

# THE CAUSES OF NUCLEAR WEAPONS PROLIFERATION – THE CASE OF THE MIDDLE EAST

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The subject of the research of this paper is nuclear weapons proliferation and its consequences for regional and world security. The research tries to explain the motive of states to take possession of nuclear weapons. Furthermore, the consequences for the region are considered if one of the countries comes into possession of nuclear weapons. The subject of the research mostly covers the Middle East region. Since the problem of proliferation is present outside this region, the research will include other cases of proliferation. Proliferation cases outside the Middle East region will provide a guideline for understanding proliferation in this region and try to explain the causes of nuclear weapons proliferation in the world.

*Key words: nuclear weapons, Middle East, proliferation, military power, security*

## Introduction

Nuclear weapons proliferation is one of the greatest security threats in the modern world. The great efforts of the international community to prevent an increase in the number of nuclear states have been accompanied by economic, political and military pressures and threats against states that seek to come into possession of nuclear weapons. However, all these pressures are not enough to deter states seeking to produce nuclear weapons from such intentions. A great number of states have given up the development of nuclear weapons, or the use of nuclear technology for civilian purposes, while some countries are trying to develop a nuclear program and seek to produce nuclear weapons, despite pressures from the international community. A special security challenge for the international community is the nuclear program of Iran, as well as the consequences for the Middle East region if Iran develops nuclear weapons. Concerns by a part of the

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international community, especially the West and Israel, that nuclear Iran would destabilize the region and awaken its expansionist aspirations that could result in large-scale wars are just a part of security threats. Having in mind that nuclear weapons are also a status symbol, a symbol of great military power and technological development, the question arises as to how, and in what way, the Middle East countries that aspire to the throne of a regional leader would react, i.e. whether other countries in the region would start the development of nuclear weapons.

The main research question is what the motive of the Middle East countries to possess nuclear weapons is. Within this question, an attempt is made to provide an answer to the question of what the consequences for the regional security would be if a country came into possession of nuclear weapons. The motive is considered within the influence of the type of regime, security threats, aspirations for international and regional positioning, as well as for solving interpolitical problems.

The development of the production process of nuclear weapons and nuclear technology in the Middle East, as well as the consequences for the security of this region, can be predicted by answering the research questions and processing the given topic of the paper. Moreover, the results of the research can be used to compare the results of other research in this field and can contribute to increasing the knowledge base on nuclear weapons proliferation.

## The causes of nuclear weapons proliferation

There are conflicting opinions about the process of nuclear weapons proliferation. According to an opinion, nuclear weapons strengthen peace between nuclear states, and according to the other one, nuclear weapons proliferation increases the danger of the outbreak of nuclear conflicts. In compliance with these interpretations, there are also conflicting opinions about the causes of proliferation.

The states' aspiration to come into possession of nuclear weapons is interpreted as the desire to deter attacks from other states because it is believed that these weapons are primarily defensive. However, nuclear weapons are also considered as offensive weapons, i.e. as a means by which an enemy, under the threat of a nuclear attack, is forced into actions that it would not have done in the absence of such a threat.

The school of realism believes that it is in the nature of state to strive to acquire, preserve and increase its military power because it is the guarantor of the survival and development of state and that nuclear weapons are the most convincing means of deterring attacks from other states. In this context, structural realism advocates the view that nuclear weapons proliferation diminishes the possibility of the outbreak of armed conflicts by nuclear states and that proliferation strengthens peace between nuclear powers. On the other hand, liberalism sees the danger of nuclear weapons proliferation, believing that world peace requires the reduction in its nuclear arsenal and the prevention of the increase in the number of nuclear states. The most

effective way to stop proliferation is through political and economic pressures from the international community. The very existence of nuclear weapons, according to liberals, represents a potential danger from nuclear holocaust.

It should be said that an insufficient number of papers deal with theoretical approaches, methods and techniques of the research on nuclear weapons proliferation. This is explained by a small number of proliferation cases, information that is difficult to access, as well as the necessary complex knowledge in the field of nuclear technology and military sciences. If the research were to cover all experiences in this field, perhaps each of them would provide an answer or clarification of this problem.

One of the papers that sought to provide a more complete answer to the causes of nuclear weapons proliferation through a comprehensive analysis of various methods and approaches is the paper by Scott Sagan (Sagan, 2011, pp. 225-241) „The causes of nuclear weapons proliferation“. Namely, Sagan tried to clarify the difference between a civilian nuclear program and the use of nuclear technology for military purpose, which are more than important for understanding this problem. Then, he analyzed previous papers that tried to explain the causes of nuclear weapons proliferation, both from the aspect of international law, the role of the type of regime and individuals in top brass, and from the point of view of security challenges and threats. The paper set up in this way has provided guidelines for further research in this field and points to shortcomings in previous research.

