrictions on receiving liquefied natural gas, as many terminals are not connected with a network of gas pipelines. If demand for liquefied gas in China is further renewed, a cold or long winter will occur, breakdowns and breakdowns in supply chains will occur, the situation will worsen and the gas deficit may increase to 20–30 billion cubic meters.

Giving up Russian gas in 2023 will mean a deficit for European countries in the amount of 40–60 billion cubic meters of gas, even if the current pace of savings is preserved throughout 2023 in the amount of 60 billion cubic meters. This can be compared with the annual gas consumption of France and Poland combined or with the annual gas consumption of industries such as fertilizer production, petrochemicals, ferrous and non-ferrous metallurgy, and all branches of mechanical engineering. Stopping those branches will also affect other related branches - from rural households to branches that provide services. This means that there is no comfortable way for Europe to give up Russian gas in the coming years, only to the detriment of citizens and the economy.

Being under incredible sanctions and excluded from any cooperation with the USA and the countries of Western Europe, Russia is forced to develop and improve cooperation with other countries and regions. One is, for example, cooperation within the Shanghai Cooperation Organization, and the second is the expansion of economic exchange with Iran, Saudi Arabia, India, and other countries. The fact is that Western countries have always wanted the disintegration of Russia, so, at some point, Ukraine was used to achieve these goals. To prevent this, a special military operation was launched. Western countries are also former colonial powers that still live in the paradigm of colonial philosophy. They are used to living at the expense of others and still cannot get rid of this paradigm in practical daily politics.

As the most developed economy in Europe, Germany is facing very big problems already for the coming winter. During her time as chancellor, Angela Merkel was under pressure from the US for years, which demanded that the construction of the Nord Stream 2 pipeline be stopped (even before it began). Despite this, the pipeline was eventually built and, from today's perspective, it can significant resistance from the then-government can be observed. Now Germany could simply start Nord Stream 2 and all its problems would be solved. But if she did, it would create a geopolitical upheaval of unprecedented proportions. So far, no one has come forward with such a proposal, at least publicly. However, it remains to be seen what German factories will do when they find themselves in a situation where they have to stop work. Businessmen point out something relevant not only for Germany, but also for most of Europe: small and medium-sized enterprises are the backbone of the economy, and for them, the current price increase may represent the greatest danger.

Germany has benefited from Russian gas for decades and it can be said that the most powerful European economy was built on it. Now German industry is forced to buy expensive gas at rising market prices. She will try to shift the difference as much as possible onto the shoulders of the consumer. The German Federal Association of Industry (BDI), which brings together 593 companies, conducted an extensive survey from mid-August to early September this year. It turns out that more than a third of companies say that rising prices threaten their survival in the market. In February of this year, there were 23% of such companies (Alkousaa, 2022). Some companies are already thinking about leaving Germany. According to the aforementioned survey, 25% of companies will withdraw production from Germany or are already doing so. Every tenth company has already reduced or completely stopped production due to rising prices. Some companies are taking loans from banks to finance increased energy costs, but this is becoming increasingly difficult. Banks know that many companies are in trouble, so they hesitate to give loans, fearing that no one will pay them back.

Economic analysts predicted that German industrial demand would decrease by 0.5% in July. But the numbers turned out to be more than twice as bad as expected. Of course, Germany suffers not only from the direct consequences

of the armed conflict in Ukraine and high energy prices, because of the general slowdown of the global economy and the lack of materials playing their role. A detailed analysis of the data shows that Germany is now in a more difficult situation than some other countries. Domestic orders in July fell by 4.5%, while orders from abroad increased by 1.3% (Alkousaa, 2022).

Given this state of affairs, it can be assumed that Berlin will not be enthusiastic about the proposal to introduce a price ceiling for Russian gas. Indeed, at this moment, Putin can fulfill his threats and completely stop all energy supplies to Europe. Then the already difficult situation will become even more difficult. France, for example, supported the idea of limiting the price of Russian gas, and Poland has been demanding it for a long time. If the energy crisis becomes total, among the main countries of the European Union, Germany will fare the worst!

Some time ago in Europe, they thought that everything was very good in the energy sector, but it turned out that everything was very bad. By refusing to buy Russian energy products under the influence of the US, the EU countries have brought themselves to a dead end. The answer to the question of whether Western countries will be able to live without Russian energy sources is that the USA will survive (they mine everything except uranium), and Europe is going into the abyss. The Europeans were deceived. Since they had a green agenda, they said they would cover the needs with renewable energy sources, etc. They introduced the spot gas market instead of long-term contracts. Europe will be able to stop buying Russian gas only in five or six years. But this will mean a further increase in costs, which have already risen significantly, and the uncompetitiveness of the economy on the world market. In 2021, the price of gas was 250–300 dollars per thousand cubic meters, and today it is 3000 dollars, which will affect the price of long-term contracts, i.e. it will be from 800 to 1000 dollars per thousand cubic meters. This is three to four times more expensive, and European citizens and the European economy will pay for it, which will lose the battle on the world market (Liboreiro, 2022).

The unipolar hegemony is inexorably collapsing. This is an objective reality that the West categorically does not want to come to terms with. The West is trying to implement a policy of dictation, clinging to the past and inventing new problems. There are growing risks of destabilizing the situation, including in the Pacific region, as well as that Western countries are creating scenarios for escalating conflicts on the territory of the Commonwealth of Independent States (CIS).

After the collapse of the Soviet Union, the West decided that the world should come to terms with its dictatorship forever. Back then, in 1991, the West counted on the fact that Russia would not recover from such earthquakes and that it would disintegrate by itself in the future. That is exactly what happened. Let's remember the 90s, hungry, cold, and hopeless. However, Russia resisted and was reborn and strengthened, once again taking its rightful place in the world. At the same time, the West has always sought and continues to seek

new opportunities to attack Russia, to weaken it, which they have always dreamed of - to divide it, to poison the nations among themselves, to condemn them to poverty and death. It simply does not give them peace that there is such a large country in the world with its territory and natural wealth and resources, with a people who cannot and will never live according to someone else's directive. The West is ready to do anything to preserve that neo-colonial system that allows it to parasitize, and steal the world with the help of the dollar and technological dictatorship. To take a fair tribute from all humanity, to take away the source of unearned well-being, to take the hegemon's rent. Preserving that rent is their key, true, and selfish motive. That is precisely why a total de-sovereign nation suits their interests.

Hence their aggression towards independent states, traditional values, and independent cultures, attempts to undermine international and integration processes that they do not control, new world currencies, and centers of technological development. It is of critical importance to them that all countries surrender their sovereignty in favor of the USA. The ruling elites of certain countries voluntarily agree to become vassals. They bribe others, intimidate them, and if they don't succeed, then they destroy entire countries, leaving behind humanitarian disasters, misery, ruins, and millions of destroyed human destinies. Terrorist enclaves, zones of social misery, protectorates, detention centers and camps, colonies and semi-colonies - they don't care, as long as they benefit themselves.

The real reason for this hybrid war against Russia lies precisely in greed and the intention to preserve their unlimited power. They don't want freedom for themselves, they want to be a colony. They don't want equal cooperation, they are robbing. They don't want to see Russia as a free society but as a bunch of heartless slaves. For them, the direct threat is their thought and philosophy. That's why they attack their philosophers, their culture is a danger to them, which is why they try to ban it, their development and prosperity are a threat to them because competition grows. They don't need Russia! The West thinks that everything will work out for them, and realistically, everything has worked out for them so far. Agreements in the sphere of strategic security are thrown into the trash, agreements reached the highest level are presented as fabrications, hard promises that NATO will not expand to the east, as soon as the previous leaders in Russia settled on them, turned into a dirty lie. Agreements on anti-missile defense and medium- and short-range missiles have been annulled unilaterally and with fabricated arguments. Now the media has followed the slogan - the West is establishing an order based on rules! Where did those rules come from? Who saw them, who harmonized those rules? It is plain nonsense, the purest deception, double or even triple standards.

The energy „Gordian knot” will not be resolved either by the introduction of new sanctions against Russia, or by large military aid from Western countries to Ukraine. Also, it will not be solved by cutting off the supply of oil and natural gas from Russia, because other alternatives are much more expensive

and unsustainable in the long term. From the analysis of various research institutions in Western countries, the opinion is firmly established that Russia earned about 170 billion euros during the operation, which covered the costs of war actions, which are estimated at 100 billion euros. By reducing supplies to EU countries, Russia has increased, and radically, the supply of oil, natural gas, and coal to China and other countries. In this way, the conclusion is that the complete suspension of the supply of oil and natural gas from Russia is not economically, nor politically sustainable (CREA, 2022).

The situation is similar with critical (strategic) minerals (metals), which Russia has in large quantities and exports. It is unlikely that Russia will decide to deliver any strategic material to Western countries, as this would mean normalizing relations, lifting over 1,200 sanctions, and ramping up production and delivery over a period of years. On the other hand, Russia will supply the required materials to other countries, such as China, India, and even Turkey.

5. CONCLUSION

After the start of Russia's special military operation in Ukraine and at the negotiations with the mediation of Turkey in Istanbul, representatives of Kyiv reacted to Russia's proposal very positively. Those proposals were, above all, concerned with ensuring the security of Russia, and its interests, but it is obvious that a peaceful solution did not suit the West, so after reaching certain compromises, Kyiv was given a direct order to break all agreements. They started giving Ukraine more and more weapons, and Kyiv started new gangs of foreign mercenaries and nationalists. The army is trained according to NATO standards and under the *de facto* command of Western advisers. At the same time, the regime of repression across Ukraine against its citizens, which was established immediately after the armed coup in 2014, was intensified in the worst way. Certain irresponsible politicians in the West are not only talking about plans to organize deliveries of long-range offensive weapons to Ukraine but also systems that make it impossible to attack Crimea and other regions of Russia. Such terrorist attacks, with the use of Western weapons, are already being carried out in the border areas of the Kursk and Belgorod regions. Currently, using the most modern systems, planes, ships, satellites, and strategic drones, NATO conducts reconnaissance operations in the south of Russia. Washington, London, and Brussels are directly pressuring Kyiv to expand military activities on Russian territory. They openly talk about the fact that Russia should be destroyed on the battlefield to deprive it of political, economic, cultural, and any other sovereignty.

President Putin, while signing the documents on the unification of the DNR, LNR, Zaporozhye, and Kherson regions with Russia, said that the US, by pressuring the EU to completely give up Russian energy and other resources, is leading to the deindustrialization of Europe to fully subjugate the European

market. Earlier, the energy ministers of the European Union countries agreed on a series of measures in response to high electricity prices. The measures should apply from December 2022. Among them are additional fees for extra profits from fossil fuels, reducing electricity demand, and limiting the income of companies that produce electricity from cheaper sources, such as renewable and nuclear energy.

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Владо Н. РАДИЋ

Никола В. РАДИЋ

УТИЦАЈ КРИЗА НА ЕНЕРГЕТСКУ БЕЗБЕДНОСТ И ДОСТУПНОСТ СТРАТЕШКИХ МАТЕРИЈАЛА

Резиме

Ограничења повезана са пандемијом Цовид-19 довела су 2020. године до наглог пада тражње за енергијом и смањене емисије CO_2 . Насупрот томе, 2021. годину карактерише снажан и изузетно брзи опоравак глобалне економије и повећање тражње за производима и услугама. Будући да је економски раст у снажној корелацији са потрошњом енергије, глобална тражња за електричном енергијом, нафтом и природним гасом брзо је премашила нивое пре пандемије, што је довело до највиших цена у последњих десет година у Европи, Сједињеним Америчким Државама и главним азијским тржиштима. Неравнотежа између понуде и тражње на тржишту енергије из 2021. пренета је на 2022. годину, са ценама енергије које су задржале рекордно високе нивое чак и пре специјалне војне операције Русије у Украјини. Раст цена енергије подстакао је инфлацију и велику тражњу потрошача, растуће плате, веће трошкове становања и хране и ниске каматне стопе. Упоредо са прекинутим ланцима снабдевања, већим ценама транспорта и дужим временом испоруке, дошло је до ограничења индустријске производње у виталним секторима. Један од разлога је и несташица стратегијских материјала. Доступност ових материјала је од суштинског значаја за напредак у високим и технологијама чисте енергије, па сваки поремећај у снабдевању има реперкусије на привреду, националну безбедност, имплементацију програма зелене енергије и друге иницијативе.

Кључне речи: криза, енергетска безбедност, стратешки материјали, ланци снабдевања.

*Nikola P. JOVIĆ**

*Katarina BOGIĆEVIĆ***

*Andrej NAUMOVIĆ****

Faculty of Political Science, University of Belgrade

CITIZENS' PERCEPTION OF SERBIA'S FOREIGN POLICY THROUGH THE PRISM OF CULTURAL AFFILIATION TO THE EAST/WEST

Abstract: Foreign policy analysis is focused on understanding and analyzing the process of making foreign policy decisions in the international arena and in a certain context. One of the factors of the context that significantly influences the creation of foreign policy strategies is the attitudes of the citizens of the country that creates the foreign policy. The relationship between the views of citizens and decision-makers is extremely complex. Our research intention is to analyze the perception of foreign policy orientations of Serbian citizens, with a special focus on effects of cultural affiliation on political, economic and military integration. Our work is based on the data received from public opinion research conducted in collaboration between the Faculty of Political Sciences - University of Belgrade and Ohio University - United States of America. Based on instruments that measure cultural affiliation of Serbian citizens towards East or West, we will investigate how cultural affiliation affects foreign policy preferences.

Key words: foreign policy, foreign policy analysis, cultural affiliation, EU, Russia, East/West divide.

1. CONTEXT

The direction of the Republic of Serbia towards European integration for more than twenty years represents a foreign policy constant regardless of significant changes in the political arena. During this period, the process of European integration did not develop linearly, but there were different phases

* Assistant professor, nikola.jovic@fpn.bg.ac.rs

** Student, bogicevickatarina1@gmail.com

*** Student, naumovic.a41@gmail.com

and periods when the process slowed down or accelerated, when it was more or less attractive. In some periods, „joining the European Union by Serbia was presented as ‘unavoidable’, and any attempt to evaluate the costs and benefits of the European path was met with suspicion and doubt about the motives of the person or organization making such an attempt“ (Dašić and Nedeljković, 2015: 59). On the other hand, there were periods when both sides showed signs of distance and distrust in the certainty of the European path of the Republic of Serbia. However, despite significant unresolved issues on this path and fatigue from the same, European integration still represents one of the most important foreign policy goals of the Republic of Serbia. In support of this, on the official website of the Ministry of Foreign Affairs of the Republic of Serbia there is a statement on the place and role of European integration in the hierarchy of foreign policy goals of the Republic of Serbia:

„European integration and membership in the European Union are the national interest and strategic commitment of the Republic of Serbia, while the values of the European Union are precisely those values that the Republic of Serbia supports and wants to further nurture. The Republic of Serbia sees the accession process to the European Union as an incentive for reforms and strengthening of European standards. Additionally, the European Union is the most important trading and investment partner of the Republic of Serbia and a very significant factor in the country’s economic stability“ (MFA, 2022).

The majority of citizens supports this foreign policy stance. Namely, according to data from the Sprint Insight public opinion research agency, in the last three years, support for the membership of the Republic of Serbia in the European Union consistently exceeds 50%.

Table 1. Support for the entry of the Republic of Serbia into the EU

	2020	2021	2022
Against membership in EU	48.5%	47.7%	48.1%
For membership in EU	51.5%	52.3%	51.9%

In December 2009, the Republic of Serbia officially submitted its application for membership in the European Union. However, 14 years later, a majority of the chapters have not yet been closed. During this period, the Republic of Serbia has simultaneously maintained and strengthened its political and economic relationships with Russia and China. It is important to note that the state’s political leaders, from President Boris Tadić to President Tomislav Nikolić, to the current President Aleksandar Vučić, have emphasized four pillars of Serbia’s foreign policy in their speeches. These pillars are not only based on the western political hemisphere (the EU and the United States), but also on the eastern hemisphere (Russia and China). This foreign policy seesaw between the West and the East is deeply rooted in Serbia’s foreign policy narrative, and during this period, it has been beneficial for the

decision-makers in Belgrade, as Russia and China have provided and continue to provide the necessary veto in the United Nations Security Council in the event of a vote on Kosovo's membership. The position of the European Union in the negotiations on the status of Kosovo, primarily through the signing of the Brussels Agreement, as well as the „unofficial“ stance that the Republic of Serbia can't become a full member until the issue of Kosovo's final status is resolved, certainly affects the relations between the parties involved. This leads to an alternating „heating and cooling“ of relations between Brussels and Belgrade. On the other hand, relations with China and Russia are based on common political and economic interests, without open disagreements and issues that need to be resolved. Since December 2008, with the sale of Serbia's Oil Industry (NIS) to the Russian company „Gazprom“, the Republic of Serbia's energy security has been significantly linked to Russia. In addition, during this period, particularly after 2016, a significant number of Chinese companies have come to the Republic of Serbia, which constitute a large part of the Serbian industry, especially in the fields of metals, copper and mining in general. This position of the Republic of Serbia to some extent corresponds to the proclaimed policy based on four pillars. However, during 2020, relations between the Republic of Serbia and the European Union were further complicated by the Union's more demanding requirements for resolving the status of Kosovo and aligning foreign policy. These two issues, in addition to European integration, represent the two main factors for understanding the behavior of decision-makers, as well as the attitudes of citizens.

2. FOREIGN POLICY ANALYSIS AND PUBLIC OPINION

The attitudes of citizens are playing an increasingly important role in the analysis of foreign policy. „It has long been assumed that the foreign policy attitudes of the mass public are random, disorganized, and unconstrained if they exist at all“ (Hurwitz and Peffley, 87: 1099). Foreign policy analysis as a discipline is increasingly placing the attitudes and expectations of citizens at the center of its research programs in order to understand how state leaders should behave in regards to foreign policy. This epistemological perspective is considered more than justifiable and is applied in this study, attempting to understand the foundations on which the foreign policy positions and cleavages of citizens in Serbia are constructed. According to the aforementioned authors, „foreign-policy thinking has not been found to be structured along standard ideological (liberal-conservative) lines, partisan lines, or class lines“ (Hurwitz and Peffley, 87: 1099). In this study, we will attempt to provide an answer to the question of the primary source of foreign policy attitudes and cleavages among citizens of the Republic of Serbia. Our research puzzle is based on the question posed by Rathbun et al. „Previous research shows that, when it comes to foreign policy, individuals have general orientations that inform their beliefs toward

more specific issues in international relations. But such studies evade an even more important question: what gives rise to such foreign-policy orientations in the first place?" (2016: 124). Our main hypothesis is that the foreign policy attitudes of citizens of the Republic of Serbia are significantly determined by cultural identification and affiliation, or a sense of belonging to the West or East. Therefore, in the following study, we will analyze citizens' perception of Serbia's foreign policy through the prism of cultural affiliation to the East/West.

3. RESEARCH METHODOLOGY

About the project: The research was conducted in collaboration between the Faculty of Political Science at the University of Belgrade and Ohio State University – USA. The name of the project is Comparative National Elections Project (CNEP). Prof. Erik Nisbet, Prof. Olga Kamenchuk, and Prof. Nikola Jović led the project.

Procedure: The research was conducted between August 16 and September 2, 2020, on a sample of 1800 respondents. The sample was a three-stage random stratified sample with three stratification methods: (1) polling station, (2) household, and (3) first next birthday. Using multinomial proportion fitting through a multilinear regression procedure, the sample was weighted and followed good methodological practice that requires a minimum of 30 people/observations in each of the targeted categories. The average survey duration was 45 minutes, and the response rate was 0.4 (number of rejections 2562, higher than usual due to Covid-19). The questionnaire consisted of 92 questions and was divided into five batteries (media, political and economic situation in Serbia, international relations, Kosovo, and elections and voting motivation).

Sample description: The average age of the respondents was 48 years. A total of 51% of respondents were women and 49% were men. The education structure of the sample shows that 34.5% of respondents have completed the highest level of education, 48.9% have completed secondary education, while the highest level of education, higher and university is held by 16.3% of respondents (no response 0.4%). The proportion of respondents from Vojvodina is 27.2%, from Belgrade 23.5%, from Central and Western Serbia 32.9%, and from Eastern and Southern Serbia 16.4%. Sixty percent of respondents come from urban areas, and 40% come from suburban and rural areas.

4. RESEARCH RESULTS AND DISCUSSION

4.1. Political and cultural affiliation of Serbia

The research shows that 19.6% of the surveyed individuals believe that Serbia belongs to the West, while 27.8% believe it belongs to the East. The remaining 52.6% believe that Serbia belongs neither to the East nor to the West.

When looking at different demographic variables, we can see that more women than men believe that Serbia belongs to the West (22% of women, 17.1% of men), while more men than women believe that Serbia belongs to the East (30.9% of men, 24.8% of women). Both gender groups have nearly identical views on not belonging to either the West or the East.

Interesting data is obtained when analyzing the urban/rural variable, where urban settlements do not have an impact on a greater inclination towards the West, as commonly perceived in Serbia. In fact, the data shows that in urban areas, respondents are more likely to believe that Serbia belongs to the East. A similar situation is observed when combining identification attitudes with regions, with the highest percentage of respondents in Belgrade believing that Serbia belongs to the East.