Sagan's theoretical and empirical research is framed by the very nature of the problem of the research question. Namely, Sagan supports the argument of the realistic school of international relations that states develop nuclear weapons when they face security challenges, and that this is one of the motives for developing a military nuclear program, and the focus on security issues would not clarify all cases of proliferation. The constructivist approach would clarify the role of nuclear weapons as a status symbol and a means to better position of state on the international stage and in the region. On the other hand, Sagan believes, understanding decisions of an individual and influencing their decision-making can contribute to a better understanding of the problem of proliferation. Furthermore, the normative approach can play an important role in understanding the international legal position of nuclear weapons and treaties related to this problem and provide answers to possible international legal solutions. It can be concluded that Sagan uses several theoretical approaches, i.e. by analyzing different approaches he tries to explain the causes of nuclear weapons proliferation.

In his research, Sagan mentions the countries that have developed nuclear weapons, those that have produced them and those that have left a nuclear program. Then he conducts the analysis of the literature related to the connection between nuclear energy and the production of nuclear weapons. He also presents his findings on the decisions of states to produce nuclear weapons. Then he analyzes the role of the NPT Treaty (Non-Proliferation Treaty) in the decision-making process for the development of nuclear weapons in democratic and non-democratic states. Finally, Sagan emphasizes the weaknesses and shortcomings of previous research.

The research covers the period from 1945 - since the first use of nuclear bomb *in vivo* to the present day. It includes the countries that have produced nuclear weapons, those that have begun to develop them, as well as the countries that have failed to develop them. There is an agreement on the fact which countries possess nuclear weapons today, but not on when „the second generation“ countries have acquired these weapons.

The research task is further complicated by a small number of the cases of the establishment of nuclear states, as well as by incomplete and sometimes inaccessible information about the period of origin of a nuclear program and its development. Moreover, as Sagan states, it is necessary to clarify the concept of nuclear capability, i.e. which indicators show that state is capable of developing nuclear weapons.

## Atoms for peace and atoms for war

The use of nuclear energy for civilian purposes and the development of a military nuclear program often cause great confusion and misunderstanding in the way it is used. Namely, a great number of countries use nuclear energy in the production of electricity or for other non-military purposes, which does not mean that they are capable or intend to develop nuclear weapons. Whether a civilian nuclear program will be used to develop a military nuclear program depends on the decision of state. However, some indicators of the state's level of technological development may indicate its capability to develop a military nuclear program.

Meyer (1984, pp. 5-18) lists a set of technical and economic indicators that should show the state's capability to produce nuclear weapons, as well as two intermediate variables related to the operation of nuclear reactors, as well as the automotive and electronic production. On the basis of these indicators, Meyer identified 34 countries that have a latent capability to produce nuclear weapons. A decade later, Stoll (2013, pp. 113-118) states the fact that enriched uranium is available in the world market and that it is not necessary for state to have technology for uranium enrichment. He believes that in 1992, 48 countries had a latent capability to produce nuclear weapons. Hymans (2013, pp. 162-177) accepts Stoll's argument, but sought to explain the gap between the number of states capable of producing nuclear weapons and the number of states possessing them. Namely, for the production of nuclear weapons, highly enriched uranium or plutonium, which is not in the market, is necessary. However, not all countries have nuclear technology and conditions for the production of highly enriched uranium. Dong-Joon & Gartzke (2014, pp. 167-194) believe that states which possess uranium or plutonium do not pose a danger to nuclear weapons proliferation because the mere possession of fissile material does not mean that state is technologically capable of developing nuclear weapons, nor that there is a political will to develop such weapons. On the other hand, the countries that would like to come into possession of nuclear weapons will achieve so.

Sagan believes that the mentioned examples of the research move away from the answer to the question of what the causes of nuclear weapons proliferation are. Namely, they use indirect variables that are easily accessible, and do not collect data that reflect the essential variables of real interest. The researchers interested in measuring nuclear military capability can set up databases related to experience and expertise in weapons production, rather than using the existing data on television and car production. Furthermore, open markets, where it is possible to procure nuclear material, do not say much about which countries will use that material for the production of nuclear weapons. Sagan also draws attention to the use of two terms as synonyms, which need to be distinguished. Military nuclear capability and nuclear latency represent different analytical frameworks. Military nuclear capability refers to the self-sufficiency of state to produce nuclear weapons, i.e. to dispose of fissile materials and technological capability, while latent capability is a measure of how much time state needs to produce nuclear weapons, if it decides to do so. If we focus our attention on the possession of fissile material and nuclear technology, we will get research results that are far from explaining nuclear weapons proliferation. Many countries have fissile materials and nuclear technology, but have not decided to produce nuclear weapons. The answer to the question of what the causes of nuclear weapons proliferation are, according to Sagan, should be sought in the analysis of the economy of nuclear energy, the export of fissile materials and the regime of trade control and development of nuclear materials and technology.

## International agreements in the field of nuclear fuel trade

Sagan singles out two papers that make a significant contribution to understanding the connection between nuclear energy and nuclear weapons. Both papers seek to explain the relationship between nuclear energy and nuclear weapons by the relationship between the export of nuclear technology and export-related agreement and the production of nuclear technology and nuclear fuel. Moreover, these papers present the technology for nuclear fuel processing, the necessary knowledge and training of personnel for the work in nuclear power plants, as well as the role and development of research reactors.

Kroenig (2013, p. 123) argues that "sensitive" nuclear assistance contributes to nuclear weapons proliferation and that providing information on the design and production of nuclear weapons, sales of fissile material, assistance in building uranium enrichment or plutonium processing plants are clear indicators that state strives for the development and acquisition of nuclear weapons. He also included gross domestic product, industrial capacities and rivalry with nuclear states, as indicators of state's intention to develop nuclear technology, which are in direct correlation with the elements of "sensitive" nuclear assistance. Kroenig tested his theory on the impact of this nuclear assistance on a case study of Israel, China and Pakistan. In this case study, he successfully tested his thesis, and he also tried to answer the que-

stion why some countries provide assistance to other countries, or provide technology in the production of nuclear weapons. He came to the conclusion that in addition to the economic benefits that exporters of nuclear technology have, there is also the following explanation: "An enemy of our enemy is our best customer". Thus he explains the influence of the security and political aspect of the sale of nuclear technology.

Unlike Kroenig, Fuhrmann (2013, pp. 7-41) implements in the research not only the provision of sensitive information on nuclear technology, but also the civilian use of nuclear energy. Namely, he believes that the development of a civilian nuclear program encourages nuclear weapons proliferation. Providing sensitive information on a nuclear program certainly affects nuclear weapons proliferation. However, the development of a civilian nuclear program also has the impact on increasing the number of nuclear states. Fuhrmann points to the fact that most countries, which received a nuclear program within the international Treaty on civilian development of this program, have not produced nuclear weapons, but claims that there is a strong causal relation between the production of nuclear weapons and cooperation agreements in the field of nuclear technology. Namely, Fuhrmann claims that in the countries that have an agreement on cooperation in the field of nuclear technology, there is a much higher degree of probability that they will launch a program for the development of nuclear weapons because it depends on security threats. Fuhrmann's analysis points to the importance of cooperation agreements in the field of nuclear technology, as an indicator in the study of nuclear weapons proliferation, but insufficiently reliable information on the beginning of the development of programs for the production of these weapons calls into question the conclusions he has drawn.

## Requirements for nuclear technology

The various studies that try to explain the motives of states to acquire or produce nuclear weapons largely examine different incentives and are often focused on actors involved in making important state decisions. The studies have relied mainly on theories of international relations, in order to evaluate the set hypotheses. Such an example is Solingen's (1994, pp. 126-159) article from 1994 entitled "Political Economy for Nuclear Restraint", which argues that liberal governments are more willing to accept regional proliferation than nationalist or radical-confessional political structure. Unlike Solingen, who considers the influence of nature and the type of government on nuclear weapons proliferation, Sagan (1996, pp. 54-86) in his article "Three models in search of a bomb" from 1996 tries, on the basis of security threats, national political interests and international norms, to explain state's decision to produce nuclear weapons. Sagan concludes that security threat is the strongest motive for making a decision on starting the development of nuclear weapons, while national political interests and international norms are stimulating, but not decisive factors that influence a political decision.

The decades-long debate about the causes of nuclear weapons proliferation has been followed by diverse arguments about the motives for their production. Some researchers emphasize the importance of security threats, others believe that economic interests are the main driver or motive for acquiring nuclear weapons, while constructivist theories point to the importance of normative restrictions and changes in the identity of individuals, government or leader.

New quantitative studies on the motives of states for proliferation, in an effort to gain new insights into the motives of states to develop nuclear weapons, use a great amount of data, various methods for coding key variables and statistical methods. However, the research set up in this way has not given the desired results. Singh and Way believe that enduring rivalries and armed disputes are the strongest motives for acquiring nuclear weapons, while Dong-Joon & Gartzke believe that rivalry is not the main motive for their production, but that it is gaining nuclear power status, and that national and international security threats also pose a strong incentive to produce such weapons.