Table 2. Type of settlement and the affiliation of Serbia through the prism of East/West divide

	Serbia belongs to West	Serbia belongs to East	Neither East or West
Urban	20%	31.1%	48.9%
Suburban	20.2%	24.4%	55.4%
Rural	18.4%	21.9%	59.6%

$$\chi^2 (4) = 17.875, p < .00$$

Table 3. Region and the affiliation of Serbia through the prism of East/West divide

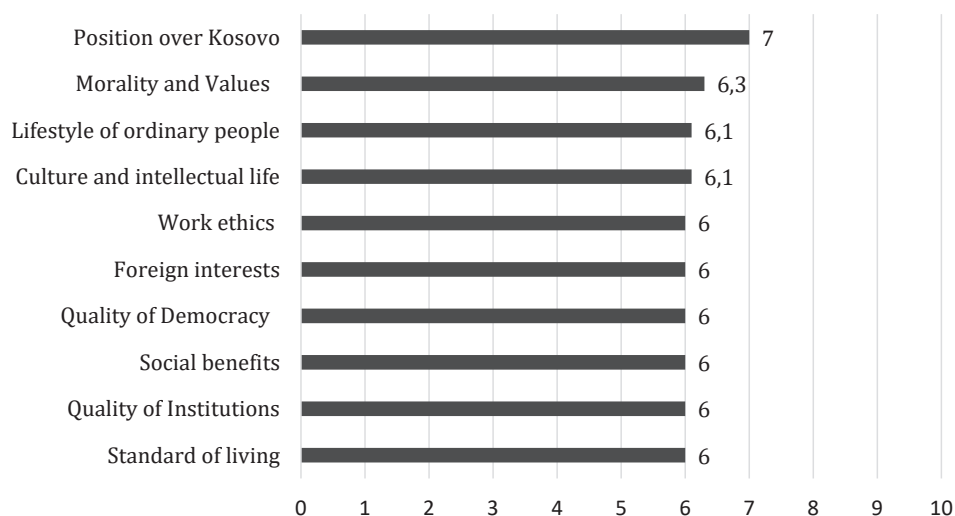
	Serbia belongs to West	Serbia belongs to East	Neither East or West
Vojvodina	21.9%	29.9%	48.3%
Belgrade	21.8%	37.6%	40.5%
Central and West Serbia	16.8%	22.9%	60.3%
East and South Serbia	18.1%	19.6%	62.3%

$$\chi^2 (6) = 51.931, p < .00$$

The data shows that the affiliation to the West or the East significantly differs depending on the level of education of the respondents ($\chi^2 (4) = 35.159, p < .00$). When viewed through the variable of education, it can be seen that the affiliation to the West increases as the level of education increases (primary school 17%, secondary school 19.7%, and university 25%). Similarly, when it comes to affiliation to the East, this sentiment increases as the level of education decreases (primary school 36.8%, secondary school 24.4%, and university 20.8%).

In addition to the question related to the respondents' assessment of where the Republic of Serbia belongs in the East/West divide, a more complex instrument was also created to measure this sense of belonging in a more nuanced way. The instrument consisted of 10 items (Standard of Living, Quality of Institutions, Social Benefits, Quality of Democracy, Foreign Interests, Work Ethics, Culture and Intellectual Life, Lifestyle of Ordinary People, Morality and Values, Position on Kosovo). Respondents had the opportunity to use the semantic differential to determine whether Serbia belongs more to Western Europe (left end of the semantic differential) or Russia (right end of the semantic differential). The obtained data clearly shows that on average, respondents in Serbia consider that Serbia belongs significantly more to Russia based on all measured items.

Graph 1: Where Serbia belongs?¹



This complex instrument was then converted into an index from 0 to 1, where 0 means proximity to Western Europe and 1 means proximity to Russia. The composite index calculated in this way is .61, while the isolated cultural items and converted into a separate cultural proximity index is .62. This index of cultural proximity is composed of the following items: Culture and intellectual life, Moral and Values, Lifestyle of ordinary people. The cultural index observed through demographic variables shows that men are more inclined towards Russia than women are (male $m=0.63$, female $m=0.60$, $f\ 1.532$, $df\ 4$ $p < .00$, $\mu^2 .007$). Cultural proximity analyzed through the variable of education shows that proximity to Western Europe increases with the increase of education, or that the respondents with the lowest level of education consider Serbia the most culturally close to Russia (primary school $m=0.67$, secondary school $m=0.59$,

1 0 - Extremely Close to Western Europe
5 - In-Between Western Europe and Russia
10 - Extremely Close to Russia

university $m=0.59$, $f\ 21.679$, $df\ 2$, $p< .00$, $\mu^2\ .026$). The type of settlement (urban/rural) and regions show that there is no significant statistical difference in the perception of cultural proximity.

4.2. Foreign policy attitudes

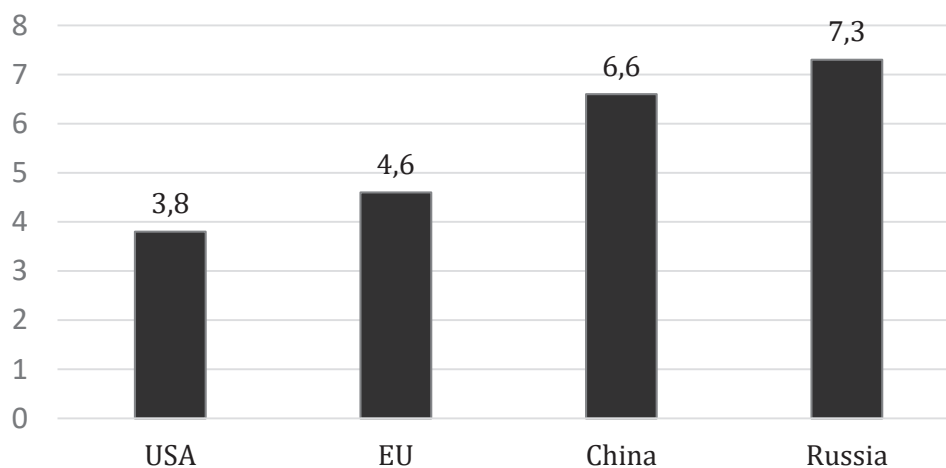
The results of the research indicate that the citizens of Serbia are not any less interested in foreign policy issues compared to domestic policy issues. Just over 52% of the respondents follow domestic politics, while 44.2% follow foreign politics. However, the data clearly shows that there is a significant difference between those who consider Serbia to belong to the East and the West in terms of how much they follow domestic and foreign politics.

Table 4. Interest in domestic and foreign policy according to East/West divide

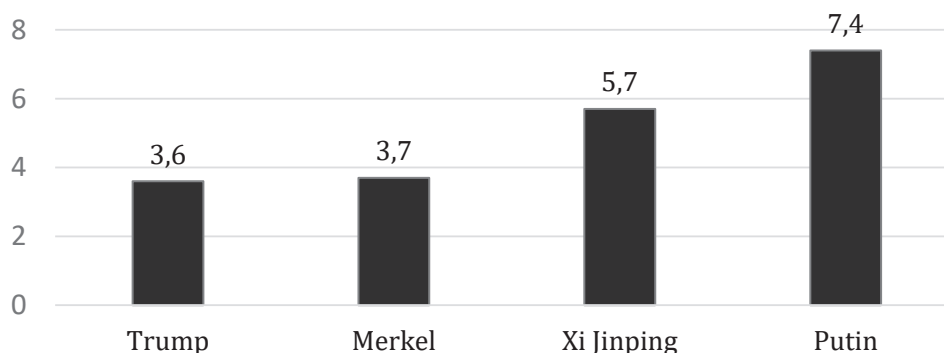
	I am interested in domestic politics	I am interested in foreign policy
Serbia belongs to West	48.4%	45.1%
Serbia belongs to East	64.1%	53.5%
Neither East or West	51.3%	42.7%
	$\chi^2\ (2) = 25.042, p< .00$	$\chi^2\ (2) = 13.953, p< .00$

At the beginning of a battery of questions related to foreign policy, the respondents were asked to rate the most important “players” in international relations and their leaders using a scale of 0 to 10. The results show that the respondents rate Russia and its leader Vladimir Putin the highest, while rating the United States and its former president Donald Trump the lowest.

Graph 2: Evaluation of super-powers

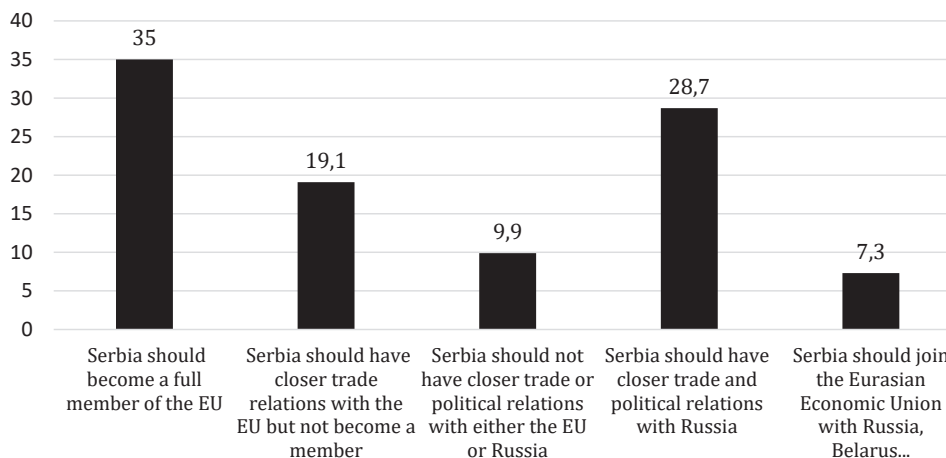


Graph 3: Evaluation of super-leaders



In the questionnaire, particularly important questions related to the foreign policy goals of the Republic of Serbia in the domains of economic and political relations and integration, and military relations and integration. Typically, in research projects in Serbia, these questions are posed in a one-dimensional way in the form of questions such as „Do you support Serbia’s entry into the EU?“ However, in this questionnaire, we offered respondents more layers when it comes to cooperation and integration, not only those to which the Republic of Serbia officially or declaratively aspires.

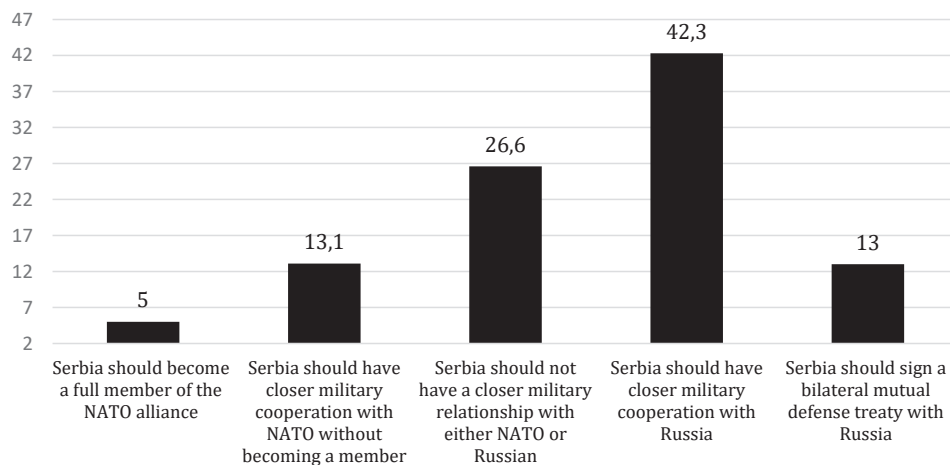
Graph 4: Serbian economic and political relations



These two charts show that citizens of Serbia think about Serbia’s foreign policy more complexly depending on the foreign policy areas and goals in question. When it comes to political and economic goals, the data shows that the majority of respondents (54.1%) are in favor of closer cooperation and integration with the European Union, while a significantly smaller number of respondents are in favor of cooperation and integration with Russia (36%). On the other hand, military cooperation and integration is viewed differently,

as only 18.1% of respondents believe that we should have closer relations with NATO, while 55.3% of respondents believe that we should have closer relations with Russia.

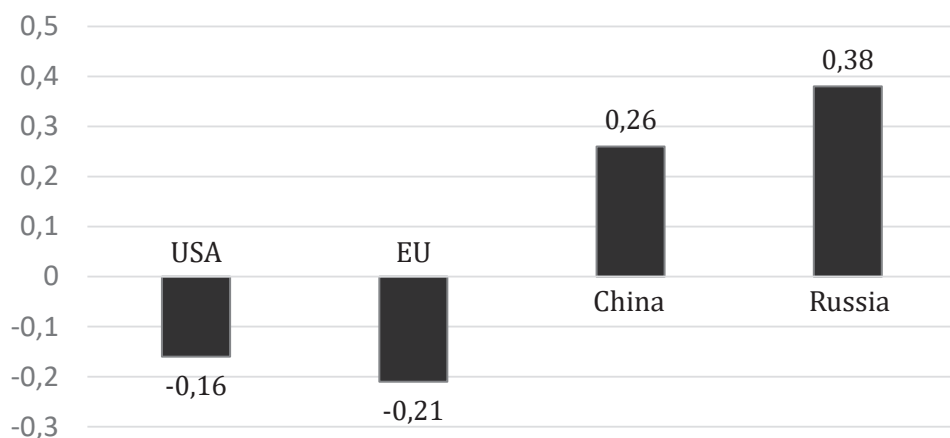
Graph 5: Serbian military relations



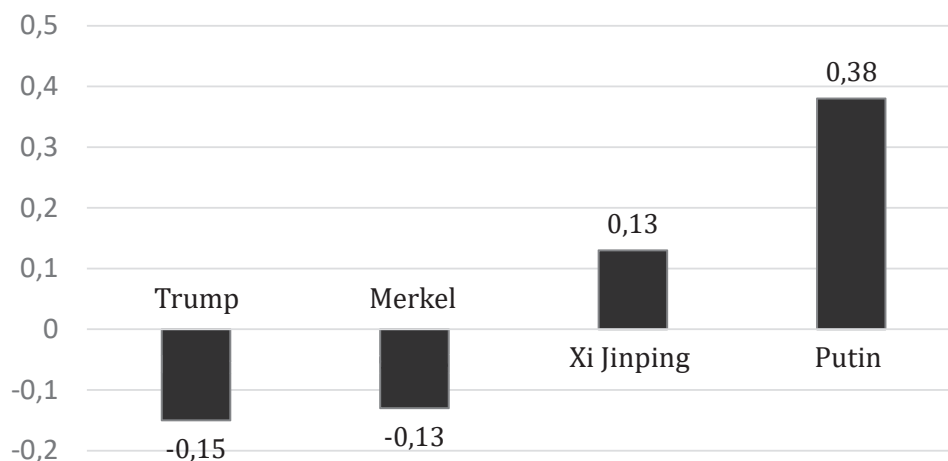
4.3. Foreign policy and cultural affiliation

The data in this section of the study will address our hypothesis that citizens of Serbia's cultural affiliation has an impact on how potential directions of Serbia's foreign policy are perceived. To test this hypothesis, we will observe the variable of cultural affiliation, which is defined by an index of 0 to 1, where 0 represents proximity to Western Europe and 1 represents proximity to Russia. We will cross this variable with four other variables: assessment of superpowers, assessment of super-leaders, Serbian economic and political relations, and Serbian military relations.

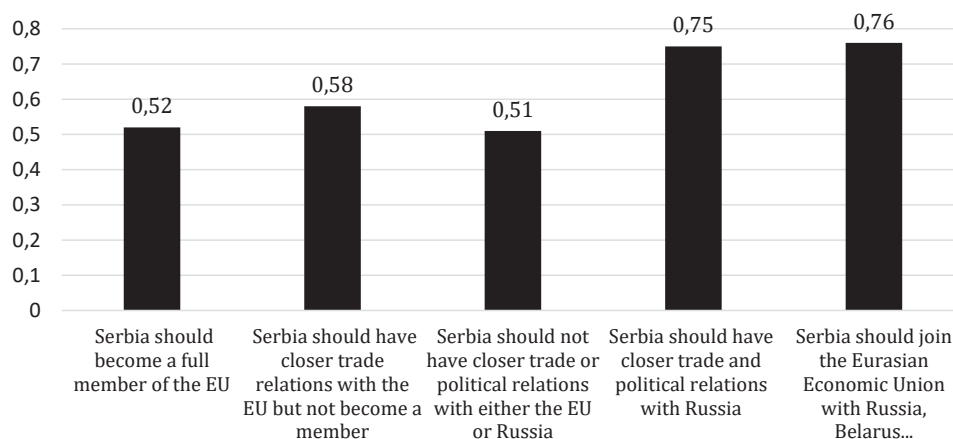
Graph 6: Evaluation of super-powers correlated with cultural affiliation



Graph 7: Evaluation of super-leaders correlated with cultural affiliation



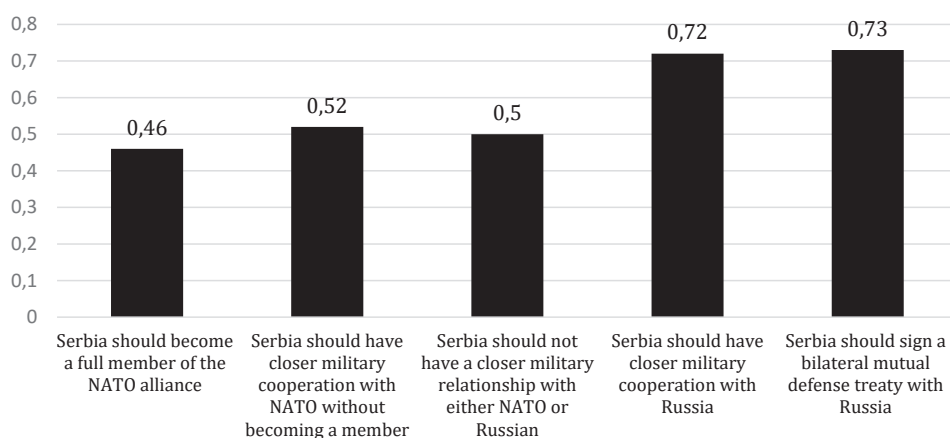
The graphs 6 and 7 show two significant things. First, the moderate positive correlation ($r = .38$) in the case of the evaluation of Russia and Vladimir Putin shows that the closer the respondents are culturally to Russia, the higher their evaluation of Russia and Vladimir Putin will be. This data appears logical and expected. However, on the other hand, this mechanism does not work when it comes to respondents who are closer to Western Europe. Namely, for these respondents, proximity to the West does not affect better evaluations of the USA and EU, nor better evaluations of their main leaders.

Graph 8: Serbian economic and political relations / cultural affiliation index (f 104.636, df 4, $p < .00$, $\mu^2 .216$).

Graphs 8 and 9 show the same matrix as Graphs 6 and 7. Namely, the results of the ANOVA test show that the respondents who opt for closer political, economic and military cooperation with Russia are culturally close to Russia.

We can say that this data is intuitively expected, however, respondents who opt for closer political, economic and military cooperation with the European Union are not as culturally close to Western Europe. These respondents are located on a scale from 0 (culturally close to Western Europe) to 1 (culturally close to Russia) in a neutral zone around .5. This data tells us a key thing, which is that the cultural affiliation variable works when it comes to foreign policy preferences towards the East, much more than it does for the West.

Graph 9: Serbian military relations / cultural affiliation index
($f\ 115.329$, $df\ 4$, $p < .00$, $\mu\ 2\ .239$).



5. CONCLUSION

Researchers in Foreign Policy Analysis, such as James Rosenau or Ole Holsti, emphasize that the basic foreign policy cleavage among citizens of the United States is based on a value-based and societal cleavage around cooperative and militant internationalism (1996). In Serbia, there are no studies with such a focused research question, so this study is pioneering in nature, although it only opens the question of cultural affiliation and no other variables, as is the case in the aforementioned study that examines foreign policy foundations among citizens of the USA. Frode Liland has best described the problem with culture as a measurable concept: „Why has culture not been of interest to diplomatic historians? One obvious reason is that ‘culture’ is such a slippery concept“ (1993: 5). In this sense, we are aware of the limitations that are embedded in our analysis. However, by operationalizing cultural affiliation, we attempted to analyze the perception of foreign policy goals of the Republic of Serbia. We share the belief that culture is important because it describes the fundamental characteristics of a political society. „The cultural characteristics of any given society (1) are important, because the cultural characteristics make up the cultural framework (2) in which the foreign policy establishment operates.

In other words, culture can be said to be a foundation of foreign policy“ (Liland, 1993: 8). Insights from our research show that cultural affiliation represents an important variable in shaping foreign policy attitudes of citizens of the Republic of Serbia, particularly among citizens who are oriented towards closer political, economic and military cooperation with Russia. In this sense, cultural affiliation has a significant influence on foreign policy attitudes and preferences towards Russia, but not when it comes to the European Union.

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Никола П. ЈОВИЋ
Катарина БОГИЋЕВИЋ
Андреј НАУМОВИЋ

ПЕРЦЕПЦИЈА СПОЉНЕ ПОЛИТИКЕ СРБИЈЕ
ОД СТРАНЕ ГРАЂАНА КРОЗ ПРИЗМУ КУЛТУРНЕ
ПРИВРЖЕНОСТИ ИСТОКУ/ЗАПАДУ

Резиме

Спољно-политичка анализа фокусирана је на разумевање и анализу процеса доношења спољнополитичких одлука у међународној арени, у одређеном контексту. Један од чинилаца контекста који значајно утиче на креирање спољнополитичких стратегија јесу и ставови грађана, односно јавности, државе која креира спољну политику. Однос између ставова грађана и доносиоца одлука је изузетно комплексан. Наша истраживачка намера је да анализирамо перцепцију спољнополитичких преференција грађана Србије, са посебним освртом на утицај културне привржености на политичке, економске и војне интеграције. Наш рад је заснован на подацима добијеним из истраживања јавног мњења спроведеног у сарадњи Факултета политичких наука Универзитета у Београду и Универзитета Охајо - Сједињене Америчке Државе. На основу инструмената који мере културну приврженост грађана Србије према Истоку или Западу, анализирамо како културна приврженост утиче на спољнополитичке преференције.

Резултати истраживања до којих смо дошли у раду потврђују потребу да се настави са фундаменталним истраживањима ове сложене теме у блиској будућности.

Кључне речи: спољна политика, анализа спољне политике, културолошка приврженост, ЕУ, Русија, подела на Исток/Запад.

*Jovan M. GORDIĆ**

University of Niš, Faculty of Law, Serbia

*Predrag M. GORDIĆ***

Office of the National Security Council, Belgrade, Serbia

IMPLEMENTATION OF METHODS, TECHNIQUES AND INSTRUMENTS IN FUNDAMENTAL RESEARCH OF LAW

Abstract: Contemporary development, achievements and tendencies in the development of human society indicate the essential importance of scientific knowledge and its application in practice. Scientific knowledge is determined by the application of certain methods, techniques and instruments. The multitude and diversity of problems, phenomena and processes that need to be scientifically analyzed, and especially scientifically forecasted and applied in theory and practice, confirm this. Scientific research is the only successful way of social development, which can only be implemented through a developed and applied methodology in the field of social sciences and thus the methodologies of law. The application of research methods, techniques and instruments in legal methodology can be successfully implemented by methodological experts who have theoretical and empirical knowledge and experience. By looking at the representation of the content of the Methodology of scientific research, including the methodology of law, at all levels of higher education at state and private universities in the Republic of Serbia, the tendencies and practice of the representation of subject contents can be observed, as well as the scientific foundation in the choice and application of scientific methods and their consistency with the scientific problem, subject, hypotheses, scientific goals, and contribution to science and society.

Key words: Science, methodology, legal methodology, methods, research techniques and instruments.

Human actions in the present and the foreseeable future can be realized on the basis of scientific knowledge or intuitively (as relatively true); they have always been present and applicable in the human community. Our starting point

* Doctoral student, gordicjovan5@gmail.com

** Assistant Professor, gordicpredrag@gmail.com

is that scientific knowledge and its application in practice are important factors for the survival and development of human society. Therefore, we will consider the concept of science, methodology of social sciences and special methodologies. From them, we will point out the important similarities and specificities of the methodology of law. Science is a specific social activity. Scientific knowledge begins with the formation of concepts and terms. In order to understand each other well and talk about the same thing, it is necessary to use concepts and terms in the same meaning and within a meaningful logical system. Thinking and knowing begins with the formation of concepts through perception, imagining and representation, which is actually a logical procedure of knowledge that includes naming and marking. Scientific knowledge is obtained by applying various methods. The research of social phenomena is in fact very complex because all the realities of social reality are implied: material, psychic and spiritual, past, current, possible; they are all manifested in different ways. With the modern development of science and technology, the mass and variety of problems of phenomena and processes that need to be solved scientifically are becoming more pronounced. The relationship between theory, factual, systematic empiric knowledge, weaknesses of theory and methodology, and thus the application of scientific research methods represent challenges and determinants that will basically be pointed out. The basic determinants of science, the methodology of scientific research work, the methodology of law, methods, techniques and instruments of research and the model of application of statistical methods, techniques and instruments of research in specific research work will be presented. According to scientifically available literature, it can be stated that there is no unequivocal definition of science, that is, methodology. Herewith we shall list some of them.

Science represents a very wide range of objective and methodologically derived knowledge, the goal of which is to arrive at the objective truth about reality. That knowledge is systematized and argued with evidence and facts, and it was arrived at by applying scientific research methods (Mihajlović 1999: 15, 42).

The tasks of science are to expand and deepen man's knowledge of natural and social phenomena and to change the conditions of man's work and life. Science is objective, critical, methodically derived knowledge (Marković 1994: 13).

The goal of every science, whether it is natural or social science, is to discover and establish scientific truth. Thus, the application of methods in science means the procedure by which scientific knowledge is reached (Marković, 2003: 23-24).

In order to define the concept of methodology, it is necessary to explain the meaning of the term itself. Therefore, „methodology“ is a compound word consisting from two parts: „method“ and „logy“. The word „method“ (lat. *metodus*) means a way, a way of examining, a way of thinking and a way of working. Accordingly, as a rule, we actually mean deliberate, planned and systematic action when working to achieve a goal. The word „logos“ (Greek *logos*, Latin *logica*) means letter, concept, reason, teaching, word, knowledge, science. Thus, methodology means the science of method. Methodology is most often defined

as a branch of logic that studies the scientific method, and as such it should be considered within logic, not separately from it. The logical basis of the methodology consists of: principles and laws of true thinking and issues of naming, marking, meaning and language as a means and object of thinking; forms of thinking; as well as special methods and their procedures (Radenković 1995: 45).

Methodology as a scientific discipline „comprises three components: general theoretical-methodological approach, methodological procedure and technical methods for collecting facts, therefore, in this sense, methodology would be a research framework that includes theory, methods and research techniques“ (Milić 2019: 97).

There are several classifications of methodology. Our well-known and recognized scientific workers and methodologists S. Milosavljević and I. Radosavljević classified methodology as follows: General methodology, Methodology of natural sciences, Methodology of social sciences, Methodologies of individual sciences - special methodologies (Milosavljević, Radosavljević 2006:9-10, 37). They also pointed out the importance of choosing the methods to be used in the research; these methods should be carefully considered because they represent the specificity of the research.

Every modern science, along with the growing tendency of specialization, devotes great importance to the question of methods. This stems from the need to differentiate knowledge as one of the main characteristics of modern scientific movements. Furthermore, this conditions the increasing methodological heterogeneity or methodological pluralism. Finally, the methodology also contains a normative component. It, as a logical discipline, not only describes the existing scientific practice, but prescribes logical, technical and strategic rules and norms on how research should be done in science so that its results represent a contribution to knowledge (Šušnjić 1973: 29).

Academician Lukić made a particularly significant contribution to methodological thought and practice. He started from the question of the correct name of the methodology, asking whether the correct name is the methodology of law or the methodology of legal sciences. He provided scientific arguments that the methodology of law is acceptable, primarily because the Methodology of Legal Sciences limits it to dealing with law as a science. He pointed out that in addition, people deal with law as a philosophy of law, but also as practice. He defines science as an objectively true thought reproduction of objective natural, social and thought processes - phenomena. He emphasizes the importance of the combination of knowledge and experience, and points out that there is no knowledge without experience, and that our knowledge abilities represent only the ability to process the material obtained from experience. But it does not create any material by itself, nor can it draw it from itself (Lukić 1977: 3, 4).

Methodology is the science of method, that is, of methods. The methodology of legal sciences studies the methods that are used in our practice of law, whether theoretical-learning or practical. He emphasizes the difference between

theoretical cognitive methods and practical research. Methodology in law aims to look at the essential factors without which valid scientific research cannot be carried out. Methodology is a broader concept than the term method, although very often the two terms are identified and used as synonyms. He also deals with methodology as a metacognitive discipline. Lukić believes that: Methodology is a scientific discipline that deals with the determination and systematization of methods, i.e. with the appropriate ways to learn the subject of study. Accordingly, legal methodology is a scientific discipline that deals with methods of learning law and legal phenomena (theoretical methods in the broadest sense). At the same time, legal methodology also studies the methods of dealing with law in practice (when creating and applying law). This raises the question of the relationship between the methodology of legal science and legal practice (Lukić 1977: 4, 5, 6, 7, 66-155).

2. SCIENTIFIC METHODS

When considering the methods of legal sciences, Lukić emphasizes that law is a complex phenomenon. Law is a spiritual creation, and as such it is simultaneously a spiritual and social phenomenon. Law is an important factor in social and spiritual life. Philosophy deals with law, but also with politics, that is, political science. Law as a phenomenon is also dealt with by disciplines on values (Lukić 1965: 32-45).

This complexity is also conditioned on the choice of scientific methods, due to the fact that law by its nature is primarily an ideal phenomenon, i.e. a set of thoughts, but at the same time it is also a real phenomenon. The law that is studied by science is expressed by real statements; this law actually exists in human society, and that is positive law. As such, it is related to people and their psyche, as well as to their society; people have both psychological and social sides and they are actually visible. These real aspects of law can only be learned through real methods. In fact, the ideal methods by which law is learned as an ideal phenomenon are only abstracted - separated from law as a real phenomenon and can never be fully separated from a real phenomenon. Since law as a real phenomenon is primarily a social phenomenon, and then a psychological phenomenon, the methods of social phenomena and sociological methods and psychological phenomena and psychological methods will differ. Since law can be related to material phenomena, primarily biological phenomena, we will distinguish the following: Material-inorganic and organic methods, biological, social, sociological methods, psychological and psychological methods (Lukić 1973: 41). The very word method is actually used in various senses. The method is used as a tool, the action of using the tool and the way of performing that action. The word method itself is used to denote the way in which a goal is achieved. As a complex and important phenomenon, law can be examined using the methods of scientific knowledge of law. There are independent

and non-independent scientific methods of learning the law. Independent scientific methods of learning law are divided into realistic and ideal methods. Real methods are based on real and material phenomena, namely: psychological, sociological and political methods. Ideal methods are dogmatic and normative methods. Non-independent scientific methods are: historical comparative and comparative legal method (Lukić 1977).

Considering the relationship between politics and law, we will mention the classification made by Milosavljević and Radosavljević in political science. According to them, the basic methods of scientific thinking and research are analytical basic methods: the method of analysis, abstraction, specialization (classification, dichotomies), deduction, then synthetic methods (synthesis, concretization, generalization, induction). General scientific methods are: hypothetical-deductive method, statistical method, modeling method, axiomatic and analytical-educational comparative method. Methods of data collection are: examination, observation, experiment, operational methods of data collection (similarity study, document content analysis, test, biographical method (Milosavljević, Radosavljević 2006)

The method of scientific knowledge is a meaningful and purposeful, rationally constructed system of ideas, concepts, actions (procedures) and means selected according to scientific criteria and scientifically verified with the aim of acquiring scientific knowledge, that is, scientific research on the subject and method of science.

The scientific method has three components: logical, epistemological and operational-technical component (Termiz, Milosavljević 1999).

In addition to general methods, each science also has its own special, specific methods, which correspond to the subject of its study. For example, legal sciences have a legal method, sociological sciences have a sociological method, and historical sciences have a historical method. For the sake of a more complete and successful study of their subject, most sciences, in addition to their special method, also use other appropriate special methods (Kulić, Kulić 2015: 13).

A method is a way of research that is applied in a science, and it has several components that are at the same time its constituent parts: - logical component (given through logical criteria, criteria and rules within general methods), - epistemological component (made up of criteria, criteria and rules created from the already existing scientific fund given through theories, definitions...), and - technical component - consisting of special operational methods, techniques, instruments and other research procedures (Mihajlović 1999).

The research method is an important instrument of true scientific knowledge acquiring. The method is essentially a procedure that consists of two essential parts: the principles and rules of the method and the actual application of the method. The basis of the method structure consists of three parts: The first is the Logical part. The basic and essential feature of every science is its logic. It is normal for the method to be strictly logical and meaningful; Epistemological part. The rules of methods are based on knowledge about the subject of science,

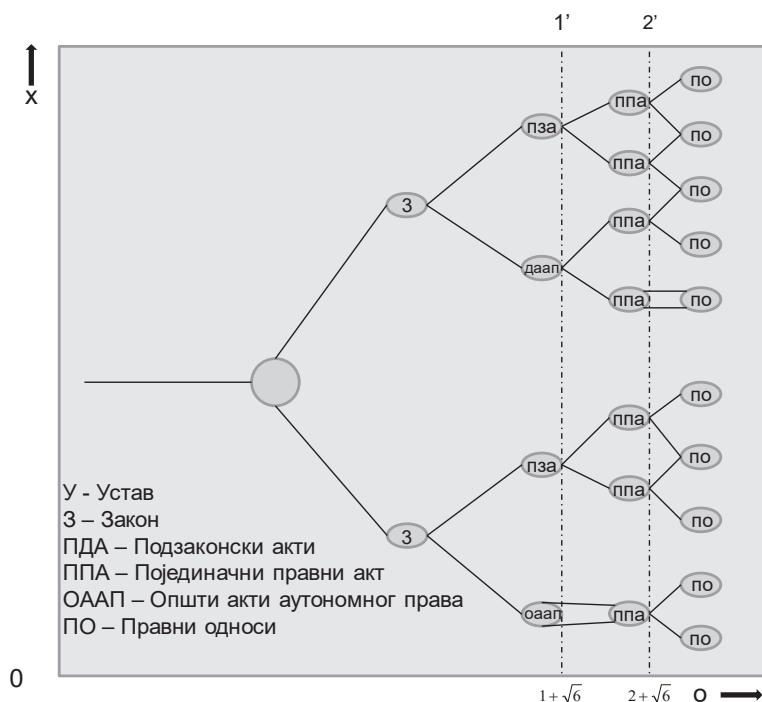
on knowledge of verified scientific theory and on knowledge of methodology, as well as on knowledge of scientific research experience; Methodological and technical part. It consists of operationalized method settings and method techniques (Gordić et al. 2016).

Termiz and Milosavljević point to the complexity when choosing methods, techniques and instruments, highlighting important features that should be taken into account such as: „multi-level and diverse complexities that are reflected and arise from the relationship between axiomatic statements, principles, starting points, theories, conceptual ideas on the one hand; and regulations, normative provisions as systems, subsystems and their constituents on the other hand; there is also the practice of protecting secret data and documents of the factual activities and conduct of third parties. Given the three-layer nature of process provisions and researched content, certain degrees of agreement and disagreement between the enumerated layers and within them necessarily occur. These agreements and disagreements are expressed (manifested) in the area of structure, function, relationships and connections, content and form, intentions and realization of intentions, ideas and reality. Normative provisions, as well as researched content, have a dual character. They are simultaneously a form of realization of a conceptual-theoretical idea (model), and to a certain extent they are also a projection (projected model) of the researched phenomenon as a social, political, legal, security activity and behavior in reality. The role of normative provisions is also twofold in this case. Firstly, they have the role of concretizing mediators in relation to the conceptual-theoretical idea (model); secondly, they have, as a system, a guiding role in relation to practice“ (Termiz, Milosavljević 2000: 22, 23, 159).

Viewing the international law, as well as the development and application of modern technologies, Prof. Vasić believes that „Unfortunately, international law, either in the lexical or in the categorical sense, fails to follow the rapid progress of information and communication technologies and to bring their use under appropriate norms of behavior.“ There are no clear rules on what is allowed in cyberspace and what is not, as well as there are no sanctions for endangering information security (Vasić 1999: 246).

When choosing research methods, techniques and instruments, it should be emphasized that it is necessary to study the theory and practice of coherent legal systems, in accordance with international norms, as well as certain theoretical problems and deviations in practice from the legal aspect. This applies especially to countries in transition, with democratic institutions that are just being built.

According to Mitrović, „coherent legal system; at the top of the hierarchy of sources of law is the Constitution, from which all other legal acts derive. After the Constitution, the most important legal act is the Law. The majority of legal norms are created by law“. By-laws, individual legal acts, general acts of autonomous law are important elements of the legal system (Mitrović 2000: 275). This is shown in Scheme 1.

Scheme 1. Factors of a coherent legal system¹

It should be emphasized that according to current classifications in methodology, the comparative method does not belong to the general scientific methods, but to the general methods of the social sciences. This point of view is explicitly disputed by Termiz, Dž. and Milosavljević, S. in the book „Introduction to the Methodology of Political Science” and Milosavljević, S. - Radosavljević, I.: „Basics of methodology of political sciences”, and especially Tančić, D. in the book „Fundamentals of the historical method”. For the social sciences, it is important that the essential general objects of comparison are all social phenomena, but not all of them, but only those in which a certain quality can be determined, between which there is a certain degree of possibility of establishing sameness, similarity or difference. Genus, class, etc. and their determinations, their properties, give us the possibility of comparison not only for the purpose of establishing similarities but also for the purpose of establishing differences. The key issue of the comparative method is the following: a) sufficiently precise and accurate definition of at least one member of the comparison process, that is, the properties and factors that are compared; b) determination of comparables - concretization of what will be compared in real concrete terms (eg comparison of families is a subject, but selected characteristics of families are comparable); v) determination of indicators - parameters of similarity and difference. Once these preconditions have been established, there follows obtaining true,

1 Ibid, p. 271

usable data and using them conscientiously and drawing conclusions based on them (Gordić et al. 2016: 25, 26, 105).

In research in the field of law in modern conditions, the following scientific methods are most often applied:

almost all basic methods of logical and scientific knowledge: starting from analysis, synthesis, abstraction, specialization, induction, deduction, etc.;

using the methods of analysis and synthesis, the theoretical positions of domestic and foreign authors related to the subject of the research are investigated;

the normative-legal method is used to study and critically review the legal and sub-legal norms and other regulations in the subject areas;

the specialization method is used to find out special and individual provisions in the general structure, whereby it is generally understood as a whole made up of members that are all interconnected by certain common properties, but evident differences are kept between them, on the basis of which their uniqueness can be identified;

the method of generalization is applied when analyzing certain factors and institutes that exist in order to reach general conclusions about it;

the inductive-deductive method is used to formulate synthetic conclusions.

Of the general-scientific methods, hypothetical-deductive, analytical-deductive, legal (dogmatic-normative), comparative-legal, axiomatic, historical, comparative and statistical methods and modeling methods are applied.

The normative-legal method is used to study and critically review legal norms, sub-legal norms and other regulations in the subject area.

The legal (dogmatic-normative) method is considered basic by many scientists; it is composed of dogmatic and normative methods.

Dogmatical method separates law from politics, isolates it and wants to present it as a dogma, insisting on the principle of legality.

The normative method determines the structure of law and how law functions.

The comparative-legal method is applied in finding out the identity, similarity and diversity of the researched subject content in various times and in various places determined by adequate criteria, identical or diverse phenomena in a defined space and time.

Modeling method - using a theoretical model - experiment. The application of this method is multiple. It verifies the existing theoretical model of the legal aspects of the investigated phenomenon and forms a knowledge basis for the development of a prognostic potential model.

Statistical method - its application is justified by static and dynamic analysis of monitoring the research of the subject content. In the following text, part of the content of the statistical method will be presented in more detail.

Historical method: the study of the content of the subject from its very beginning until now, because based on the scientific knowledge of the current state, it is necessary to study the past.

Regarding the methods of data collection, we will apply the document content analysis method, the case study method, and the examination and observation method.

The method of document content analysis, namely quantitative and qualitative content analysis, provides a more detailed insight into the content of individual data sources in order to find out the essential properties of the researched area from the point of view that is the subject of this research. The data used are classified as primary, secondary and tertiary, official and semi-official and data that must have a high degree of validity.

Research method: using the survey technique and questionnaire instrument, data is collected from experts and from a properly selected sample of respondents, about the researched content.

Applied research techniques are: observation, surveying, interviewing, testing, content analysis, with the following instruments: observation protocol, survey questionnaire, interview protocol, test, content analysis sheet.

By reviewing publicly available doctoral theses from state and private universities in the Republic of Serbia, for the last ten years, in the field of legal sciences, we studied whether they contain a methodological framework of research, methods, means and instruments of research, compliance of subjects, goals, hypotheses of research with applied scientific methods and defined scientific goals. The general observation is that much more attention must be paid to the legal methodology.

3. THE PRESENTATION OF CERTAIN ESSENTIAL CONTENTS OF THE REALIZED EMPIRICAL RESEARCH IN LAW

The results of empirical legal research are an important component of scientific works. They usually include the following content: Methodological research framework, construction of the basis for scientific discussion and survey questionnaire, obtaining and processing data using the basis for scientific discussion and survey questionnaire, presentation of research results and their discussion. The results of theoretical and empirical research represent the basis for the development of a conceptual model of the researched content, and for the development of concluding considerations and recommendations.

2.1. The methodological framework of the research

The methodological approach on the empirical part of the research in the field of law is based on the methodological provisions defined in the chapter that refers to the methodological aspect of the work, namely in the contents related to the problem, subject, goals, hypotheses, method of research and certain scientific methods. This chapter describes the applied scientific methods of data collection, most often the research method with its techniques and instruments (interview and survey). In the presented model, the interview was conducted on a sample

of the optimal number of respondents - experts from different institutions, and the survey was conducted on a sample from the scientifically valid number and structure of respondents.

2.2. Construction of the basis for the scientific discussion and survey questionnaire

Conceptualization and re-conceptualization when conducting research are extremely important. After the pre-research has been carried out, and after the good sides and weaknesses have been observed, reconceptualization and final preparation of the basis for a scientific discussion regarding the contents of the survey questionnaire, as well as the interview protocol, is carried out.

The basis for a scientific discussion is quite similar to a "survey questionnaire" in terms of its formal characteristics. The essential difference consists in the following: (a) the basis of the questions are formulated clearly and specifically, and these questions do not have to be simple; they can express a connection with other questions. It is not required that the question be asked exactly in the given wording, although this should be striven for; (b) although the questions are numbered and arranged in accordance with the requirements of the logical strategy, they are not required, except in certain cases, to proceed in the order given in the form; (c) response modalities do not have to be predicted and formulated, because they are not "offered" to the respondent. The interviewer's tasks in conducting the interview are, in addition to the usual ones, to: a) identify the true meaning of the answer; b) to submit it correctly under the provided questions and to enter them as adequately as possible in the adequate column.

When formulating the basis for the scientific interview for the examination of experts, we had in mind their work engagement in various institutions, organizations and bodies. In this context, five batteries of questions were created. With the first battery of questions in the interview, the interviewees were asked questions about what they think or according to them, what is considered and what is not considered to be the subject content according to the provisions of the law. Then, which authorities are responsible for the implementation of the law and which authority supervises the implementation of the law in the Republic of Serbia. The second battery of questions asked the interviewees about their understanding of important categorical concepts in the existing political-legal theory in relation to the subject content and their understanding of whether they are well defined. In the third battery of questions, the interviewees were asked questions about their understanding of the methodology and the methodology of the subject content in the Republic of Serbia, whether they are determined in a uniform manner, whether the given system is sufficiently efficient, and if not, whether they think it is necessary to formulate a conceptual model. With the fourth battery of questions, the interviewees were asked questions about analytical aspects of data collection and processing. With the fifth battery of questions, the interviewees were asked questions about legal regulations or which laws have points of contact with the law relating to the content in question.

In contrast to interviews, the subject of surveys is, in practice, mass phenomena, therefore the survey is connected to the statistical general scientific method. The important features of the survey are: systematization, shorter duration and economy. In the survey, it is important to choose a valid sample, which will be representative and will consist of competent respondents. The first part of the questionnaire deals with socio-demographic characteristics. The same questionnaire included a valid number and structure of respondents (51.6% men and 45.2% women), of which 43.5% were under the age of 30, 29.2% were between 30 and 40 years old, and over 40 age is 23.4% of respondents, while 4.3% of respondents did not want to state their age. The second part of the questionnaire dealt with questions about the subject of the research, with several batteries of questions, which are presented in the appendices and the data processing itself.