## The impact of regime on the development of nuclear weapons

Sagan points out the case studies of Itty Abraham, Jacques Hymans and Etel Solingen as particularly important for understanding nuclear weapons proliferation, as well as the use of these studies in testing theories of the researchers in this field. Namely, the studies are aimed at understanding the role of high-ranking government officials in nuclear weapons proliferation and include specific national and regional cases of proliferation.

Abraham introduces a new concept of "nuclear ambivalence" into the study of the causes of proliferation. He claims that there is a great misunderstanding of the relation between a civilian nuclear program and the development of nuclear weapons.

The papers of most researchers monitor the development of states' nuclear technology and try to explain whether government develops only a civilian nuclear program or seeks to acquire a latent or full capability to develop nuclear weapons. Namely, thus, two different fields are studied - whether government looks for nuclear weapons or not, and whether it hides its facilities to cover up its intentions.

Abraham (Itty, 2009, pp. 106-136) believes that power holders do not have clear and precise intentions for the development of military nuclear technology. Their decision to take such a step is a consequence of a wide range of political and social factors. On the example of the Indian nuclear program, Abraham argues that scientists and bureaucrats in India were most committed to the development of such a program, and they had a great political influence in state and a high degree of autonomy in the state apparatus. Furthermore, according to Abraham, nuclear ambivalence is a common motive for program development, especially in less developed countries.

Hymans also contributes to the knowledge of proliferation. Namely, he claims that a small number of leaders would like to develop nuclear weapons because the development of such a program is "a revolutionary decision and a leap into darkness" (Hymans, 2006, pp. 1-46). The decision on the development of nuclear weapons brings great uncertainty because the question is whether state will succeed in developing the program at all, but also whether it will increase or decrease national security. That is why proliferation is a rare case, not because of institutional constraints or political pressures, but because there is a small number of states that need to be restricted in the development of nuclear weapons. The basis of the psychological theory developed by Hymans is the causal relation between the nationalist identity of some leaders, who see their nation in a natural state of enmity with other nations, and the decision to develop nuclear weapons. For such leaders, who consider themselves and their nation superior to other nations, especially hostile ones, the acquisition of nuclear weapons is not only a rational calculation of benefits and costs for state or their political party, but also for personal promotion. As a part of the research set up in this way, Hymans concluded that in the case of the development of Argentinian nuclear program, it was not focused on the production of nuclear weapons, but on nuclear fuel, which is necessary for the launch of nuclear submarines. In his research, Hymans does not rely on historical case studies in deciding to initiate the development of a military nuclear program in order to evaluate its key independent variable, as this would be problematic for inductively derived theory, but develops the concept of "the national identity" and uses quantitative content analysis of the public address by the highest political power holder, in order to assess whether a leader can be classified as an "opposition nationalist".

Using comparative analysis of the development of nuclear weapons in Asia and the Middle East, Solingen (2007, pp. 3-22) compares the behaviour of these countries during the development of nuclear technology. The focus of the research is on the impact of global economic integration on the development of nuclear weapons. Solingen tries to explain the role of global economic integration in political decision-making, as well as the development of nuclear weapons. He concludes that the states or leaders arguing for global economic integration are less inclined to develop nuclear weapons, while the states that rely on their market and develop national identity are more inclined to develop these weapons. The theory set up in this way considers the cause of nuclear weapons proliferation from other perspective and explains the impact of global economic integration on the development of a military nuclear program, but it is difficult to generalize this theory and implement it to all cases. A great contribution to the development of the knowledge fund on nuclear weapons proliferation is reflected in the time distance in the research. Namely, the research includes the period from signing the NPT Treaty to the present day, which makes the author put a clear distance in the development of nuclear weapons before and after signing the Treaty, as a form of normative and institutional restrictions on the development of nuclear weapons.

## Treaty on the Non-Proliferation of Nuclear Weapons, the type of regime and nuclear proliferation

Despite the lack of consensus on the causes of nuclear weapons proliferation, both case studies and quantitative research agree that the regime of Treaty on the Non-Proliferation of Nuclear Weapons (NPT)<sup>1</sup> has no or minimal impact on nuclear weapons proliferation. The widespread use and availability of nuclear technology makes it difficult to achieve full control over the non-proliferation regime. Hymans (2006a, pp. 204-226) believes that countries that possess nuclear technology have a greater impact on proliferation than the NPT Treaty. Gartzke (2014a, pp. 167-194) argues that the effect of curbing nuclear weapons proliferation by the NPT Treaty is overcome by the effect of nuclear weapons proliferation resulting from the demand and supply of nuclear technology. Solingen (2007a, p. 69) raises the question of whether a greater number of states would opt for the development of nuclear weapons if there was no NPT Treaty. Hardly, Solingen concludes.