2.3. Data collection and processing using a scientific interview basis and a survey questionnaire

Given that in this model of demonstration of the subject content, one method of data collection was applied, namely the survey, and consequently two of its techniques: interview and survey; and from their instruments: basis for scientific discussion and survey questionnaire; the following was used to process the collected data:

A) Descriptive statistics, namely:

using the instruments of descriptive statistics, the entry control and the validity of the entered answers were carried out, using a control question and filtering the answers of respondents which were completely empty.

The following instruments of descriptive statistics were used: a) frequency of entered answers, b) determination of valid percentages in relation to the total number of respondents and c) mathematical and statistical indicators.

When analyzing the answers to each question, the minimum and maximum values, the number of valid answers, the mean value of the entered answers, the sum, the deviation and the variance were taken into account. The value of asymmetry, as well as the flattening of the distribution of the obtained data, was especially determined in order to define adequate tests for inferential analysis:

B) Inferential statistics, namely:

For questions from the group of socio-demographic features, a series of T-tests was performed based on one sample (question) to calculate deviations from the expected mean values, which were expanded with a binomial test in cases where there was a need for it.

T-tests of independent samples (questions) were used for the basic comparison and determination of similarity between groups of different categories of answers, which sought deviations from the expected mean values,

as well as differences between the answers of respondents of the same groups. In situations where the distribution of the given answers is such that they do not follow the appropriate normal distribution curve, a prerequisite for the validity of the t-test of independent samples, a non-parametric analog alternative in the form of the Wilcoxon-Mann-Whitney test was used.

The basic instrument for calculating the relationship between several variables is a series of Xi-square tests on categorical questions, and for pairs where a statistically significant relationship is noticeable, a correlation assessment was additionally performed, depending on the distribution of data in the questions - Pearson's or Spearman's correlation for non-parametric results.

4. CONCLUSION

Scientific research represents the only successful way of social development, and such research implies a developed methodology. From the ancient times it has been known and confirmed again and again that the new is formulated within the old. From this, it was possible to formulate the assumption that in the past and the present, everything was moving towards changes manifested as tendencies. This point of view, complemented by Merton's functions (manifest and latent), confirmed the ability of social sciences, and thus of law, to forecast and create usable theories. In this paper, we pointed out the importance of the basics of logic and appropriate definitions, as essential for understanding what is actually being researched. Another important factor was also emphasized, namely the research method, its appropriate application, ie the development of theories and practices in the application of new methods. The paper highlighted the need for further and deeper study and development of meta-methodology, without which there is no valid connection between the subjects and methods of science and the meta-methodology and meta-theory. The research of contemporary social factors has confirmed that it is always necessary to start from the conceptualization and creation of an operational-applied research project, the constituent parts of which are: the research problem, the subject and objectives of the research, the hypothetical framework with indicators, the choice of research methods and the scientific and social justification of the research. This creates the prerequisites for true functional research, that is, diagnostic research, and especially prognostic research. In this way, the influence in science is strengthened, the development of prognostic methodology and contributes to the successful management of states for the happiness of all the inhabitants of the world, including the field of law. Our prognostic research is our research about ourselves and for our own sake, recognizing and discovering the possible, probable, certain and necessary in the actions and behavior of people. Furthermore, there is the discovery of the connection between cause and effect. This particularly applies to the methodology of political science and law. We pointed out the existence of an interdependent relationship between

experience, knowledge and predictions from the appreciation of space and time. When formulating the subject of research in the social and legal sciences, one should always keep in mind the universal model subject of research whose composition consists of the following: the conditions for the emergence and performance of the researched phenomenon, i.e. the problem and the subject of research: actors of events-subjects of action; interests and goals as the reason for engaging the subject; contents and forms of engagement, activities and procedures; used methods, means and procedures during a certain action and at the end of the effect of that overall action aimed at achieving the goal. By demonstrating the methodological basis of the realized research, we wanted to show only part of the applied method, technique and research instruments, with the aim of creating a conceptual model of the researched legal content, as well as for concluding considerations and recommendations of this paper, which are the essence of scientific work.

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Јован М. ГОРДИЋ

Предраг М. ГОРДИЋ

ИМПЛЕМЕНТАЦИЈА МЕТОДА, ТЕХНИКА И ИНСТРУМЕНАТА У ФУНДАМЕНТАЛНИМ ИСТРАЖИВАЊИМА ПРАВА

Резиме

Савремени развој, достигнућа и тенденције у развоју људског друштва указују на суштински значај научног сазнања и његове примене у пракси. Научно знање се утврђује применом одређених метода, техника и инструмената. Мноштво и разноврсност проблема, појава и процеса које је потребно научно анализирати, а посебно научно предвидети и применити у теорији и пракси, то потврђују. Научно-истраживачки рад је једини успешан начин друштвеног развоја, који се може реализовати само кроз развијену и примењену методологију у области друштвених наука, а тиме и методологију права. Примену истраживачких метода, техника и инструмената у правној методологији могу успешно да спроводе методолошки стручњаци који поседују теоријска и емпиријска знања и искуство. Сагледавањем заступљености садржаја Методологије научног истраживања, укључујући и методологију права, на свим нивоима високог образовања на државним и приватним универзитетима у Републици Србији, могу се утврдити тенденције и пракса заступљености предметних садржаја, посматрано кроз научну утемељеност у избору и примени научних метода и њихову усклађеност са научним проблемом, предметом, хипотезама, научним циљевима и доприносом науци и друштву.

Кључне речи: наука, методологија, правна методологија, методе, истраживачке технике и инструменти.

*Teodora G. DELJANIN**

University of Padua, Department of political science, law and international studies

THE ASSOCIATION OF LOW SOCIAL STANDARD OF THE FAMILY AND FAMILY PARTICIPATION IN THE LIFE OF ADOLESCENTS WHO USE PSYCHOACTIVE SUBSTANCES

Abstract: As the abuse of psychoactive substances moves into younger and younger age groups, addictions are also increasing accordingly. In Serbia, substance abuse among youth reached such high proportions during the last decade of the 20th century and is still prevalent today. That is why the government must make national addiction prevention programs its „top priority“. The combination of social factors (economic crisis, political turmoil, forced migration, unemployment, etc.), on the one hand, as well as the dysfunction of a number of families and individual factors, on the other hand, can lead to feelings of insecurity, fear, and meaninglessness in the young mind and hence the need to „solve“ these problems by using one of the psychoactive substances. In recent years, research has increasingly shown that young people and their families are unaware of the types of psychoactive substances available, their uses, how a person under the influence looks and acts, and the serious psychological and somatic consequences of consuming them. In the last decade, the first steps were taken in terms of researching this problem in Serbia. However, there is a lack of serious fundamental research on this significant social problem and, based on those results, the undertaking of comprehensive applied research that would be helpful in creating and implementing national programs for the prevention of addiction, that is, the inclusion of families in those programs.

Key words: Substance abuse, addiction, youth, effects of psychoactive substance abuse, family social capital, family factors.

1. INTRODUCTION

A psychoactive substance is a chemical substance that, as soon as it is ingested, changes the psychological structure - it affects mood, thinking, and behavior. Despite the fact that not all psychoactive substances

* Graduated political scientist, MSc, teodora.deljanin@outlook.com

are addictive, they can all damage mental and physical health. Recent classifications of psychoactive substances are based on the effect of drugs on the central nervous system (Lewis, 2022.). So we have drugs that lower the functioning of parts of the brain or the brain as a whole - central nervous system (CNS) depressants: alcohol, sedatives, opioids (morphine, opium, heroin, „poppy tea“), and volatile solvents (glue, bronze, gasoline). Drugs that temporarily speed up mental functioning are CNS stimulants - amphetamines, caffeine, nicotine, cocaine, and PCP. Hallucinogens change the structure of mental functioning - LSD, mescaline, cannabis, psilocybin, MDMA („ecstasy“).

Substance use disorders include addiction to psychoactive substances (PAS), such as ethyl alcoholism, drugs - drug addiction and cigarettes - nicotine addiction. In 1951, the World Health Organization (WHO) recognized alcoholism as a disease, as did drug addiction in 1957, and emphasized their health, family, professional, and social consequences. There is a harmful use syndrome and an addiction syndrome in addiction based on the current International Classification of Diseases. Harmful use means occasional use of PAS that can damage mental and physical health (for example, hepatitis with drug abuse, or an episode of depression with heavy drinking). There is mental but not physical dependence.

Talking about addiction syndrome, there are physiological, cognitive, and behavioral changes: tolerance to a substance (the need to take increasing amounts to achieve the desired effect), strong desire (lust) to take the substance, abstinence syndrome, use of the substance to deal with abstinence syndrome, neglect of obligations, work, and other activities due to the use of the substance, and continued use of the substance despite learning about the harmful psychological, social, and medical consequences.

There is often talk in the general public about light and heavy drugs, which is not scientifically based. This division leads to the misconception that some drugs are less harmful than others. All drugs are dangerous and can cause severe damage to physical and mental health, even after just one intake. Also, young people often combine alcohol and other psychoactive substances, they like to experiment by mixing different types of alcohol with sedatives, amphetamines and other psychoactive substances. When drinking extremely large quantities of alcohol, they drink it quickly. Such abuse of PAS, after a short period, can lead to severe physical and psychological damage. Risk factors for the disease include both individual and social factors. Research shows that the individual characteristics of people who abuse PAS are often: lower levels of self-esteem, lower threshold of tolerance for frustration, higher levels of anxiety and poor control of behavior (Stanković, 1995). Affective disorders, especially depression, as well as anxiety and panic attacks, along with dependence on PAS, are serious and widespread problems in the modern world. Fear and depression have been highlighted in a large number of studies as factors that double the risk of drug abuse.

More, this disorders are considered to be the most common causes of opiate abuse in adolescence. It is assumed that a large number of drug addicts primarily or secondarily manifest permanent forms of depressive disorders. Depression is associated with both personality type and adolescent conflict. Social factors are considered very important, especially in the initial phase of taking the substance. Models of behavior that represent parents, peers, important people from the environment are important, then the influence of the media - advertising of alcoholic beverages and cigarettes, especially by „famous and successful people“, great tolerance of the environment and society as a whole.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

In recent years, PAS dependence and mental and behavioral disorders associated with its use have reached epidemic proportions. There is a continuous increase in the prevalence (number of new cases). Research conducted in the last decade of the twentieth century suggests that drug abuse is increasing, particularly among younger people. However, there is also evidence that people over 40 and 50 consume more psychoactive drugs now than a few decades ago (Ramah, 2001). A higher frequency of abuse and addiction to drugs and alcohol was noted, as well as a combination of PAS including sedatives, alcohol, cannabis, heroin, cocaine, amphetamines, and other synthetic drugs (made in illegal laboratories). According to the reports of the World Health Organization, countries in transition are particularly endangered by this problem (Vučković, 2002). The United Nations estimates that 180 million people use drugs worldwide, of which 4.2 million are young people under or at the age of 15. About one billion and one hundred million people are addicted to nicotine, about 150 million are abused or addicted to cannabis, 30 million people use central nerve system stimulants, 15 million are addicted to cocaine, 8 million to heroin, and a large number, especially young people, uses synthetic drugs. Ethyl dependence is present in 9-15% of men and in about 6% of women (Ramah, 2001).

Approximately 10% of the population of many countries are engaged in drug trafficking. The profit from illegal drug production in the world is higher than the profit from the world oil industry, as well as textile, chemical and car production. According to the United Nations International Office on Drugs and Crime, the annual profit from the production of illegal drugs is \$ 400 trillion, the profit from the oil industry is about \$ 380 trillion, and the motor vehicle industry is \$ 200 trillion (UN). Money from drugs is used to finance both the production of new synthetic drugs (which are increasingly available) and the people engaged in its production, transportation, and to bribe the police, courts, politicians, and journalists.

2.1 Use of psychoactive substances in the adolescent population

Modern concepts treat adolescence as a special phase in development that lasts about ten years, and is related to the period between 11 and 21 years of age and includes three periods - early, middle and late adolescence. On the one hand, young people need to adjust to physical changes caused by growth and sexual development, while on the other, they need to adapt to the pressures and demands of the family, culture, and society in which they live. In order to separate from his parents and create independent and satisfying relationships, the adolescent must establish his own gender role that does not conflict with himself or his moral standards. As a child grows into an adult, biologically, cognitively, emotionally, morally, and socially, it is a winding road of change. An adolescent is in a transitional period between the behavior typical of a child and the behavior of an adult. Interest is growing, as is the desire to learn something new. It is important to be accepted in a group of peers, to hide insecurity, to be a responsible child to your parents, to be interesting, to experience relaxation, and to reduce boredom.

An adolescent's personality is characterized by insecurity, mood instability, lack of spontaneity, egocentrism, rebellion, conflict with authority, fear of failure, and a desire to succeed. As an adolescent, you are constantly searching for your identity. If a young person in the previous stage of development has gone through such a road that he has developed self-esteem and feels more secure, he will probably be able to achieve a stable identity. Young people can be vulnerable to using and abusing (over time) substances that can give them a false sense of security, determination, and self-confidence due to the circumstances in which they find themselves. The most common initial motives for taking psychoactive substances are: the desire to satisfy curiosity about how psychoactive substances work, the need to belong to a group, the desire to feel and do something novel, avoiding boredom, the need to escape family problems, reducing social fears and insecurities.

Around the world, researchers have been investigating risk factors for beginning and continuing drug use. Risk factors (Newcomb, 1986) can be categorized as social, family, and individual. Significant social factors for the use of psychoactive substances are the tolerance of peers of PAS, non-existence or non-compliance with norms and laws related to the sale of alcohol, the existence of an illegal market for PAS, disorganization of society, economic crisis. Significant family factors include family attitudes towards PAS - permissive, even encouraging the existence of such a model of behavior in the family, the absence or inconsistency of family rules regarding the behavior of members, family and marital conflicts, poor cohesion (lack of closeness and positive relationships). Individual factors that may affect PAS intake are physiological (possibility of genetic and biochemical markers of risk for addiction), early problematic behavior (aggression, hyperactivity in childhood, frequent negative

moods), positive attitudes towards the effects of PAS, socializing with people who use it, problems with schooling (Newcomb, 1986).

2.2 The case of Serbia

Taking a look at Serbia, from the sixties until today, there has been a constant trend of increasing PAS abuse in this country. Since the introduction of various types of drugs over the last 15 years, this trend has been especially evident. There are no precise data on the number of people who occasionally use, abuse or are addicted to psychoactive substances. It is considered that the number is not less than 25,000, and that it is probably much higher. Among the characteristics of abuse and dependence on PAS in Serbia are constant growth trend, representation in all social strata and cultural environments, use among young people between the ages of 10 and 25, and the simultaneous use of multiple psychoactive substances. Taking into account all the social factors of the last few decades - economic crisis, war, disintegration of Yugoslavia into several nation states that seriously impacted families, forced migration, disability, poverty, political turmoil, rising crime, changing value systems, dysfunction of one (not small) number of families - it could be predicted that a number of people, especially adolescents, will find the substance as a psychological crutch for fear, insecurity, a sense of meaninglessness. Also, research is increasingly talking about the connection between addiction and attempted and committed suicides. PAS youth addicts represent a risk group for suicide (Kapamadžija B, 2015).

The suicide rate of the elderly is significantly higher than the suicide rate of young people. However, if we compare the suicide rate of young people with the total mortality rate, we get worrying data. The suicide rate of young people in relation to the total mortality of this age group in the last 20 years ranged from 10.20% to 11% (Dragišić-Labaš, 2018). The research done at the Institute for Neuropsychiatric Diseases „Dr Laza Lazarević“ indicates that suicide attempts are often related to alcoholism, acute intoxication, abuse of opiates, amphetamines, and other psychoactive substances (Dragišić-Labaš, 2018). The question is how many young people committed suicide under the influence of psychoactive substances, if we know that a significant number of young people who attempted suicide were under the influence of alcohol and drugs.

Passers-by were asked what they thought was causing youth in Serbia to use drugs more and more, and here are some of their answers.

- „That pleases them. The state is a disaster in itself, let alone the state of society.“
- „Here in Belgrade, there is more cash than in the surrounding areas, and then it all took off. It is really cheap to get it. You can get some light drugs, such as marijuana, for 300 dinars (2.5 euros). I heard that Obrenovac is the cheapest city in the whole world for marihuana.“

- „They don't know what to do, so they have to settle for something. The state is to blame for that.“
- „Why? That's kind of an illogical question to me. They run away into illusions, they create a new world for themselves.“

Neuropsychiatrist Stevan Petrović, a former doctor of the Military Medical Academy who treated drug addicts for forty years, says that there are data according to which ninety percent of all young people in Serbia have tried marijuana, while between seventy and eighty percent have had some experience with heroin (Petrović, 2006). Petrović also said that one of the most important reasons for the growth of this problem is the state of society, i.e. the poverty and lack of perspective faced by the younger generations:

„They are constantly unsatisfied, unhappy, depressed... They struggle to find values, they lack role models, especially positive ones.“ Most importantly, young people do not have the support of their families, especially their parents, and feel isolated, abandoned, and rejected. As a result, there was a moral collapse and a breakdown in traditions. People are simply looking for so-called 'instant' pleasures - instantly, now and here, and only drugs can give them that (Petrović, 2006).

According to a survey conducted in 2000 by the Institute of Public Health students of the University of Belgrade (IPH, 2000) on a sample of 12,000 respondents from all over Serbia, via a standard WHO questionnaire (used in 28 other countries in Europe), about 10% of adolescents aged 13 to 15 have used or abused drugs. Among respondents, marijuana was used by about 5%, hashish and cocaine by about 1%, another psychoactive substance by about 1.2%, and a combination of more PAS by about 1%.

3. RESEARCH QUESTION

Researchers have argued, despite controversial and not always empirically confirmed claims, that family environments play a crucial role in the emergence, development, and maintenance of substance abuse. It plays an equally important role in attempting to become free from use and abuse. The possibility of therapeutic success is also tied to the cooperation of this environment, as evidenced by therapeutic conceptions in this area. Considering this, I hypothesized that *low family social capital and family participation in adolescent's life would be associated with higher adolescent substance use.*

4. METHODOLOGY

The purpose of this paper is to build a more detailed understanding of do and how family factors link to adolescent psychoactive substance abuse. This is done by providing a study case in attempt to test our hypothesis. In this case

study, we are specifically looking at Serbia as a country and adolescents who tried, used and abused PAS as the subjects of the examination. There are a number of factors from various aspects being considered in selecting Serbia as a study case. We're talking about a country that has experienced economic crisis, numerous civil wars, forced migrations, poverty, political turmoil, and a dramatic change in value systems, all of which easily led to dysfunction in the family with adolescents. Furthermore, parents are not generally aware of the possible consequences of drug use, or adolescents do not know how to seek parents' help because they feel ashamed, regretful or afraid. It is therefore reasonable to examine the experiences of adolescents in Serbia when studying this particular topic based on all of these factors.

Sample description. There were 218 respondents examined in total. A total of 33% of women and 67% of men were included in the sample. 52% of respondents were from Belgrade, 10% from Vojvodina, 24% from Central and Western Serbia, and 13% from Eastern and Southern Serbia. Respondents are on average 23 years old. A convenient sample was chosen for this study because of the specificity of middle adolescence, when a person's view of the world is intensively developed, his or her intellectual, emotional, moral, and social maturity is attained, and the parent-child relationship changes qualitatively.

Questionnaire and instruments. A total of 16 questions were asked, and the average time taken to complete the questionnaire was five minutes.

The procedure. The research was carried out in October 2022. In order to collect data, an online survey was used. In order to analyze the data, IBM SPSS software was used.

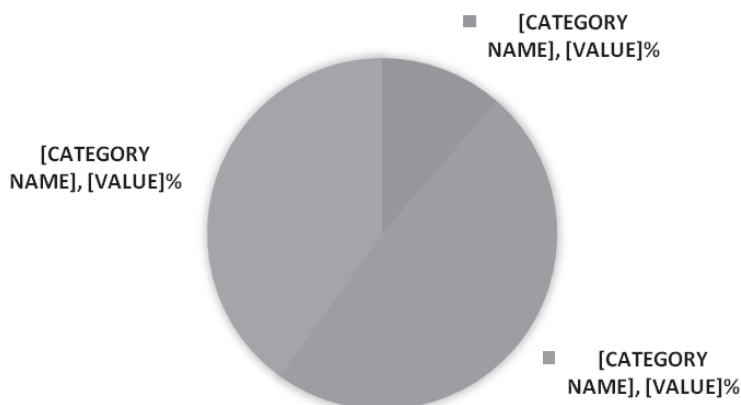
5. RESULTS

5.1 Family social capital

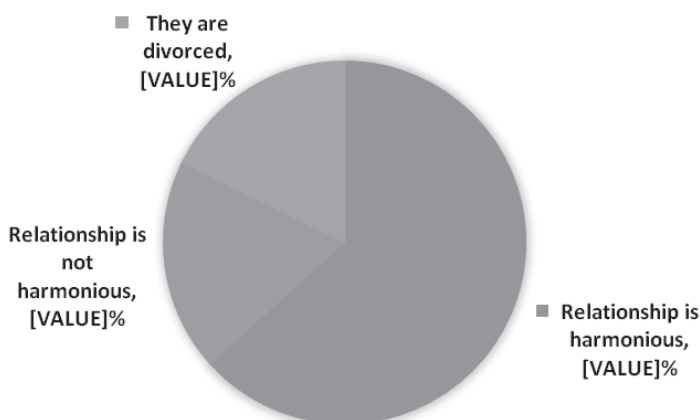
As we know, individuals can benefit from social relations in many different ways, including material or other benefits and when we are talking about family, it encompasses a wide variety of social capital, such as communication with parents and family who provide advice, help, and support, as well as participation in a variety of activities and healthy and adult relationships, all of which enrich social networks. A key contributor to the development of social capital discourse within the family environment was Coleman. According to him, family social capital serves the function of making parents' human capital available to children. This depends both on the physical presence of adults in the family and on the attention given by the adults to the child (Elena Carrvillo-Alvarez, 2016). A similar concept is also invoked by Bourdieu, who describes social capital as another form of capital (along with material and cultural capitals), which enables families to manage their material and symbolic resources successfully for the benefit of their members

(Furstenberg, 2004). In Coleman and Bourdieu's view, social capital is the means through which children access parental human capital. In the case of Coleman two dimensions are distinguished, one referring to the structure and another to the function: high family social capital entails not only the physical presence of adults in the household (e.g. two parent households, i.e., the structural dimension), but also the presence of supportive interactions between parents and their children (which does not always exist even if the parents are physically present, namely, the functional dimension) (Elena Carrillo-Alvarez, 2016).