Betts (2001, pp. 51–85) believes that the NPT Treaty arose as a consequence of the cessation of nuclear weapons proliferation and is by no means the cause or guarantee of non-proliferation. Namely, the states that have been left out of the Treaty have developed nuclear weapons whereas some signatories of the Treaty have produced them or are trying to master the technology for their production. Within this research, it seems that the influence, which the Treaty has had on proliferation, has been ignored. Namely, the signatories of the Treaty have committed themselves to some obligations, and also privileges. Regular inspections by the International Atomic Energy Agency are certainly the most effective way to control the development of nuclear technology. The complete success in the development control is difficult to achieve, but control becomes more expensive and makes quick and efficient development of nuclear weapons difficult. Moreover, the Treaty is not fully effective in suppressing proliferation, but its non-compliance and avoidance of contractual obligations is a clear indicator that state is developing a program that can be used for military purpose. No matter how important the NPT Treaty is for understanding nuclear weapons proliferation, it is of secondary importance. Most research try to define

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<sup>1</sup> Treaty on the Non-Proliferation of Nuclear Weapons (NPT – Nuclear Non-Proliferation Treaty). After the United States conducted the first nuclear weapons test in Alamogordo, New Mexico, on July 16, 1945, and then dropped atomic bombs on Hiroshima and Nagasaki in August, other countries began developing nuclear weapons. Thus, the USSR conducted the first nuclear test in 1949, Great Britain in 1952, France in 1960 and China in 1964. In the 1950s, intensive negotiations began on a Treaty that would prevent the further spread of nuclear weapons. The Treaty was finally concluded in 1968, and entered into force in 1970. To date, it has been ratified by 187 countries. It introduces the status of nuclear and non-nuclear states. The countries without nuclear weapons have pledged not to develop them, and the countries that possessed them have pledged not to sell them to other countries or the technology to produce them. The surveillance measures are carried out by the Vienna-based International Atomic Energy Agency. Available at: <http://www.iaea.org/Publications/Documents/Treaties/npt.html>, accessed on September 4, 2013.

the relationship between the type of regime in making a decision on the development of nuclear weapons. Dong-Joon & Gartzke believe that democracies are more susceptible to the influence of public opinion and that in case of nationalist pressure, they will decide to develop a program for the production of nuclear weapons, while partial democracies will develop a program due to interstate circumstances.

Furthermore, Dong-Joon & Gartzke, as well as Singh and Way, Kroenig and Fuhrmann believe that democratic regimes are much more likely to start developing a program of nuclear weapons production. Namely, the power in democratic regimes strives to follow the demands of the people, in order to survive or strengthen its position. If the demands for the development of nuclear weapons are rather pronounced, a democratic regime will much easier opt for that program than totalitarian or autocratic regimes. In totalitarian regimes, the degree of control of public opinion is so high that it is almost impossible to discern the real interests and wishes of the people. However, these studies, while contributing to the knowledge fund on nuclear weapons proliferation and the role of the type of regime in the proliferation process, ignore the fact that a great number of democratic regimes has acquired nuclear weapons and nuclear technology before signing the NPT Treaty, and that many democracies have left the nuclear weapons development program or waived it.

## The nuclear program of Iran and its security implications for the Middle East

From the first hints that Iran is trying to acquire nuclear weapons, until today, there is a struggle of a part of the world public to prevent further development of its nuclear program. However, Iran continues to modernize its program with the help of countries that do not agree with the assumptions that this country will use it for military purpose. With small deviations from the mentioned pattern of behaviour, only the rhetoric of the conflicting parties has changed. The United States, Israel and some Western countries have sharpened their criticism and are increasingly threatening military intervention, while Iran is threatening revenge on Israel.

Russia and China, as permanent members of the United Nations Security Council, call for peace and restraint, especially from military intervention, and on the other hand, help Iran with the development of its nuclear program, but, as they say, within the NPT Treaty. The non-compliance of states to condemn the nuclear program of Iran is also noticeable at regional level. Some Middle Eastern countries believe that Iran claims the right to develop a nuclear program until it is proven that it does not use it for peaceful purpose. It should be mentioned that a great number of countries use this program for the production of electricity and for medical purposes.

However, not all Middle Eastern countries agree with this statement. Namely, some countries believe that Iran can easily produce nuclear weapons and destabilize the entire region, bearing in mind the statements of Iranian officials that Israel should not exist. Moreover, the problem is that both Turkey and Saudi Arabia believe

that they should develop nuclear weapons in order to protect themselves and deter other countries from the attacks by nuclear weapons. The motive for mastering nuclear technology of Turkey and Saudi Arabia is not only to deter other country from a nuclear attack, but also to gain the status of regional power because nuclear weapons are the status and symbol of power, both military and technological.

The nature of nuclear weapons, as well as the danger of proliferation, has been fully understood by the US military and political strategists as a security problem that the US faces at the beginning of the third millennium. The main problems and security challenges are related to solving the problem of international terrorism and nuclear weapons proliferation. The doctrine or strategy that should answer the existing problems is contained in the National Security Strategy, which was adopted by the US Congress in September 2002, and presented to the public in December 2002 by George Bush. The Strategy meant not only to attack an enemy when it is suspected that it will attack with nuclear weapons, but also to carry out preventive strikes on countries that are trying to come into possession of technology for the production of nuclear weapons. The „axis of evil“ or states that have been identified as the greatest threat to the US security - Iraq, Iran and North Korea, were the first target for the implementation of the new strategy that included preventive strikes.

The pressures on Iran from a part of the international community did not achieve the desired effect, so this country continued to develop its nuclear program, as well as its ballistic missile development program, and announced the production of the Shahab-4 ballistic missile with a range of about 2,000 kilometers. The reaction of Israel, in addition to constant pressures, was to negotiate with the US the delivery of F-16 fighter jets, in order to maintain military advantage and strengthen the ability of Israel to respond to military threats. The security dilemma in this case was that by increasing military arsenal and modernizing it, the security of state increases and the risk of enemy attacks decreases. In the early years of Iranian nuclear program, Iran and Israel began the arms race. The United States and some Western countries have helped Israel increase its military arsenal, while Russia, China and North Korea have helped Iran develop a nuclear program and modernize conventional weapons. However, as time went on, an increasing number of countries in the region felt the danger of such course of events, so they also began to arm themselves further. In addition to increasing its conventional arsenal, Saudi Arabia and Turkey have also begun to consider building nuclear reactors and producing nuclear weapons.

The mentioned examples of the behaviour of the Middle Eastern countries and great powers towards Iranian nuclear program clearly lead to the conclusion that the development of Iranian nuclear technology is a great security threat to the Middle East region. Iranian efforts to produce nuclear warheads are only a part of security challenges and threats. Iranian current missile arsenal - armed nuclear warheads - would only threaten countries in the region. If Iran came into possession of long-range missiles or intercontinental ballistic missiles, the map of countries that would be considered endangered would be much larger. Accordingly, the development of Iranian nuclear program has to be monitored from the aspect of the development of

nuclear technology and the development of missile program. This gives a closer picture of Iranian intentions: whether nuclear technology would be used to produce electricity for medical or military purposes.

## Research agenda proposal

In order to make progress in the research on the possible development of nuclear weapons proliferation process, and also to better explain the nuclear past, researchers should take advantage of both quantitative research and case studies. Furthermore, accurate and precise knowledge in the field of technical and technological conditions for the development of nuclear technology is necessary, as well as the knowledge of institutional conditions within which decisions have been made on the development of nuclear weapons or abandonment of such a program. Specifically, researchers should focus on four main questions.

There is a great number of papers that deal with the impact of international political economy or human rights agreements on institutions whereas a small number of studies deal with the impact of international security agreements, particularly agreements on nuclear weapons proliferation and the NPT Treaty. Neoliberal institutional theory recognizes the solution to proliferation in this Treaty. Namely, Article 1 of the NPT Treaty obliges nuclear states not to supply other states with nuclear weapons, which also reflects the logic of the behaviour of nuclear states. Namely, the nuclear state is not interested in ceding nuclear technology to its allies or other states, provided that other nuclear states do the same. Thus, proliferation is controlled, and the officials of the International Atomic Energy Agency have the authority to check the state statements on the ground. In this way, states ensure that they will not be in situations of secretly developing a program or be exposed to political and economic pressure. The realistic approach believes that the NPT Treaty is above all hypocritical. Namely, item 4 of this Treaty obliges nuclear states to reduce their nuclear arsenals, while the states that accede to the Treaty are prohibited from developing nuclear weapons. Nuclear states have not reduced their nuclear potential, but have increased it a lot, without any consequences, while non-nuclear signatories are strictly prohibited from developing nuclear weapons. Thus, nuclear states of the first and second order are established. The international Treaty has given some states a certain right that is forbidden to other states. A general theory of how the NPT Treaty functions does not provide the necessary knowledge about nuclear weapons proliferation, but the motives of states to sign the Treaty may explain the different ways in which states develop nuclear technology. States have acceded to the Treaty in order to ensure regional stability, that is, to remove the fear that regional rival will approach the development of nuclear weapons, or to show that they accept the norms and political trends of the world order. Moreover, accession to the Treaty can serve as a measure to cover up the already started nuclear program development. The diverse and complex motives of states to accede to the Treaty make it