Our first part of the questionnaire focused on family relationships, in order to determine respondents' family social capital. In spite of the fact that 48.6% of respondents said that the family relationship is good, or 40% of respondents even said that it is very good, we can see in Graph 2 that 19% of respondents said that parent's relationship is not harmonious, and 17.7% of them have divorced parents.

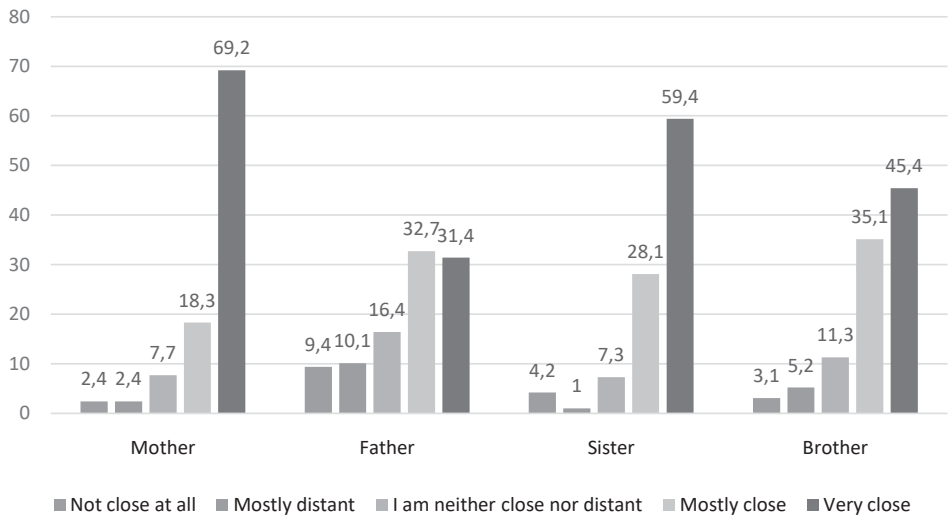


Graph 1: How would you describe the relationships in your family?

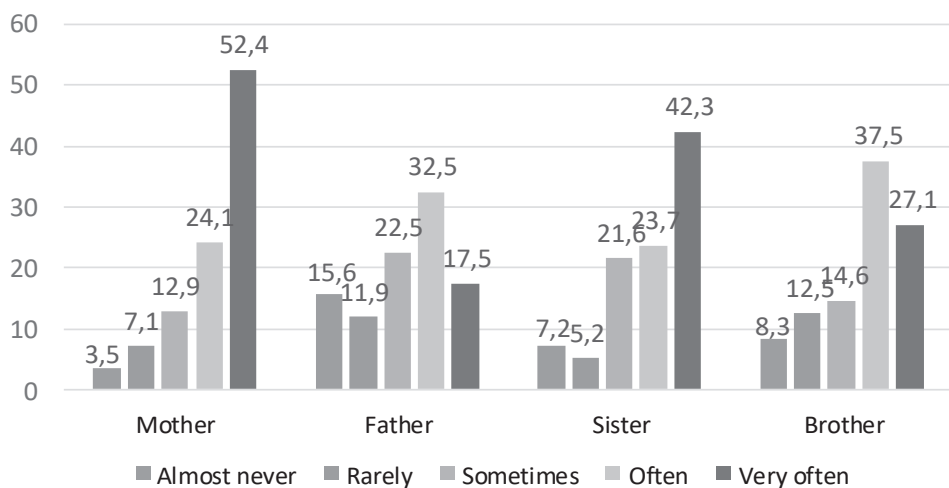


Graph 2: How would you describe your parents' relationship?

Strong bonds and positive relationships in the family provide adolescents with a sense of security, love, and in addition, a higher level of family social capital. As a result of such relationships, families are able to resolve conflicts, work as a team, and enjoy one another's company. Quality time spent together, communication, teamwork, and respect are the foundations of positive family relationships. I wanted to find out how our respondents would describe their relationship with family members, and I got the following results: as shown in graph number 3, as many as 69% of respondents have very close relationships with their mothers, and also it is more likely they are going to talk about important things in their life (Graph 4). And we can say that there is a valid reason for this because mothers tend to be seen as the primary objects of attachment, and the attachment that develops between mother and child will strongly influence the adolescent life of that child. Even though relationships with parents become strained in adolescence, adolescents tend to have a closer relationship with their mothers than with their fathers. Among the reasons why this is so, according to a study, mothers are more likely to accept them than fathers. And we are able to see that this was also confirmed in this study, because the number drops significantly when it comes to relationships with fathers. Specifically, every third respondent identifies his relationship with his father as very close or mostly close. Even lower numbers are found when it comes to adolescents' openness about important things in their lives. Graph 4 shows that that number is 17.5%, which is a lot lower compared to the relationship with the mother. The figures are also interesting when it comes to relationships with siblings: every second respondent has a very close relationship, or more precisely, every third person has mostly close relationships, but when it comes to the important things in life, respondents mostly rely on sister 42.3% compared to the brother, where that number is somewhere above 27%.



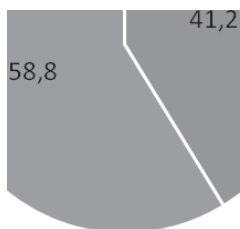
Graph 3: How would you describe your relationship with family members?



Graph 4: How often do you talk with these family members about topics that are important to you?

5.2. Usage of psychoactive substances

The survey results show that 41% of respondents have had experience with psychoactive substances at least once, which is almost every second respondent (Graph 5). Given that the average age of the respondents is 23, these are really high numbers.



■ Yes ■ No

Graph 5: Have you ever tried psychoactive substances?

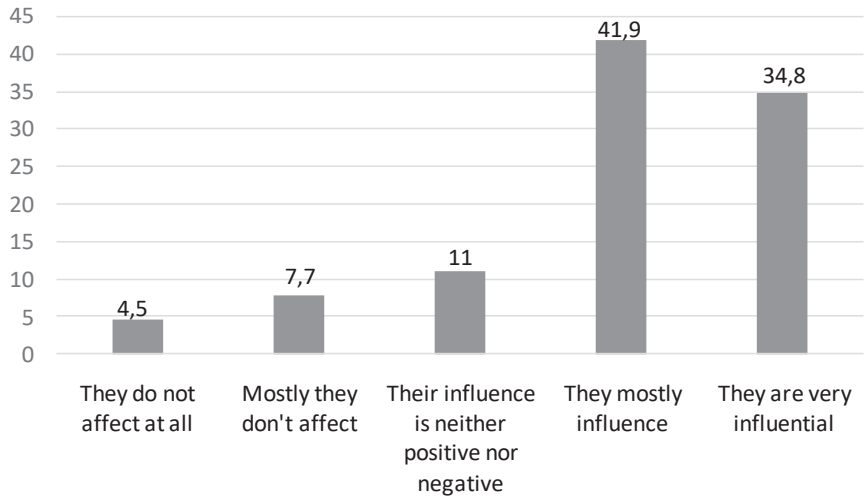


Yes ■ No ■ Not sure

Graph 6: Do you think family relationships have influenced your use of psychoactive substances?

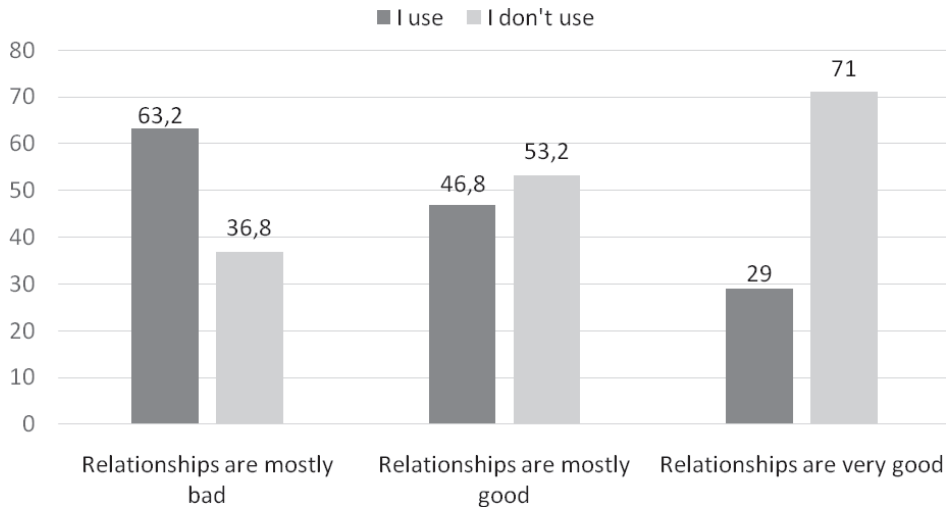
I wanted to delve deeper and find out if family relationships have influenced respondents' use of psychoactive substances, and I did get these results: 18.8% of them said yes, and 6.2% are not sure or didn't want to answer.

Additionally, I asked respondents whether they believed family relationships could influence the use of psychoactive substances. The data shows (Graph 7) that a large number of respondents think that family relationships are either very influential – 34.8%, or that they mostly influence 41.9%.



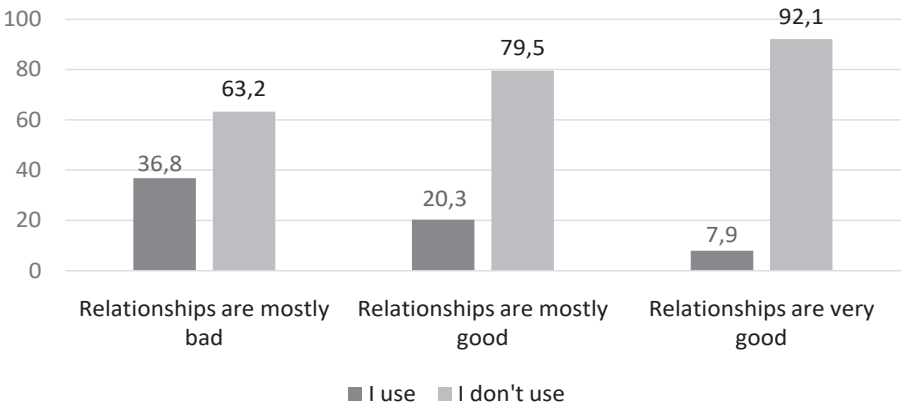
Graph 7: In your opinion, to what extent do bad family relationships influence the use of psychoactive substances among young people?

Again, this demonstrates the importance of family social capital, that if the child does not grow up in harmony with his parents, and if family relations are poor, he is more likely to use psychoactive substances. In order to find out to what extent, I compared the following data, represented in Graph 8: first, I wanted to find out how much family relationships influence adolescents to consume psychoactive substances. Data show that as many as 63.2% of respondents who have problematic family relationships have tried psychoactive substances. Also, that number drops to as much as 29% if family relations are very positive, or more precisely, every other respondent who has good family relations has at some point tried psychoactive substances.



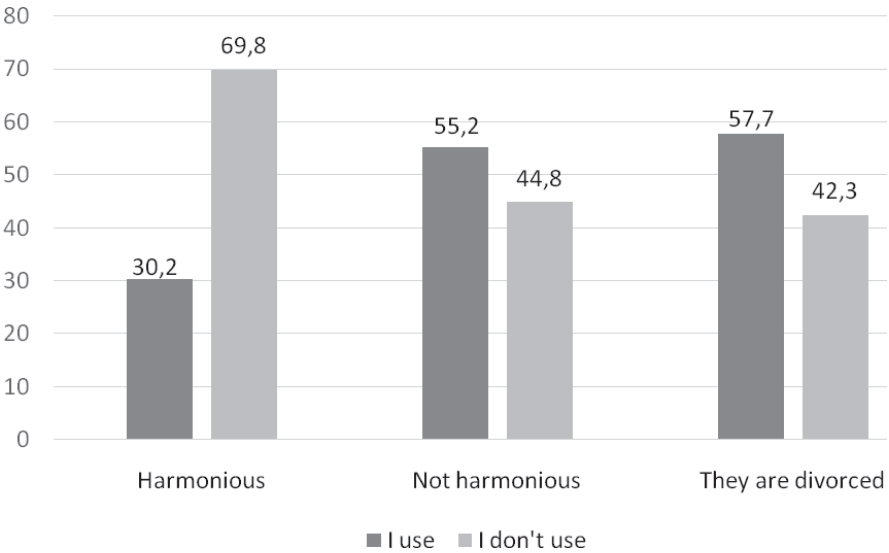
Graph 8: Family relations and the use of PAS

Secondly, I also wanted to find out how much adolescents who regularly use psychoactive substances think that their family relationships have influenced it. The data show (Graph 9) that the probability of regular use of psychoactive substances among adolescents in bad family relationships is as high as 36.8%, in contrast to situations where family relationships are very good, where this figure is 7.9%

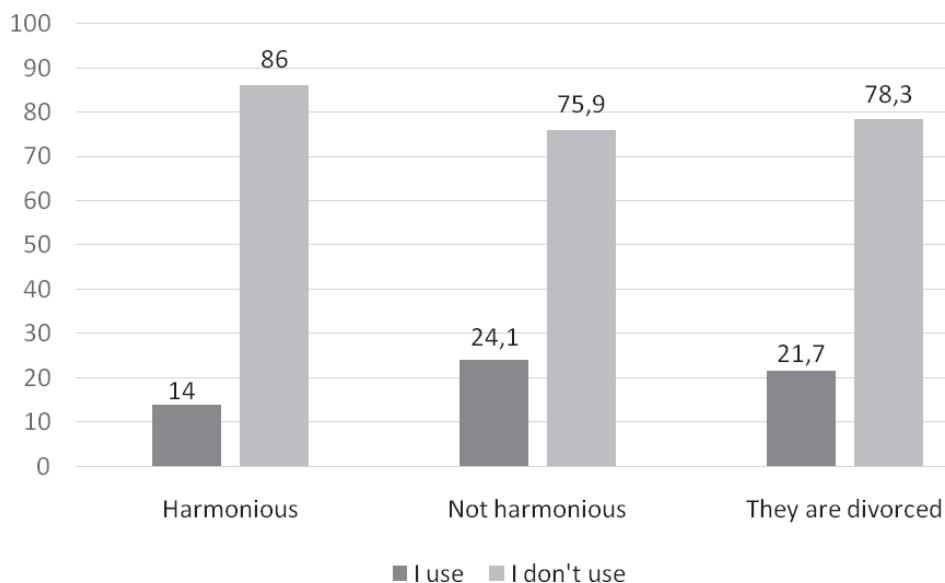


Graph 9: Family relations and the regular use of PAS

The following results were obtained from an analysis conducted to determine whether there is a relationship between poor relationships between parents and the use/regular use of psychoactive substances: more than half of respondents with divorced parents have acquired psychoactive substances (Graph 10). More specifically, 21.7% of respondents in this family situation regularly use psychoactive substances (Graph 11).



Graph 10: Relationships between parents and the use of PAS



Graph 11: Relationships between parents and the regular use of PAS

6. CONCLUSION

When the parent-child relationship changes during adolescence, the way in which the parents function is especially evident, as is also a difference in seeing those relationships from the perspective of the adolescent and the perspective of the parents. Although the influence of peers in this period is explicit, research (Zuković S, 2015) consistently shows that parents continue to play a vital role in a young person's development, both directly - as a model for identification, and indirectly - as a source of emotional support.

The obtained results showed that, as it was assumed, family factors strongly influence not only adolescent development but also the use/abuse of psychoactive substances. In the study, I found a direct relationship between low family social capital and family participation in an adolescent's life and higher substance abuse among adolescents. The main family factors of drug addiction, according to the results obtained, are family atmosphere, the strength of family ties, a sense of family happiness, the structure of authority in the family, and no support. There is a lack of emotional closeness and contact in the families of PAS users. The family ties of PAS users are weaker, and the percentage of support from the family is low. The results of the investigations approximate the results of other studies conducted among young people in Serbia and elsewhere in the world. There is a high positive correlation between family risk factors and use/abuse of psychoactive substances in almost all examined cases.

Professionals from both the international and national communities are interested in how to deal with the problem of drug use and abuse among young

people. Many ways to combat drug abuse involve reducing demand and availability, as well as reducing harmful consequences. It is vital to raise awareness among young people about the harmful effects of drugs, identify and provide adequate treatment aimed at detoxification and treatment of young people with addiction problems in order to reduce demand.

As mentioned, drug abuse is a complex phenomenon, the explanation of which includes the factors of the macrosocial environment, the family as a mediator, as well as personality characteristics. Thus, if we really want to resolve this problem in an appropriate manner, intensive work on limiting availability is necessary, which certainly opens up the problem of corruption. Addiction problems among young people must also be addressed by encouraging the family and the environment to provide help, because they most certainly represent the "safe zone" for adolescents.

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Теодора Г. ДЕЉАНИН

УДРУЖЕЊЕ НИСКОГ СОЦИЈАЛНОГ СТАНДАРДА ПОРОДИЦЕ И УЧЕШЋЕ ПОРОДИЦЕ У ЖИВОТУ АДОЛЕСЦЕНАТА КОЈИ КОРИСТИТЕ ПСИХОАКТИВНЕ СУПСТАНЦЕ

Резиме

Злоупотреба психоактивних супстанци прелази у све млађе старосне групе, сходно своме расту и зависности. У Србији је злоупотреба супстанци међу младима достигла тако високе размере током последње деценије 20. века и још увек је распрострањена. Зато Влада мора да национални програм превенције зависности стави као „главни приоритет“. Комбинација друштвених фактора (економска криза, политичка превирања, присилне миграције, незапосленост, итд.), с једне стране, као и нефункционисање низа породица и појединачних фактора, с друге стране, може довести до осећања несигурност, страха и бесмисленосту у младом уму и отуда потреба да се ови проблеми „реше“ употребом једне од психоактивних супстанци. Последњих година истраживања све више показују да млади људи и њихове породице нису свесни које врсте психоактивних супстанци су доступне младим људима, могућности њихове употребе, те како изгледа и понаша се особа под утицајем психоактивних супстанци, као и озбиљних психолошких и соматских последица њиховог конзумирања. У последњој деценији учињени су први кораци у погледу истраживања овог проблема у Србији. Међутим, недостају озбиљна фундаментална истраживања овог значајног друштвеног проблема и на основу тих резултата предузимање целовитих примењених истраживања која би била од помоћи у креирању и спровођењу националних програма за превенцију болести зависности, односно укључивање породица у те програме.

Кључне речи: Злоупотреба супстанци, зависност, млади, ефекти злоупотребе психоактивних супстанци, породични друштвени капитал, породични фактори.

*Alojz A. RIEGLER**

RIAL-Planungsstudio, gew. Arch. BM Ing

THE GREEN CITY – PREVENTING OVERHEATING NATURALLY

Abstract: Many factors are responsible for the steadily progressing climate change, including rising greenhouse gas emissions, deforestation of rainforests, pollution from industry and traffic or overexploitation of Mother Nature. The consequences are far-reaching and dramatic. We must act and start where many people live in a confined space: the cities - the most affected places.

Cities are those places that can and will have to implement climate change adaptation and avoidance measures more flexibly in the future. Cities in particular, where a large number of people live in a very small space, will be exposed to greater risks from climate change. In this scientific work, we deal in detail fundamental research with the construct of the city, because cities are the essential living and design spaces of today's society.

In them, the most diverse tasks lie close together in the smallest of spaces. Here we focus on Austrian cities, where we take a closer look at the currently prevailing climatic conditions and especially the heat stress. We also list measures to reduce heat stress. Our main focus here is on greening measures, such as roof, facade and route greening.

Measures and i fundamental projects that are already in progress and those that are in the planning stage are worth mentioning. In the climate change adaptation measures for a city worth living in, we get together with various stakeholders who are actively committed to reducing urban heat islands. We continue to focus on urban greening measures.

Key words: greening, city, climate change, habitats, greening measures, green roofs, green facades, green terraces

INTRODUCTION

More than half of humanity lives in cities, the forecast for 2050 says that 70% will be at home in urban areas. A prediction that is worrying because too many people live in too small a space. This space may or may not be livable. Climate change is having an even greater impact on life in cities: Temperatures continue

* By Dipl.-Ing MSc Alojz Riegler, Chief Executive Officer / Knight Commander LJ, studio@rial.at

to rise, extreme weather events are becoming more frequent and flooding is a further consequence of sealed soil. Something needs to be done urgently - adaptation strategies and climate change-friendly urban planning must and should be used now, because people will continue to move to the cities and the number of residents will continue to increase.

This work deals with local and regional aspects. The summers in the cities are getting hotter, periods of heat are lasting longer than before and tropical days and tropical nights are no longer uncommon. The result is that the heat is stored in the materials and heat islands form as a result. The urban heat island heats up like a tiled stove and only releases the heat to the environment at night.

People can no longer recover at night and heat stress arises. Important aspects here are therefore temperature, radiation and heat stress. That is why we deal with urban climatological and bioclimatological elements in our paper, because on the one hand we examine the effects of heat on people and on the other hand we look at what countermeasures cities can take in this regard. The sustainability aspect is also a key element here.

The greatest challenge of the 21st century will be that cities remain livable and that people do not suffer any damage to their health from the extreme heat. The focus here is on potential greening measures that have local and regional effects. The aim of our work is therefore to convey to people in general and also to the inhabitants of the cities that you can do a lot for your city through commitment, initiative and participation in greening projects. Furthermore, we want to show that many projects in this regard are carried out in cities that are effective and will be indispensable for the future of the city worth living in.

1 THEORETICAL PART

1.1 The global responsibility of cities

No previous scientific discipline can raise the objection that its model completely depicts the highly complex “city” system with all its characteristics and characteristics. To date, there is no comprehensive city theory that could be used to calculate its development in all scientific matters. Cities can be explained historically in hindsight, but it is not possible to forecast their future developments in detail in advance.¹

1.2 Greening in the city as a climate change adaptation measure

According to researchers, the general warming of the climate is considered certain, even if there is still no agreement on the specific effects. Researchers largely agree on the most important cause - the release of excessive amounts of greenhouse gases such as carbon dioxide (CO²) and methane.

There are two main strategies to respond to these findings:

1 Vgl. Klotz et al. (2002), 118

- Attempts are being made to bring about a reduction in greenhouse gas emissions, in order at least to slow down further warming;
- One adapts as far as possible to the consequences of global warming.²

Cities as human habitats are created by people. They can be changed, redesigned in a way that is friendly to nature and people, not only by the municipal government or institutions, but also by the residents themselves. Using the example of urban greening, these transformations can range from the window sill to the sealed courtyard, where different types of greening can be attached. A necessary prerequisite here is ecological urban planning.

This also includes, for example, the need for car parking spaces not to be further expanded, but instead replaced or unsealed. However, as already mentioned, the initiative of the city dwellers is just as important, because they have endless and often unused opportunities to adapt to climate change - be it on the balcony, on the roofs, on the house facade or courtyard wall, on streets or sidewalks or in the inner courtyards - In all these places, personal initiative is possible to make the city even more livable as a place to live.³

1.3 Urban climatology

It is now known that the climate in the surrounding area differs greatly from that in the city, which is why it is also referred to as a so-called urban climate. The climate in open landscapes is strongly influenced by natural conditions, in the cities we tend to speak of a climate that is strongly influenced by buildings. The urban climate is a climate modified by interactions, which can be attributed to the development and the subsequent effects. In general, cities are...

- weak wind: is mainly due to the buildings, they have an influence on the wind field, the wind direction and the wind speed. The roughness reduces the wind speed, which also has an effect on the area above the building and as a result, the removal of air pollutants no longer works. In addition, the wind speed also has a major influence on the temperature, which is why optimal ventilation for the climate and air hygiene are important.
- warm: what is meant is the heat island effect that forms in densely built-up buildings and heavily sealed areas. The greatest temperature differences between the surrounding area and the city are not recorded during the day, but at night, differences of up to 10 degrees can occur here. During the day, surfaces heat up too much, the heat is then stored in these materials and released into the natural environment at night. Natural cooling fails and heat stress occurs.
- dry: the air in the cities is significantly drier than in the surrounding areas. This condition is particularly noticeable at night when dew and fog do not form. The reason for this is the increased air temperature in the cities.

2 Vgl. Hutter et al. (2012), 263

3 Vgl. Niemeyer-Lüllwitz et al. (1994), 6

- and fine dust pollution: the combination of motorized traffic and industrial production results in increased fine dust pollution. In cities, this releases large amounts of carbon dioxide, resulting in bad and unhealthy air for people and the environment.⁴

Reasons for these conditions are above all a high density of buildings and the height of the building, which represent flow obstacles and lead to a very low reflection of the sun's rays. The urban climate is strongly influenced by the size of the city, the shape of the terrain, the building structure and the proportion of open spaces. However, the urban climate continues to be negatively influenced by the advancing climate change and the constant pressure to build new buildings. The figure below shows how an urban climate is composed. The combination of the individual elements differs from city to city. The larger an urban area is, the greater the impact and influence of other factors such as geographic location, proximity to bodies of water and landscape topography.⁵

A major factor that plays into the issue of urban climate is the health component, which is getting worse and worse due to the increasing bad air and rising heat. City dwellers have to cope with new health burdens. A lack of shady spots aggravates the situation in the cities and the quality of life continues to decline. Furthermore, the number of heat deaths continues to rise. The increasingly poor air quality promotes respiratory diseases, which in the worst case can end in cancer.

1.4 Bioclimatology

This is the effect of climate on human life. It deals with connections between weather conditions and various life processes. This is about human health, which is why bioclimatology is often understood as medical climatology. Other important areas are, on the one hand, residential and building climatology, dealing with climatic conditions within a room or building, and, on the other hand, agricultural climatology, which deals with the bioclimate of plants.

The microclimatology and the local climate influences are of great importance for these respective areas. Included are above all the influence of radiation, air currents such as the foehn, humidity and its effects on plants, people and animals and also the adaptation of living beings to new climatic conditions. The organism is influenced by the climate in a variety of ways, the more the climate changes, the greater the influencing variable and the signal in the body.

The stresses caused by heat will double in the future, while the stresses caused by cold will decrease. Furthermore, heat waves, hot days, tropical nights and strongly fluctuating temperature changes, which are also associated with higher biotropical pollution, will continue to increase.⁶

Changes and fluctuations in climatic conditions are also associated with various diseases and stresses on humans. We are talking about sensitivity

4 Vgl. Baumüller (2014), 1-6

5 Vgl. Wypych (2007), [online]

6 Vgl. Mörikofer (1959), 33-35

to the weather or the weather, which are disturbances to one's own well-being. Weather elements, such as air pressure, temperature or humidity, reach every part of the human body. The most affected areas in the human body are the respiratory organs, the skin, the central nervous system, the nose and also the eyes. Furthermore, the weather sensitivity of humans can be divided into two groups:

- Weather reactants: In this group, people can optimally adapt to changing weather conditions. Usually no discomfort is felt here.
- Weather sensitive: People sense when the weather changes. Reactions of the body are headaches, malaise, sleep disturbances, tiredness, palpitations and high blood pressure.⁷

1.5 Future Risks

“The environment is increasingly showing the limits of human activities. There are circumstances where the benefits gained cannot outweigh the damage to the environment. The ability of the environment to provide us and future generations with resources, to provide us with vital functions such as protection from radiation or constant temperature maintenance is indispensable. Without clean air to breathe, fertile soil, clean drinking water, or a healthy ozone layer, we cannot consider any other benefits as a substitute for harming our own livelihoods.”⁸

1.6 Sustainable Building

Why has sustainable development in the construction and real estate industry become so important and necessary? – The fact is that 50% of all naturally occurring raw materials are used for the construction industry. In addition, the construction of buildings consumes a lot of energy, 40% of all energy consumption (heating, hot water, cooling) goes into it and more than 60% of waste comes from this sector. As a result, “sustainable building” has long since established itself as an important term. Buildings have a very long lifespan and can do a lot to combat climate change. On the one hand it is about building new buildings sustainably and on the other hand we face the big problem that we have to protect the existing ones from the consequences of climate change. Appropriate measures during construction can prevent damage and make a valuable contribution to the necessary climate protection. Examples would be the lowest possible degree of sealing on the property or attaching green roofs and facades to the building.

1.7 The urban heat island

The heat island, a typical feature of the urban climate, is caused by the interaction of different effects and falls within the thermal range of a city. The air temperature, humidity, wind speed as well as short- and long-wave radiation are included here. A heat island is created by storing the sun's rays on sealed

⁷ Vgl. Quell (2010), [online]

⁸ Klotz et al. (2002), 77

surfaces or on buildings. Furthermore, this is further reinforced by a lack of green spaces, dense development, low air circulation, the additional release of anthropogenic heat and reduced radiation of long-wave radiation between the buildings. Above all, the materials concrete, glass, asphalt, steel contribute to formations.

Another important point is the waste heat from people, which is caused by using cars, heating rooms or air conditioning. A heat island is an island-like overheating surrounded by a much colder environment. Most of the effects are felt at night when the heat stored in the materials or buildings is released back into the environment.⁹ As a result, there is no natural cooling at night, there is no recovery and people are in what is known as heat stress.

According to Hupfer and Kuttler (2006), an urban heat island is "... an overheating that stands out from the cooler surrounding area, usually occurs in an island-like manner, the intensity of which is indicated by the horizontal positive temperature difference between the city and the surrounding area or is described by a distance-related horizontal temperature gradient..."

Basically, this expresses the fact that the term urban heat island means a temperature gradient between urban and rural areas. Attention must also be paid to the temporal, i.e. annual or daily, and also to the spatial components of urban heat islands.

The urban area can be 4-10°C warmer than the surrounding country, in extreme cases there can even be differences of up to 15°C. Such strong effects are mainly due to the topography and structure of a city. Other influences that cause urban warming can be divided into meteorological, geographic and urban categories.

1.8 Heat traps in cities

In large cities and densely populated areas, heat stress is particularly great, the formation of heat islands is increasing drastically and pollution levels are increasing immeasurably. This phenomenon is further exacerbated by the decrease and obstruction of green spaces and the increasing production of waste heat through industrial processes, the purchase of countless air conditioning systems and the high level of individual motorized traffic. There is also surface roughness, which increasingly leads to a reduction in wind speed. Many types of building also mean that cold air currents can no longer penetrate into the centers from undeveloped surroundings.

Isotherm maps can provide accurate information about heat loads in urban areas. These maps differentiate between the so-called "hot points", which primarily include sealed areas (car parks, industrial and commercial zones, asphalted inner courtyards, dark facades) and the "cold points", such as parks, areas with water or green areas or towns, where there are a lot

9 Vgl.: Zamg (2015), 6

of trees. In principle, however, it can be assumed that there will be an increase in heat from the outskirts towards the city centre.¹⁰

1.9 Sealed floor

Our soil has many useful functions, it regulates important cycles, it filters harmful substances and is a necessary habitat for organisms. In addition, it also offers space for the production of our food and it is a carrier of our infrastructure. Since the soil connects with the water and the air, a significant ecosystem is created.¹¹ But in many cities there is not much left of this important ground, it has disappeared due to parking lots, streets and concreted areas and has become unusable.

The soil has therefore long been an asset worthy of protection. The constantly increasing use of land by new businesses, residential areas or industries is bad for our climate development and, above all, animals and plants are increasingly being deprived of their living space.

Floor sealing means covering the floor with a layer that does not let water through. The soil is thus reduced to a support function, the natural functions are completely lost. Completely paved floors are areas on which buildings have been erected, but also undeveloped areas that have been sealed with concrete, asphalt or paving stones. This includes, among other things, paths, operational areas, roads or even driveways. Calculations show that for the area of Austria there is a total sealing of 41.2%, which is used as residential and traffic areas.

1.10 Consequences of urban warming

Urban warming has a wide range of strong effects on our society and the residents of a city, which can be named positively or negatively. We can see positive effects in the winter months, as the higher temperatures in the cities, caused by the heat islands, greatly shorten the frost periods. The number of frost and ice days is therefore also shorter.

Since we are also in the time of climate change, this effect is further intensified. Furthermore, the demand for energy is reduced because heating is required on fewer days, which has a positive effect on the environment. In the hot months, urban warming is a big problem and people suffer from health problems. The high temperatures and long periods of heat mean that people suffer from heat stress and become physically and mentally ill.

You can no longer find relaxation in the cities, the sealed areas mean that important shaded areas are missing, and the residents are at the mercy of the sun. The quality of life is greatly reduced, because even the buildings that are intended for retreat are overheated by urban warming, the heat is stored in the walls and passed on to the interior. Furthermore, a connection can be made between severe heat stress and mortality or morbidity rates.

¹⁰ Vgl. Lükenga (1987), 267-270

¹¹ Vgl.: Unverwechselbares Graz (2017), 16

2 MEASURES TO REDUCE URBAN HEAT ISLANDS

2.1 Green and open spaces

The construction boom is increasingly crowding out important open spaces and green spaces in the cities, which are important places for recreation, encounters, integration and are important for climate protection and health. They are havens to escape the heat on hot summer days. In order to continue to maintain green spaces or to create new ones, areas must be protected from building, these areas can be regulated via the zoning. They have a positive effect on the bioclimate because they bind air pollutants and dust, balance the temperature, increase the humidity and exchange the bad air.

Furthermore, green areas are an important habitat for animals and plants, which are further displaced by the sealing of the areas. Flood protection is also positive, since green areas allow water to seep into the ground, thereby avoiding flooding. Green areas are of particular importance for heat stress, because green areas have a very low heat capacity and therefore have a strong cooling effect, since such areas, in contrast to sealed and dark areas, heat up only very poorly.

Another important point is the potential for evapotranspiration, which is much higher than sealed and artificial surfaces, such as asphalt or concrete, because the water stays in circulation much longer.

Due to the increased evaporation potential, the temperature in green areas is much lower than in areas covered with concrete. The term "green space or green space" can be interpreted very broadly, in principle it is all undeveloped surface structures, which makes it difficult to determine the exact effectiveness with regard to the thermal conditions. Different characteristics of green spaces also have different effects in terms of heat capacity, runoff behavior and albedo values.

For the effectiveness of green spaces, the size, the water supply, the variety of vegetation and the structure are decisive. In terms of thermal effects, large green areas also have a greater range than smaller systems. In addition, not only the quantity is important, but also the quality plays a central role here. The type of green space determines the extent to which green spaces improve a city's radiation and heat balance.

Basically, green spaces have two positive effects on the reduction of urban heat islands: On the one hand, they cause low and cool surface temperatures, and on the other hand, they greatly increase the potential for evapotranspiration.¹²

2.2 Creation of Parks

An important point for green space planning is the creation and maintenance of parks in cities, whereby the size, location, orientation and quality of the plants also play a central role here in order to be able to counteract

12 Vgl. Tiller (2015), 37-39

the heat island effect. The suitable location for the construction of parks can be included and taken into account in urban planning, especially in the case of new constructions.

However, since the heat accumulates primarily in densely populated areas that have little space for green spaces, choosing a favorable location is difficult. In these densely built-up areas it is therefore all the more important to preserve and care for existing green spaces. When creating parks, the quality of the site is also important, as shrubs and trees are preferable to grassy areas as they have a greater effect in reducing heat stress and also provide shade.

Since, as already mentioned, there is a lack of space in cities, selective planting can also have an effect. We are talking here about courtyard greening, greening of squares or even railway tracks. Here, too, securing open spaces is an important point for sustainable urban planning.

Ideally, however, the location should be chosen so that there is a connection to other green areas so that the heat can be optimally reduced and the range of the cooling can be increased. Regarding the size of the parks, investigations have shown that cooling effects can be achieved for the area from a size of 2.5 hectares.

If we have a size of about 50 hectares, then a long-distance climatic effect occurs. However, the range also depends very much on the respective environment, whether there are green areas nearby or not. Unfortunately, the penetration of the important cold air is usually prevented by walls, high buildings or house fronts. Orographic conditions, for example the location in a hollow, also play a central role.¹³

2.3 Shading by trees

Shaded areas can be created to reduce urban warming from direct solar radiation, and the incidence of solar radiation can be reduced by shading. Here a distinction is made between shading by trees or artificial materials. A very popular measure is the planting of trees, because on the one hand they provide a lot of shade and can create places of refuge for people in the heat and on the other hand they have a very strong aesthetic component that they fulfill in urban spaces.

From a thermal point of view, trees contribute to a reduction in urban heat islands through the shadows they cast. The size and density of the tree crowns play a central role here. The larger a crown, the more shade and cooling the tree can provide.

The cooling effect of trees is 80% due to shadows cast and 20% to evapotranspiration. It is also important here that cold air currents are kept free, as trees are also becoming an increasing obstacle to the wind. Ideally, tall, large-crowned and dense trees should be planted, which have a cooling effect in summer and let the sun's rays through in winter due to the lack of leaves.

13 Vgl.: Tiller (2015), 42-3

3. URBAN PLANNING MEASURES THAT RESPECT URBAN GREEN

The positive influence of street trees, green spaces and parks has been well researched. Among other things, they ensure better air quality, lower temperatures on hot summer days and better cooling at night. A large Spanish research project involving over 2,500 primary school children over a period of one year has produced amazing results.

The greener the living or school environment and also the way to school, the better the children's attention and memory performance. Even if the results speak in favor of more greening in cities, other factors should not be ignored. This includes, for example, that families with better education and higher income usually live under favorable social conditions and these children grow up in less disadvantaged urban areas with more green space.¹⁴

3.1 Green roof

With regard to roof greening, two types of greening can be differentiated: on the one hand, there are extensive greenings, and on the other hand, there are intensive greenings. These differ in terms of investment costs and maintenance costs. In general, the majority of flat roofs can be greened. Protecting the waterproofing against possible damage from penetrating roots is essential.

With a layer of gravel, extensive greening is usually the most efficient.¹⁵ Most frequently, however, the water balance in green roofs is regulated by applying certain substrates. These substrates are a special mixture of humus and mineral builders, which are necessary for the soil structure. They can absorb and release water very well and are well suited for long-term planting on a roof. Problems with flat gravel roofs often occur when exposed to high heat and heavy rain, which can be avoided with the substrate, depending on the depth of the layer.

3.2 Facade greening or so-called "vertical gardening"

Urban centers are currently actively looking for areas where plants can be planted. A major reason for this is to curb the carbon dioxide produced by traffic and heating. In the 1970s, a new movement called "Green Architecture" began to emerge.

It was defined by the fact that a strong element of fine arts was integrated into the architecture, which focuses very strongly on the ecological aspect. Early architectural designs, such as that by James Wines in 1981, called "High Rise of Homes" proposed a vertical structure, with each floor containing a dozen small houses, each in its own style and with its own private garden.

This idea of verticalizing village-style architecture was continued twenty years later by Edouard Francois with his so-called "Flower Tower" and actually

14 Vgl. Adli (2017), 212-213

15 Vgl. Stadt Mannheim (2016), [online]

implemented in Paris. This project gave each resident the opportunity to live in the same conditions as usual, namely in their own small house with a garden. Originally, the idea of the vertical garden was based on the one hand on the fact that certain plants, such as epiphytes and parasites, were not dependent on the soil and on the other hand on the fact that this autonomy could be applied in practice to urban architecture.¹⁶

3.3 Green courtyards

Many urban courtyards are in a state that does not invite you to linger. There are often carpet rods, garbage cans and bicycles on all-round sealed surfaces. Especially on hot summer days, however, the advantage of a green courtyard instead of a sealed one is clearly noticeable.

On the one hand, green inner courtyards offer the residents peace and quiet from the traffic noise, on the other hand, a refreshing, forest-like climate is created simply by a larger tree in the inner courtyard. For example, a linden tree evaporates up to 500 liters of water every day, thus causing the temperature in its immediate surroundings to drop.¹⁷

3.4 Avenue trees and parks

Larger green areas from 1 ha upwards are referred to as parks. They are characterized by lush vegetation, specifically trees and lawns. Larger parks usually also have water features such as ponds or fountains. For city dwellers, they represent one of the greatest recreational destinations, which they can use on an hourly, half-day or full-day basis.¹⁸

Trees make an important contribution to the urban climate, it is not for nothing that parks and avenue trees are considered the “green lungs of the city”. Trees offer increased added value, especially in summer, as they provide refreshing shade in the scorching heat, increase humidity, trap dust, and at the same time slightly lower the ambient temperature.

The importance of trees for the generally warmer urban climate is therefore evident. In Vienna alone, the average annual temperature rose by two degrees Celsius between 1970 and 2000. Planting more trees can counteract the effects of warming.

Trees thus have a significant positive effect on the health of local residents - regardless of age, education or income, concludes Marc Berkman, the co-author of this study. The research team also calculated that a number of ten trees per block can extend the life expectancy of residents by up to seven years.

What causes this positive effect on human health is still unclear. However, it is assumed that trees ensure cleaner city air and also reduce health problems through their cooling function on hot days.¹⁹

16 Vgl. Lambertini (2008), 17-18

17 Vgl. Niemeyer-Lüllwitz et al. (1994), 120-121

18 Vgl. Halik et al. (2003), 102

19 Vgl. nature.com (2015), [online]

3.5 Terrace greening

In some cities such as Stuttgart, Amsterdam, Berlin, Linz or Hamburg, green track surfaces have been part of the usual cityscape for several years. On certain sections of the route, the areas between but also around the tracks are usually greened. From a purely visual point of view, the monotonous gray of the streets can be broken up by meadows and lawns.

In summer, green roofs help to cool the ambient temperature. Depending on the type of greening, they also offer many insects and other small animals a habitat in the middle of the city. As already mentioned, another advantage is the visual aspect, which consists of the green of the previously asphalted surfaces.

Route greening unseals the soil and can thus absorb water. They also have a positive effect in terms of dust absorption, noise reduction and lower daytime heating with a cooling effect and improvement of the local microclimate.

3.6. Urban Gardening

The (re)discovery of urban gardening can no longer be overlooked in many cities and is appearing more and more frequently in urban development plans and mission statements.²⁰ The central roots of today's urban gardening movement were in New York in the 1970s. Activists founded the Liz Christy Garden here, which is the city's first community garden.

These gardens were created with the objection that there is a lack of green space in inner-city areas, but also as a response to urban decay, poverty, food shortages and crime. The Liz Christy Garden, for example, was built on a site where vacant buildings were destroyed by arson and demolished by the city and have since been littered with rubbish and debris.

By the mid-1980s, the number of community gardens in New York City had grown to 1,000.²¹ In the 1990s, the high-income classes migrated back to these areas and inner-city properties became attractive again for profit-oriented use.²²

Even if community gardens can be quite different in terms of their external shape and size, they are primarily defined by communal practice. Groups of people create and run these gardens together. On the one hand, unlike the individualized form of allotment gardens, these gardens contribute to a non-commercial meeting place and leisure activities, on the other hand, from an urban ecological point of view, they offer habitat for animals and plants and thus also improve the microclimate.²³

Organic, urban agriculture has three key advantages in the urban food system: it protects biodiversity, it closes material cycles such as the waste cycle, and it also reduces the use of primary energy in the production and distribution of food.²⁴

20 Vgl. Kumnig et al. (2017), 7

21 Vgl. Kumnig et al. (2017), 13-14

22 Vgl. Kumnig et al. (2017), 211

23 Vgl. Kumnig et al. (2017), 11

24 Vgl. Müller (2011), 152

Cities are increasingly finding themselves in a quandary, since on the one hand there is an increasing need for living space due to the growing population and agricultural areas are increasingly coming under pressure as a result. On the other hand, official planning instruments such as urban development plans simultaneously identify the preservation of gardens and urban agriculture as a central goal.²⁵

SUMMARY

Finally, we would like to give a brief overview of further developments that would be important for a future, sustainable and livable life in the city.