impossible for each individual case to be clarified by the status of state in the NPT Treaty, especially since state's relationship to the Treaty is not an invariable category, but it is certain that a possible revision of the Treaty or equalization of the status and rights of all signatory states would greatly affect nuclear weapons proliferation. Among other things, the impact of the Treaty on proliferation can be considered in this context, as well.

Research also needs to include the impact of the type of regime on nuclear weapons proliferation. Democratic regimes consistently implement contractual obligations arising from the NPT Treaty, but the question is why it is so. Are democratic states more constrained by internal organization in respecting international norms and obligations than non-democratic states, or do they accede only to those treaties that they will fully respect? Do democratic leaders feel they are more limited than undemocratic ones? Are they afraid of "voters' penalties" if they are disclosed for not fulfilling their contractual obligations, or they believe that the probability of being caught cheating is high due to the requirements for transparency of the government and protection of whistle-blowers?

Moreover, in the research of the influence of the regime nature on nuclear weapons proliferation, studies on the relationship between the political leadership, scientific community and military leadership should be included.

More interdisciplinary research in the field of nuclear energy proliferation and its impact on latent capability for nuclear weapons production, as well as better understanding of the term "time line" for nuclear weapons production, would greatly help to understand and solve the problem of nuclear proliferation. In order to come to the most accurate answers, it is necessary to accept the approach that the path to acquiring nuclear weapons is unique for each nuclear state. Future efforts to understand nuclear latency and proliferation will be most useful if we study the temporal relationship between the demand for nuclear weapons and their acquisition rather than considering these two "sides" of nuclear weapons proliferation as separate issues. Three potential links are obvious.

Firstly, there is consideration of how much the government is engaged in providing funds for the development of a nuclear program. If state makes great efforts to acquire nuclear technology and resources necessary for the development of a nuclear program, it is much more certain that it will start the development of nuclear weapons than if state uses a regular procedure in the development of nuclear technology. Secondly, there is a high degree of interdependence between nuclear latency, or nuclear capability, and the intentions of actors arguing for the development of nuclear weapons production program, who will find the development of nuclear weapons greatly facilitated. Thirdly, a high degree of latency of a nuclear program can make it easier for individuals or parties in power for a short period of time to implement the decision to develop nuclear weapons in order to gain internal political support.

Three potential links are obvious. How does the use of civilian nuclear technology affect nuclear weapons proliferation, does it hinder or facilitate proliferation, does failure to efficiently produce nuclear energy increase the likelihood of proliferation?

An important determinant of the nuclear future will be the extent to which the spread of nuclear energy affects the creation of actors in different countries, who seek to keep nuclear technology within the civilian agenda and curb “the nuclear bureaucracy” in its efforts to develop a nuclear weapons program. The way of using nuclear technology also depends on the degree of the success of the development of a nuclear program. The states that successfully develop a nuclear program enjoy the benefits of nuclear power generation and are less likely to engage in covert and illicit activities for the fear of threatening the benefits of nuclear power generation, while the states with less success in developing a nuclear program try to make up for losses in the development of a program by selling the technology to the states that are secretly developing a nuclear program.

New research on nuclear proliferation is underway. However, more case studies on decision-making for or against nuclear weapons proliferation are needed to expand knowledge and test the causal mechanisms we have established in our research. A greater number of quantitative research is necessary for the greatest possible degree of the generalization of our theories. Moreover, a greater number of interdisciplinary studies are needed, which would, inter alia, include technical knowledge about nuclear technology, and also findings in the field of international law that defines this field. Such complex research agendas are necessary in order to better understand the nuclear past and provide more certain predictions about the nuclear future.

## *Conclusion*

The analyzed paper tries to answer the question of the causes of nuclear weapons proliferation and represents an important guideline for understanding and explaining the phenomenon of nuclear weapons proliferation. The results of the research, as well as the findings from Sagan's analysis, can be implemented both to the research of each individual case and to the research of proliferation in the region or worldwide. Studying the causes of nuclear weapons proliferation in the Middle East would be one of the necessary links to understand proliferation, and could serve to further research for comparing the causes of proliferation in relation to other regions and perhaps provide common determinants for different or all regions.