The urban heat theme was chosen due to the fact that more and more people are suffering from urban heat and that this exposure has a negative impact on human health. Green spaces and open spaces are increasingly being lost as a result of the successive development and construction of new residential and industrial buildings as well as road construction.

Heat island formation has become a normal part of urban climates.

Studies have found that the degree of sealing is very high, many areas are used for new buildings or parking lots and open spaces are destroyed. The result is heat island characteristics that exacerbate heat stress. This is particularly noticeable at night, when temperatures drop only slightly and therefore do not represent any nocturnal relaxation for people.

The consequences are health problems and heat stress. Due to the long-term persistent heat during the day and at night, more and more people die from heat, and the sick, old and socially disadvantaged are particularly affected.

Nevertheless, we could feel a positive trend, many people are already actively involved in climate change adaptation measures and want to help cities to make the present and future more livable, especially through greening.

Greening has shown in theory and practice that it can have a very positive influence on the ambient and surface temperatures and can thus represent added value for the city.

It is by no means a matter of making the urban area less urban by greening. Instead, the city should be intensified and enriched through greening measures, which can also increase the quality of life for the city dwellers.

Ultimately, we must consider solar energy as the central resource that is available to us as a post-fossil economy in almost unlimited quantities. Solar energy is the source of life that enables us to surpass the natural limits of growth and create value in society. Countless square kilometers of roof, facade and route areas are available to us in cities and therefore offer us an incredibly great opportunity. Since open spaces and rooms are rare in the city, it is important to use these unused areas sensibly to positively influence the climate.

25 Vgl. Kumnig et al. (2017), 154

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Алојз А. РИЕГЛЕР

ЗЕЛЕНИ ГРАД – ПРИРОДНО СПРЕЧАВАЊЕ ПРЕГРЕВАЊА

Резиме

Многи фактори су одговорни за климатске промене које стално напредују, укључујући све веће емисије гасова стаклене баште, крчење прашума, загађење од индустрије и саобраћаја или прекомерну експлоатацију мајке природе. Последице су далекосежне и драматичне. Морамо деловати и почети тамо где многи људи живе у скућеном простору: градови - места која су највише погођена.

Градови су она места која могу и мораће да флексибилније спроводе мере прилагођавања и избегавања климатских промена у будућности. Посебно ће градови, у којима велики број људи живи на веома малом простору, бити изложени већим ризицима од климатских промена. У овом научном раду детаљно се бавимо фундаменталним истраживањима конструкције града, јер су градови суштински животни и дизајнерски простори данашњег друштва.

У њима, најразличитији задаци леже близу један другом у најмањем простору. Овде се фокусирамо на аустријске градове, где изблиза разматрамо тренутно преовлађујуће климатске услове и посебно топлотни стрес. Такође наводимо мере за смањење топлотног стреса. Наш главни фокус у раду је на мерама озелењавања, као што су озелењавање кровова, фасада и терасе.

Мере и фундаментални пројекти који су већ у току и они који су у фази планирања су вредни помена. У мерама прилагођавања климатским променама за град у коме вреди живети, састајемо се са различитим заинтересованим странама које су активно посвећене смањењу урбаних топлотних острва. Настављамо да се фокусирамо на мере урбаног озелењавања.

Кључне речи: озелењавање, град, климатске промене, станишта, мере озелењавања, зелени кровови, зелене фасаде, зелене терасе.

UDK 94(497.115):930(410)(049.32)

93/94 Малколм Н.(049.32)

93/94 Џуда Т.(049.32)

93/94 Викерс М.(049.32)

Original scientific work

*Petar R. RISTANOVIĆ**

Institut za srpsku kulturu Priština – Leposavić

HISTORY AND/OR PROPAGANDA: THE BOOKS BY TIM JUDAH, NOEL MALCOLM AND MIRANDA VICKERS ON KOSOVO AND METOHIA**

Abstract: This paper analyzes the methodological approach and original foundation of the books of three influential British authors whose books on Kosovo and Metohija, written on the eve of the war in 1999, had a strong influence on political decision-makers from the West. The aforementioned books define the dominant discourse and narrative in Western academia and journalism today. The influence of those books is still great since they are usually found on the bibliography of recent scientific papers and monographs. Such a far-reaching influence leads to the need to review their methodological and original foundation.

Key words: Kosovo and Metohija, Kosovo issue, Tim Judah, Noel Malcolm, Miranda Vickers.

At the beginning of the nineties, at the time of global intoxication with the triumph of the collective West and the end of the Cold War, the disintegration and civil war began on the ruins of the Socialist Federal Republic of Yugoslavia (SFRY). The country that the left-leaning Western intellectuals during the Cold War considered one of the most successful results of the communist experiment - had disintegrated in blood. "The wars for the Yugoslav heritage", as the series of wars during the 1990s on the territory of the former Yugoslavia are most often called in non-fiction and academic literature in English, set precedents that still influence international relations, the activities of international organizations and international law. One of the phenomena characteristic of these wars was the influence of authors who responded to the sudden attention of the Western public focused on the area affected by the war. In a relatively short period, several "histories" were written in which the authors, mostly journalists, provided their interpretations of the past and the roots of the war.

* Research associate, petar.ristanovic@gmail.com

** This paper was written as part of the scientific research work of NIO under the Contract concluded with the Ministry of Education, Science and Technological Development Republic of Serbia, number: 451-03-47/2023-01/ 200020, date 03.02.2023.

Over the past two decades, regarding the media coverage and its influence on the creation of public attitudes in the West, authors have written relatively extensively.¹ This is expected since the impact of the media campaign was huge. Less attention has been paid to the influence of books, especially historical books, since their resonance with the Western public was less obvious. Criticism of these books remained largely confined to the sphere of academia² – although their influence far exceeded academic boundaries.

Over the past two decades, a number of testimonies have appeared indicating that key political decision-makers read these books and changed their policies under their influence. The well-known journalist and winner of the Pulitzer Prize, David Halberstam, wrote that in 1993 US President Bill Clinton abandoned the interventionist policy in Bosnia and Herzegovina under the influence of Robert Kaplan's book "Balkan Ghosts". In this book, the author advocated one of several reductionist theories widely promoted during the nineties – that the war in Bosnia and Herzegovina is the result of "ancient hatreds". Kaplan claimed that people in the Balkans had been killing each other for centuries and that nothing can be done about it.³ The book "Balkan Ghosts" is an obscure work, written by an author who did not know the area he was writing about, and it is based on a series of stereotypes, without any scientific basis; the book is sensationalistic and pretentious. The author did not refrain from making claims such as that Nazism had its origins in the Balkans and that under the influence of the Southern Slavs "Hitler learned how to hate in such an infectious way"⁴. In the days when simple answers to complicated questions were sought, the book gained great popularity and directly influenced key political decision-makers, such as US President Clinton in 1993. Six years later, during the escalation of the Kosovo crisis, Clinton also made the decision on NATO intervention against FR Yugoslavia under the influence of one book – the history of Kosovo by Noel Malcolm.⁵

1 Among the works in the Serbian language, the analysis of the writing of the German press written by Ljiljana Glišović stands out (Ljiljana Glišović, *Srbija u ogledalu nemačke štampe 1987-2006*, Službeni glasnik, Beograd 2011.) Slobodan Vuković dealt with the role of Western media in the breakup of Yugoslavia. (Slobodan Vuković, *Etika zapadnih medija, Antisprška propaganda devedesetih godina XX veka*, Izdavačka knjižarnica Zorana Stojanovića, Sremski Karlovci: Novi Sad 2009.) Attention should definitely be paid to the works by Jovo Bakić, especially in the book: Bakić Jovo, *Jugoslavija: razaranje i njegovi tumači*, Službeni glasnik: Filozofski fakultet, Beograd 2011.

2 Lenard J. Cohen, *Serpent in the Bosom. The Rise and Fall of Slobodan Milosevic*, Westview Press, Boulder 2001, 377-405; Noman M. Naimark (ed.), *Yugoslavia and Its Historians: understanding the Balkan wars of the 1990s*, Stanford University Press, Stanford 2003; Dejan Djokic (ed.), *Yugoslavism. Histories of a Failed Idea 1918 – 1992*, Hurst & Co, London 2003; itd.

3 David Halberstam, *War in a Time of Peace. Bush, Clinton, and the Generals*, Scribner, New York, 2001, 228. About the influence of Robert Kaplan's works on President Clinton, the following write as well: Elizabeth Drew, *On the Edge: The Clinton Presidency*, Simon and Schuster, New York 1994, 157; Richard Reeves, *Running in Place: How Bill Clinton Disappointed America*, Andrews and McMeel, Kansas City 1996, 91-92.

4 Robert Kaplan, *Balkanski duhovi. Putovanje kroz istoriju*, Dan Graf, Beograd 2004, XXI.

5 Lenard J. Cohen, *Serpent in the Bosom*, 377-405.

Malcolm's book "Kosovo: A Brief History", along with the books "Serbs: History, Myth and the Breakup of Yugoslavia" by Tim Judah and "Between Serbs and Albanians: A History of Kosovo" by Miranda Vickers, are three influential books that shaped the development of the Kosovo crisis during the 1990s.⁶ These three books influenced the decision of the NATO leaders to start a military intervention in FR Yugoslavia, and after the war they were used as an argument for the secession of Kosovo from Serbia. Malcolm and Vickers wrote their books in the format of academic histories, while Judah's book is a mixture of the history of the Serbs from ancient times (about half of the book) and an account of the latest war events during the nineties (the other half).

These three authors had very different careers until the moment they became interested in the war on the territory of the former SFRY and the history of this territory. Tim Judah (1962) graduated in law and diplomacy at the London School of Economics, after which he began a career as a journalist. In the period 1990-1991 he was the foreign policy correspondent of the London newspapers "The Times" and "Economist" from Bucharest, from where he reported on the days of the collapse of communism in Romania and Bulgaria. This recommended him for the position of correspondent of "Times" from Belgrade, where he succeeded the famous Dessa Trevisan who was well-known in Belgrade journalistic circles. He moved with his family to Belgrade, where he stayed until 1995. At the end of the war in Bosnia and Herzegovina, he returned to London but continued to visit the Balkans frequently and to write about it. In addition to articles in "The Times", "Economist" and other British newspapers, his articles in "New York Review of Books" were also widely read.

On the eve of the outbreak of the armed rebellion in Kosovo, Judah published the book "Serbs: history, myth and the destruction of Yugoslavia".⁷ The second edition of the book was published in 2000 and was supplemented with chapters on the war between NATO and FR Yugoslavia. The author wrote this part of the book mostly based on personal experience, since he was present on the ground when NATO forces entered the territory of Kosovo and Metohija. In the same year, 2000, Judah published the book "Kosovo: War and Revenge"⁸, after which he continued to occasionally write and come to the region, in parallel with reporting from other areas affected by rebellions and war.

6 These books have been extensively written about in Serbian historiography. Noel Malcolm's book attracted the most attention, due to the great influence it had on international diplomats. The answer to it was published by the Historical Institute of SANU: *Одговор на књигу Ноела Малколма Косово - Крајња историја. Scientific discussion on Noel Malcolm's book "Kosovo. A Short History", ed. Slavenko Terzić*, Istorijski institut SANU, Beograd 2000. Professor Predrag Simić also wrote extensively about the book in: Predrag Simić, Put u Rambuje. Kosovo crisis 1995-2000, Nea, Belgrade 2000, 107-136. Mile Bjelajac wrote extensively about the books of Malcolm and Žuda: Mile Bjelajac, Gordana Krivokapić - Jović, Contributions from scientific criticism. Serbian Historiography and the World, ISI, Belgrade 2011, 335-364.

7 Tim Judah, *The Serbs: history, myth and the destruction of Yugoslavia*, Yale University Press, New York (etc) 1997.

8 Tim Judah, *Kosovo: war and revenge*, Yale University Press, New Haven: London 2000.

Today, he enjoys the reputation of a good connoisseur of the situation in the region, which is why he is a frequent guest at conferences and a collaborator of several media and think tanks.

In his presentations, Judah often emphasized that his works are not academic, but that it is journalistic, publicist literature. According to the style, the depth of research and the predominant reliance on conversations, interviews and personal impressions - this is certainly true. However, Judah is a trained researcher whose books are often written in a history-like form, with a small but present scientific apparatus. In the foreword to the book "Serbs", he points out that his goal is not to provide "an analysis of the problems that led to the war" nor is it "an exhaustive history of the Southern Slavs, nor a book that refers to the entire war in Yugoslavia", but that it is "a book about the Serbs" written with the intention to historically explain "how they came to be where they are, and in the case of Croatia, where they were until 1995."⁹ However, readers of the book will get the impression that Judah's book is exactly what the author rejects in the introductory part - a sketch of the history of the Serbs written in such a way that the cause of the wars during the 1990s is found in the "malign threads of Serbian history" (which Judah identifies). Judah rejected the reductionist theory of "ancient hatreds" as the main cause of the war - but he accepted another theory, since he labeled "manipulative and evil elites" - the nationalism-intoxicated leadership of the republics (primarily Serbia, then Croatia) as responsible for the collapse of the state and the bloody conflict.¹⁰

Miranda Vickers (1958) received her master's degree in Balkan history from the University of London. In the early nineties, she worked as a journalist and researcher in the Balkans. In a short period of only four years, she published four books in which the central theme was the history of Albanians.¹¹ She belonged to the circle of British Albanologists gathered around Sir Reginald Hibbert, an SOE officer in Albania during the Second World War. Miranda Vickers, together with her colleague James Pettifer, dedicated the book "Albania" *From Anarchy to Balkan Identity*, published in 1997 to her mentor. In this book, the authors dealt with the last years of communism, the period of disintegration of state institutions in Albania and the short civil war. Although somewhat biased (since Vickers, influenced by Hibbert, was a sympathizer of Albanian socialists) the book provides a good insight into the years of transition in Albania and is an excellent supplement to the modern history of the Albanians published by Vickers in 1995. With these books, Vickers made a kind of introduction to the book "Between Serbs and Albanians: the history of Kosovo", which was published in 1998, at a time when the Albanian armed rebellion in Kosovo had already begun.

9 Tim Džuda, *Srbi: istorija, mit i razbijanje Jugoslavije*, Dan Graf, Beograd 2003, XIII.

10 Ibid. XII.

11 Miranda Vickers, *The Status of Kosovo in Socialist Yugoslavia*, Research Unit in South European Studies, University of Bradford 1994; Miranda Vickers, *The Albanians: Modern History*, I.B.Tauris, London 1995; Miranda Vickers, James Pettifer, *Albania. From Anarchy to Balkan Identity*, NYU press, New York 1997; Miranda Vickers, *Between Serb and Albanian: a history of Kosovo*, Columbia University Press, New York 1998.

The history of Kosovo by Miranda Vickers has the form of an academic history, but the text combines a historical approach and a political analysis. The scientific apparatus shows that the author used literature in Albanian and Serbian, in addition to literature in English. The choice of literature used is scarce, when considering the ambitiousness of the topic, while archival and other primary sources have been used sparingly. One gets the impression that the author got the most information about the topic during conversations with Serbs and Albanians, whom she met during her stay in the region, working on previous books. Her knowledge of the history of the region and Serbian-Albanian relations is often quite superficial (since she dealt with them only incidentally in earlier books), which is why she was forced to rely on selected literature in numerous situations. The choice of books she used for certain narrower topics was not the best, so some disputed information and claims ended up in her book. Most of the time, Vickers refrained from trying to deal with myths and, as an indisputable arbiter, untangle the biggest historical controversies of this complicated space. It seems that this is precisely why her book attracted significantly less attention than Noel Malcolm's *History of Kosovo*.

British historian Noel Malcolm (1956) was educated at Eton and Cambridge. He holds a doctorate in history from Trinity College. In the early eighties, he devoted himself to an academic career, but in the second half of the decade he turned to journalism. By 1995, he had built a successful career as a political commentator for the *Daily Telegraph*, sympathetic to Margaret Thatcher's Tories. During the first part of his career, until 1995, he wrote two biographical books, the first about Marco Antun de Dominis, an Italian Jesuit, mathematician, physicist and philosopher who lived at the turn of the 16th and 17th centuries; and another about George Enescu, Romanian composer, pianist and conductor. In 1994, Malcolm's book "*Bosnia. A short history*"¹² - the history of the territory of Bosnia and Herzegovina from ancient times to modern days was published. The book attracted public attention because it had all the hallmarks of a well-researched academic work, written from the pen of a trained Western historian. Malcolm, writing the history of Bosnia, essentially provided his view of the genesis of the war's causes, advocating the same reductionist theory as Judah - according to which the main culprit for the war was the "evil elites". In the book, he took a pro-Bosniak position. He accused the Serbs, their nationalism and territorial pretensions as the main culprits of the war and clearly advocated for the preservation of whole Bosnia and Herzegovina.

The book was received mostly with praise in the English-speaking world and it influenced the attitudes of British journalists and politicians, as well as influential American diplomats, such as Richard Holbrooke, who publicly praised it on several occasions.¹³ "*Bosnia: A Short History*" brought Malcolm considerable publicity, which encouraged him to leave his journalistic career

12 Noel Malcolm, *Bosnia - a Short Story*, Papermac, London 1996.

13 Richard Holbrooke, *To end a war*, Random House, New York 1998, 22-24.

and turn to another crisis area on the soil of the former SFRY - Kosovo and Metohija. His most ambitious and influential book "Kosovo. A Short History"¹⁴ was published in 1998, at the time of the rise of the Albanian armed rebellion.

The three books analyzed in this paper differ in the author's approach, the scope of the conclusions, the authors' aspirations to be chroniclers, interpreters or arbiters, as well as in the influence they had after publication. Judah's book is a work of non-fiction, Miranda Vickers's book is a mixture of history and political analysis, while Malcolm's book is an academic history. Judah wrote with the clearly stated goal of finding arguments in history for the interpretation of current war events. At first glance, Vickers and Malcolm had no such goal. However, when considering the moment of publication of their books - it can be concluded that their motive was similar to Judah's.

The authors' political engagement clearly indicates that they had been motivated by current events. It is most obvious in Noel Malcolm's and Tim Judah's books, while Miranda Vickers is more reserved about it. Throughout his book, Malcolm clearly underlines the thesis that Kosovo's ties with Serbia are loose, "artificial", that the Albanians are the indigenous population of this area, that in 1912, Serbia imposed a "colonial rule" on Kosovo fueled by mythomania, that in modern events, Serbia had "already lost" Kosovo - from which it is easy to draw the conclusion that the entire history of the Kosovo issue inevitably leads to the only possible solution - the secession of Kosovo from Serbia. Malcolm is trying to prove that there is no "organic" connection between Serbia and Kosovo, unlike Bosnia and Herzegovina, whose integrity he defended.¹⁵ His views are identical to those of Tim Judah, who wrote that "the reintegration of Kosovo into Serbia in 1944 was tantamount to reintroducing cancer into the Serbian political fabric."¹⁶ Miranda Vickers avoided such judgments to some extent. Maybe that's why the book was followed by comments that it is somewhat favorable to Serbs¹⁷, for which it is difficult to find confirmation in the text itself.

The three analyzed books differ greatly in their original foundation. At the end of the book, Tim Judah provides a list of selected bibliography with 120 titles of books and publications, almost entirely in English. In addition, as he states himself, he was greatly helped by reviews of the press, reports of international and non-governmental organizations, committees for refugees, etc. The list of selected literature at the end of Miranda Vickers' book is even more limited - 106 titles are listed. The impression is that both of them relied to a considerable extent on the information they received first hand, on the ground, through conversations or even directly attending some events.

14 Noel Malcolm, *Kosovo: a short history*, New York University Press, New York 1998.

15 „In modern historical terms, the relation between Kosovo and the rest of the Serbia is less close or organic than the relation between any part of Bosnia and the rest of Bosnia. Objections on grounds of historical identity to the partitioning of Bosnia, in other words, need not entail any equivalent objections to the dividing of Kosovo from Serbia.” (Ibid, xxxiii).

16 Tim Džuda, *Srbi*, 116.

17 Mile Bjelajac, Gordana Krivokapić-Jović, *Prilozi iz naučne kritike*, 294.

The list of references and bibliography at the end of Noel Malcolm's book is impressive. The source base of Judah's and Vickers' books cannot be compared to his "short history" in which Malcolm refers to documents from 14 archives and 870 items of literature, written in 11 languages. Even a cursory look at this list leads to the question of how it is physically possible for someone, who has never dealt with this topic before, to conduct research in so many archives and consult such a large amount of literature in various languages in a period of only 2-3 years. Nevertheless, when we put such dilemmas aside and take a closer look at Malcolm's list of used sources - symptomatic deficiencies are noticed. Although in his work he used documents from archives in England, the USA, Italy, Austria and the Vatican, he did not find it appropriate to visit any of the archives in the Balkans, primarily in Belgrade and Pristina. Such a decision can be somewhat justified for the period of the Middle Ages and early modern history, however, writing the history of the Kosovo issue in the 19th and 20th centuries is impossible without using local archives. The support of the text with sources and literature is far better for earlier periods than for the second half of the 20th century. It is especially noticeable regarding the period of communism, which was written about without relying on archival sources and on the basis of scarce literature. In the months after the publication of the book, this complaint against Malcolm's book was publicly expressed by some historians and journalists, such as Misha Glenny and Tim Judah, who otherwise mostly wrote praises of the book.¹⁸

In addition to the differences in the original foundation, the difference in the author's tone is also noticeable. Judah writes in a "relaxed", journalistic style, characteristic of journalistic works. Head titles (We chose the kingdom of heaven; You warmed us like the sun; Franks and Badja go to war; Madmen take over the asylum; etc) and sub-chapters (From pig traders to princes; Bosnian sulfur vapors; Croatia, Kaputt; Frankenstein's monster; etc) reflect the tone of his book in adequate manner. On the other hand, the books by Vickers and Malcolm are written in a restrained tone, characteristic of academic works.

Finally, although the motivation for writing the book was similar for all three authors, prompted by the actuality of the Kosovo crisis, the "central thread" and the kind of goal that the authors of the books wanted to achieve with them are significantly different. Tim Judah wrote about the Kosovo crisis, and before that about the war in Bosnia, for years. The book was a practical way to wrap up this topic, at a time when the breakup of Yugoslavia was approaching its epilogue. On the other hand, in the earlier period, Vickers dealt with Albania and the history of Albanians, so writing the history of Kosovo was somewhat related and the topic was much more exposed in the media. Therefore, Judah's and Vickers' motivations can be described as predominantly opportunistic, while Noel Malcolm had more far-reaching aims. His book was written with the intention of providing a scientific contribution (through "breaking

18 Tim Judah, "Will There Be a War in Kosovo?", *New York Review of Books*, May 14th, 1998.

Serbian myths") as well as a historical basis for the secession of Kosovo - for which Malcolm openly advocated.

Apart from the differences between them, the three analyzed books also have a lot in common. All of them belong to a kind of "instant history" class - works written in a relatively short time, on a topic that the authors had not dealt with before, and all with the aim of clarifying to the public in the West the history of the area that became one of the central topics in the media due to the war. The way the media in the West reports from the war zone is evidenced by the information provided in the work of four long-term researchers of the history of Yugoslavia. The authors write that during the war in Bosnia and Herzegovina, on a Friday afternoon, one of them received a call from a journalist who was heading to the war zone two days later, and wanted to be informed in the meantime about everything he needed in order to understand the events and write the story.¹⁹ During the war, long-term researchers of the history of Yugoslavia hesitated to present their interpretation of events - because complicated and measured explanations were neglected. In their place, as noted by the British historian of Serbian origin, Stevan Pavlovic, others quickly appeared ready to respond to the demands of publishers and earn a few pounds or dollars by writing "short" histories of a region about which they knew practically nothing until then. Mile Bjelajac wondered if a thorough and scrupulous historian could accept the offer to write two comprehensive histories in just four years, from the early Middle Ages to the present day, of such complicated areas such as Bosnia and Kosovo?²⁰

A striking common feature for all three books is a kind of ease in drawing conclusions and pronouncing judgments about complex problems, for which there are usually few first-rate sources. In part, this is a consequence of the same "ease" with which the authors made the decision to accept the writing of complicated histories of an area about which they did not know much until then. An additional factor is a kind of feeling, characteristic of authors from the West, that it is them who are called upon to resolve dilemmas over which local historians have been arguing for decades. Such a relationship has a similar source as Balkanism, which Marija Todorova writes about. A special testimony of this relationship is the episode recorded by Maria Todorova after a conversation with the British journalist Misha Glenny. Todorova wrote that Glenny, a war correspondent for the BBC, "The Guardian" and the author of the influential book "The Fall of Yugoslavia: The Third Balkan War" (1992), admitted in a conversation with her that he "probably wrote under the influence of Balkanism."²¹

19 Gale Stokes, John Lampe, Dennison Rusinow, Julie Mostov, "Instant History: Understanding the Wars of Yugoslav Succession", *Slavic Review*, Vol. 55, No. 1 (Spring, 1996), 141.

20 Mile Bjelajac, "Tim Džuda: Srbi. Istorija, mit i razaranje Jugoslavije, Beograd, 2003", *Tokovi istorije*, 2004 (1/2), 2006-2007.

21 "The most gratifying response to me came from a very good British journalist, Misha Glenny, who has written well and extensively on the Balkans. He said, 'You know, now that I look back, I have been guilty of Balkanism.'" http://www.clas.ufl.edu/events/news/Articles%201996-2004/199911_todorova.html [27. 10. 2014]

The comment was meant to praise Todorov's work, but the implications of Glennie's words are far deeper. The admission that he wrote about the war in Yugoslavia under the influence of deep-seated prejudices (which is the essence of Balkanism) Glennie expressed practically as an anecdote – even though his writing directly affected the destinies of thousands of people in the war-torn area. It is precisely this unburdenedness by the influence of what is said and written, together with the belief that they are called to be the supreme arbiters – an important feature of the books analyzed in this paper and is especially expressed in the writing and public performances by Tim Judah and Noel Malcolm.

Throughout the whole Judah's book there are practically incidental comments in which he gives his view on certain disputes, taking an apparently neutral position, according to which the truth is almost always "somewhere in the middle". In hindsight, neither Judah's position is neutral nor was he really trying to find some "objective middle". There is a very symbolic detail which indicates the way Judah gives his objective interpretations. Writing about the reasons why Serbs emigrated from Kosovo during the seventies and eighties of the 20th century Judah states that the one part that forced them to migrate was the atmosphere of fear caused by occasional attacks on people and property. According to Judah, the second reason was demographic – there were more and more Albanians and they didn't spare the money to buy Serbian properties. Judah wrote:

"Stories began to circulate about the 'persecution' of Serbs, about the destruction of their churches and cemeteries, and about frequent violence. But the rumor mill produced a thousand others for every real incident. [...] Rumors about Serbian 'refugees' from Kosovo circulated more and more, and the fact that many of them sold their houses for large sums of money because of the lack of housing in the overpopulated province was less and less mentioned."²²

Taking an "objective", "neutral" position, Judah writes that the real reason for emigration was lost in a sea of rumors and lies. He illustrated this with the example of Devič Monastery, a medieval place of worship in the heart of Drenica, which was burned and destroyed many times throughout history, and the monks were expelled or even killed. Judah cynically states that it is certain that the "hated nuns" were harassed, even attacked, but it is also certain that this did not happen exactly "day and night", as they claimed.²³

Another characteristic of Judah's book is that, at first glance, in his long historical survey he did not attempt to resolve the disputed issues. Instead, as a publicist, he simply expressed "impressions" – which were in fact his interpretations of the most complex issues, such as the ethnic structure of the population of Kosovo and Metohija over the centuries, the reasons for the mass emigration of Serbs during the SFRY, etc. Judah often conveys the controversial opinions

22 Tim Džuda, *Srbi*, 140.

23 "The hated nuns from Devich were most likely mistreated or even attacked, but it is hard to believe that this happened 'round the clock'" Tim Džuda, *Kosovo. Rat i osveta*, Samizdat B92, Beograd 2002, 68.

of various authors, e.g. Professor John Fine's assertion about the Iranian origin of the Serbs, Croats and Bulgarians, who assimilated with the mass of Slavs.²⁴ We get the impression that Judah was doing this simply because he found some claims interesting. Nevertheless, the way in which he mentions such claims, practically in the same way as the claims that are considered to be a consensus among historians, creates the impression in the insufficiently informed reader that they are much more likely than they really are.

Miranda Vickers does not have the cynicism characteristic of Judah nor the tendency to pass judgments lightly, without giving arguments. It is obvious that she was trying to point out cause-and-effect relationships and to see the wider context of the event. As noted by Mile Bjelejac, in several places she stepped out of the narrative that was dominant at the time she wrote the book. For example, she connects the economic backwardness of Kosovo in the SFRY with the huge natural increase of Albanians, then points out the huge dislocations in the labor market that were further deepened by the educational policy (80% of students were at the faculties of humanities and arts), etc.²⁵ However, in some places one can argue with Vickers's views, such as, for example, when he considers all the Muslims from the 1931 census to be Albanians, when she makes judgments about the "national" character of the Kačak struggle after 1918²⁶, or when she talks about the "mass massacres" committed by the Serbian army in Kosovo in 1918.²⁷ There are a lot of similar examples in the book, and the impression is that they are primarily the result of too much reliance on selected literature and insufficiently reliable sources. In the case of the alleged mass slaughters committed by the Serbian army in 1918, Vickers uses the reports of British journalists, from whom she takes the facts and the narrative. These are secondary sources, the authors of which were not only objective witnesses of the events. In this and in a series of similar cases, it becomes obvious how much the author was limited by the decision not to use primary sources, that is, archival documents from the archives of the area she is writing about.

Noel Malcolm has gone the extra mile in wanting to be an arbiter debunking the myths. His book was written with the aim of making two major contributions. The first contribution is the author's conclusion that the ties between Kosovo and Serbia are not "organic", that they were largely imposed by the Serbs and that the secession of Kosovo is the fairest outcome of the Kosovo crisis. The second contribution of Malcolm's book should have been a reckoning with Serbian myths based on sources and irrefutable evidence, and in the right place with the myth of the great migration of Serbs in 1689-1690.

Malcolm seems to convincingly prove that the whole story of the great migration is a later construction, based on secondary sources of questionable quality, that the population movement that took place after the retreat

24 Tim Džuda, *Srbi*, 7.

25 Mile Bjelajac, Gordana Krivokapić-Jović, *Prilozi iz naučne kritike*, 297.

26 Miranda Vickers, *Between Serb and Albanian*, 99.

27 *Ibid.*, 93-95.

of the Habsburg army was smaller in scale (30,000 evicted instead of “500 thousand” - a figure that does not appear in the serious works of Serbian historians) and is dramatically less consequential than what Serbian historiography claims. Thus, Malcolm essentially simultaneously “debunks the myth” and provides evidence for his claim about the autochthonousness of Albanians in the territory of Kosovo and their numerical dominance practically throughout the entire period from the Middle Ages to the present day.

Malcolm presents his “discovery” as completely new, based on research in the archives of Rome, Venice and Vienna. It was supposed to be his personal contribution to historiography and the elucidation of an important episode of the Kosovo issue. In fact, Malcolm’s conclusions are far from definitive and irrefutable. As experts on this topic have already pointed out, Malcolm tended to use certain sources, while he accidentally or deliberately overlooked the other sources. His debunking of the Serbian migration myth earned him the opportunity to teach for a year as a visiting professor at Brasonese College, Oxford, but most researchers in the academic community rejected his conclusions.²⁸ More importantly - his “discovery” is not original, as he presents it. Practically the same claims were made more than two decades earlier by the Albanian historian from Kosovo, Skender Rizaj. Malcolm uses Rizaj’s works widely and uncritically, even though Rizaj was a tendentious historian, prone to falsifications that were proven by his fellow Albanian historians. In addition, during the SFRY, Rizaj was sentenced as an Albanian nationalist and secessionist.²⁹

“Myth debunking” is the central theme of Malcolm’s work, while such tendencies are incidental in Judah and Vickers. It is noticeable, however, that all three authors fundamentally do not understand the identity significance of Kosovo and Metohija for Serbs. They write about the “Kosovo myth”, point out that “Kosovo is the Serbian Jerusalem” and that the Serbs consider it the “cradle of the nation” - which are phrases that have been running through literature and media articles for decades. The authors explain this understanding with the facts that numerous Serbian medieval monasteries are located there, that the seat of the Serbian Patriarchate is located there, and that Kosovo is the site of a historic battle. They miss the deeper, identity-based, practically metaphysical significance of the “Kosovo myth” or “Kosovo covenant” for Serbs. Interpreting it exclusively through historical events, the authors deal with it in a way. For example they are trying to prove that on the Kosovo field in 1389, the “Christian alliance” fought against the Turks, an army in which a significant part of the Albanians was also present, and that the Serbs later practically appropriated the battle.³⁰ Whether Albanians participated in the Kosovo battle, in what numbers and under whose banner is still a matter of debate among historians,

28 *Odgovor na knjigu Noela Malkolma Kosovo – Kratka istorija*, 113-121.

29 Petar Ristanović, *Kosovsko pitanje 1974-1989*, Prometej: Informatika, Beograd: Novi Sad 2019, 71.

30 Tim Džuda, *Srbi*, 28; Miranda Vickers, *Between Serb and Albanian*, 13; Noel Malcolm, *Kosovo*, 59-62.

largely motivated by modern tensions between the two nations. Whatever the answer to this historical dilemma is, it has practically no effect on the significance of the Kosovo covenant for the Serbs. The “myth” developed over the centuries and decisively influenced the formation of Serbian identity. Disputing its “historical validity” in order to prove the modern delusion of Serbs by myth makes as much sense as disputing the historical validity of events from the Old Testament in order to settle accounts with the beliefs of modern Christians. In the academic discussion after the appearance of Malcolm’s book, Professor Tomas Emerat challenged Malcolm’s “debunking of Serbian myths” and pointed out that the author does not understand that “myth exists by itself, has its own duration and represents reality.”³¹

Such claims remained a minority. Serbian “intoxication with myths” was the easiest explanation for the wars of the 1990s and their resolution. Such an interpretation was easy to present to the Western public, politicians easily understood and used it, and it had a strong influence even on some distinguished historians. During a lecture to the students of the Central European University in Budapest, in 1993, Eric Hobsbawm said: “The Battle of Kosovo in 1389 really took place, the Turks defeated the Serbian warriors and their allies and it really left deep scars in the national memory of the Serbs. However, this does not justify the oppression of the Albanians, who now make up 90 percent of the population of that region, or the Serbian claim that the land is essentially theirs.”³² Similar views can be found in the works of influential historians written years later. In his history of the Serbs, Holm Sundhausen wrote that among the Serbs, “singing epic songs, playing the fiddle, poetic outpourings and preaching hate went hand in hand.”³³

Another common characteristic of all three analyzed books is the reliance on a number of documents and books that during the nineties acquired the status of indispensable reading for understanding the Kosovo crisis - but whose importance, objectivity and especially the context can be questioned. The most striking examples are the report of the Carnegie Commission in 1913 on the Balkan wars³⁴, then the book “Serbia and Albania”³⁵ by Dimitrije Tucović, then the lecture of academician Vasa Čubrilović at the Serbian Cultural Club... All three authors use these documents (to varying extents), although it is obvious that they do not fully understand the context in which the documents were created (Maria Todorova³⁶, among others, wrote about skepticism and criticism

31 The answer to the book by Noel Malcolm “*Kosovo – Kratka istorija*”, 113.

32 Erik Hobsbaum, *O istoriji*, Otkrovenje, Beograd 2004, 18.

33 Holm Zundhausen, *Istorija Srbije od 19. do 21. veka*, CLIO, Beograd 2008, 484.

34 *Report of the International Commission to inquire into the Causes and Conduct of the Balkan Wars*, Carnegie Endowment for International Peace, Washington 1914. During the war in Bosnia and Herzegovina, in 1993, a reprint of this edition was published, under the title “The Third Balkan War”, with a foreword by Morton Abramovic and an introduction by Ambassador George Kenan.

35 Dimitrije Tucović, *Srbija i Albanija: jedan prilog kritici zavojevačke politike srpske buržoazije*, Socijalistička knjižara, Beograd 1914.

36 Marija Todorova, *Imaginary Balkan*, Čigoja štampa, Beograd 1999, 15–21.

of the Carnegie Commission's report), the way in which the dominant narrative about them was created today (the interpretation of Tucović's work is heavily influenced by the narrative formed during communism) nor do they subject them to their own analysis, but mostly uncritically convey the conclusions of other authors (Čubilović's lecture is interpreted under the great influence of Albanian historiography and especially the works of Sabrina Ramet).

Finally, it should be pointed out that in all three books one can find a considerable number of statements that are disputed or even clearly wrong. Most often, this is the case with citing various numbers and estimates. An example can be the estimate of the number of victims during the demonstrations and attempted rebellion of the Albanians in Kosovo in 1981. Malcolm and Vickers state the official death toll, nine, but immediately question it and cite various estimates. Both mention Albanian claims that the number of dead could be up to 1,000, but then dispute it as unlikely.³⁷ Furthermore, they cite the figure of a possible 300 dead, which reached the literature from a later report by Amnesty International. Tim Judah's statements are very illustrative of his approach to writing about the Kosovo crisis. He states that "officially" 57 people died and that the real number could easily be several hundred. The figure of 57 dead is certainly not official nor does it appear in any report or book about the Kosovo crisis. How Judah arrived at this, according to him, "official" number will remain a mystery. This attitude towards the facts was not foreign to him in several other places in the book. For example, he claims that hundreds of Albanians were arrested in the province of Kosovo during 1979.³⁸ The truth is, however, that in the period from 1979 to 1981, a total of 27 Albanians were convicted of separatism.³⁹ Furthermore, Judah cites a series of obviously fabricated data that Albanian propaganda has put out, such as the one that "in the eight years since the demonstration, 584,373 Kosovo Albanians." [...] i.e. half of the adult population has been arrested, interrogated, detained or sentenced."⁴⁰ This number was mentioned by Redžep Čosja in an interview and it has been completely fabricated. As for the actual number of victims during the demonstrations in 1981 - in the books of the Albanian historians from Kosovo, Sabila Kechmezi-Bas and Etem Ceku, it is stated that eight demonstrators and one policeman died.⁴¹

All of the above indicates that the three analyzed books should be read, understood and used exclusively with an understanding of the context of the moment in which they were created. Due to the lack of space in this paper, their flaws are mostly emphasized herewith. All three books have their virtues as well. Tim Judah personally witnessed a series of events during the nineties, spoke with dozens of well-informed personalities and built a network of contacts that allowed him to be well-informed. Miranda Vickers approached the writing

37 Noel Malcolm, *Kosovo*, 335; Miranda Vickers, *Between Serb and Albanian*, 198.

38 Tim Džuda, *Srbi*, 135.

39 Petar Ristanović, *Kosovsko pitanje*, 146.

40 Tim Džuda, *Kosovo*, 67.

41 Petar Ristanović, *Kosovsko pitanje*, 200.

of the book with enviable academic integrity. In numerous analyses, she tries to take a balanced point of view. The main flaw of her book is the insufficient knowledge of the history of Serbian-Albanian relations, but it is also obvious that she has a very good knowledge of the history of Albanians. Finally, Noel Malcolm's book was written with a bias and a clear political-ideological goal, which is visible in numerous segments. Still, the fact remains that the author used a wealth of sources in his work and the book can be very useful to careful researchers who will be able to read it as an obviously politically motivated work.

All three books analyzed in this paper should be viewed not only as histories, but also as a specific, research-worthy phenomenon in the history of the Kosovo issue. More than 20 years after the war between FR Yugoslavia and NATO, the titles of these books are mostly known only to historians and publicists who deal with the Kosovo problem. However, at the time of publication, the influence of these books was profound and far-reaching. Professor Leonard Cohen convincingly pointed out the connections between historiographical papers on the Yugoslav crisis and the protagonists of politics in global power centers, especially the USA.⁴²

Malcolm's "Short history of Kosovo" attracted a lot of media attention and caused controversy in the academic public. The book was praised and recommended by influential American and British politicians Richard Holbrooke, Paddy Ashdown, Norman Stone, Michael Foote... Holbrooke distributed the book to journalists and advised them to read it in order to understand the causes of the war.

The influence of the book "Serbs" by Tim Judah is vividly evidenced by the fact that Samantha Power used it when writing the book "Problem from Hell", which laid the foundation for the American policy of interventionism and "genocide prevention". The key chapter of the book is dedicated to Kosovo, and Tim Judah is the most quoted author in it.⁴³

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42 Lenard J. Cohen, *Serpent in the Bosom*, 451-480.

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Петар Р. РИСТАНОВИЋ

ИСТОРИЈА И/ИЛИ ПРОПАГАНДА: КЊИГЕ ТИМА ЏУДЕ, НОЕЛА МАЛКОЛМА И МИРАНДЕ ВИКЕРС О КОСОВУ И МЕТОХИЈИ

Резиме

У раду је анализиран методолошки приступ и изворна утемељеност књига троје утицајних британских аутора чије су књиге о Косову и Метохији, написане у предвечерје рата 1999. године, имале снажан утицај на доносиоце политичких одлука са Запада. Наведеним књигама дефинисан је данас доминантни дискурс и наратив у западној академској заједници и публицистици. Утицај књига је и даље велики будући да се по правилу налазе на списковима литературе новијих научних радова и монографија. Такав далекосежни утицај наводи на потребу да се преиспита њихова методолошка и изворна утемељеност.

Кључне речи: Косово и Метохија, косовско питање, Тим Џуда, Ноел Малколм, Миранда Викерс.

CIP - Каталогизација у публикацији
Народна библиотека Србије, Београд

303.4(082)
001.891(082)
316.74:001(082)

INTERNATIONAL thematic scientific conference Fundamental
Researches (2023 ; Leposavić)

International thematic proceedings Fundamental Researches
/ [edited and prepared by Nedjo Danilovic, Dragan Tancic]. -
Приштина [тј.] Лепосавић : Институт за српску културу =
Pristina [i. e.] Leposavic : Institut for Serbian Culture = Belgrade :
International Association of Social Science Methodologists, 2023
(Piriot : Pi-press). - 624 str. : ilustr. ; 24 cm

"The holding of the international thematic scientific conference and the
publication of this Proceedings were organizationally and financially
supported by the Ministry of Education, Science and Technological
Development of the Republic of Serbia, Academy of Sciences and Arts
of Serbian, Institute for Serbian Culture from Pristina - Leposavic and
MB University from Belgrade." --> Kolofon. - Tekst na više jezika. - Tiraž
150. - Begrüßungsrede des Akademikers Prof. Dr. Wolfgang Rohrbach,
Mitglied der Europäischen Akademie der Wissenschaften und Künste
aus Salzburg: str. 9-10. - Str. 11-15: Foreword / Nedo Danilović, Dragan
Tancić. - Str. 17-19: Introduction / Nedo Danilović. - Napomene i
bibliografske reference uz tekst. - Bibliografija uz svaki rad. - Резимеи.

ISBN 978-86-89025-86-6

а) Наука -- Истраживања -- Зборници б) Методологија науке --
Зборници

COBISS.SR-ID 122508297