In an effort to answer the question of what the motives of states are to produce nuclear weapons, Sagan has approached very cautiously. Firstly, he has tried to explain the difference between the nuclear technology used for civilian purpose and the nuclear technology for the development of nuclear weapons. He has also explained the relation between civilian and military nuclear technology, that is, how a civilian nuclear program can grow into a military one. This approach represents a signi-

ficant contribution in answering the posed question. The main objection in this part of the analysis is that Sagan neglects, or ignores, to include in his research the knowledge from the field of natural sciences, which would clarify the terms: nuclear reactor, nuclear centrifuges, enriched uranium... With clearly explained terms, it would be easier for every reader to follow the research in this field. If it is assumed that all researchers in the field of international relations know and understand the main principles of the functioning of nuclear technology and nuclear weapons generation, we can find ourselves led astray. Namely, it can be concluded that a small number of researchers in this field understand what percentage of uranium has to be enriched in order to be used in the production of a nuclear warhead, then what nuclear centrifuges or nuclear power plants are. The main findings of the process of nuclear energy generation and the use of nuclear technology, as well as the explanation of these terms, would help to better understand the degree of development of nuclear technology in a country. The nuclear program of Iran would be easier to understand if it were known why the problem is if Iran enriches uranium in a percentage higher than 20%, or why Israel and US have the fear of the modern nuclear centrifuges that this country has recently acquired. Therefore, regardless of whether it is a case study or an attempt to provide an answer for a great number of cases, it is necessary, above all, to get acquainted with the main concepts and terms in the field of physics, military sciences or some other scientific discipline.

Moreover, the use of economic and technical indicators, as well as the overall technological development, can lead the researcher to a wrong conclusion. Economically and technologically developed countries are not always interested in the development of nuclear weapons, and some of them do not use nuclear energy even for civilian purposes. The data on the degree of the development of military technology, nanotechnology and the development of satellites, which are more than necessary for the development of nuclear weapons, can be important for the research on nuclear weapons proliferation. The quantitative research that has provided a set of data on the development of the automotive or electronic industry for civilian purposes can be used to study the economic development of a country, but it cannot answer the question of whether that country is capable of developing nuclear weapons and whether there is a will to do so. On the other hand, the quantitative research on the development of military missile technology, space program (satellite development) or nanotechnology can be indicators that the state is striving to develop nuclear weapons. It cannot be said with certainty that state develops nuclear weapons if it has developed all the above-mentioned programs, but the degree of certainty is much higher than in research that takes into account the development of the automotive or civilian electronic industry.

In considering the conditions for the development of nuclear technology, Sagan believes that it is necessary to explain why some countries provide assistance to other countries in the development of nuclear technology, especially covert assistance that can be used to develop a military program. Stating economic reasons as one of the motives for providing assistance in the development of nuclear

technology, Sagan also points out the political motive as one of the decisive factors. Namely, guided by the idea that an enemy of my enemy is the best buyer, states, in addition to gaining economic benefits, also gain political points by weakening the military potential of their rival. Thus, states would like to position themselves as regional leaders or strive to take the best possible position on the international scene. The support that Russia and China provide to Iran in the development of military and nuclear technology, in addition to economic motives, is based on the desire to balance the military dominance of the US ally Israel in the Middle East and to position Iran, a military and political ally of China and Russia, as a regional leader. The economic and political motives in assisting in the development of nuclear technology are unavoidable determinants in understanding nuclear weapons proliferation.

After explaining the motives for providing nuclear assistance, Sagan has analyzed papers that clarify the motives of states to start developing nuclear technology. He has singled out the role of the holders of power, bureaucracy, scientific community, as well as a wide range of interstate political and social factors. First of all, Sagan believes that security factor is the strongest driving force for starting the development of a nuclear program. Furthermore, nuclear weapons are a status symbol, which additionally influences the decision-making on the development of this program. Considering the problem of proliferation from safety aspect, as well as enjoying the status symbol of nuclear power, largely explains the behaviour of the Middle Eastern states and their aspiration to develop nuclear technology. Security threats explain the development of Israeli nuclear program, as well as the constant improvement of Iranian nuclear program. Moreover, the nature of power, as well as its division and the role of non-state and state actors in the structures of institutional and spiritual power, represent a complex analytical framework, which is necessary for understanding the decision-making process in the Middle Eastern countries. In his analysis, Sagan has included the research on security challenges and the behaviour of individuals in the leadership in the decision-making process, which is an important guideline for understanding nuclear weapons proliferation, but has not sufficiently addressed the aspirations of states to position themselves as regional leaders. Namely, security motive, i.e. the acquisition of nuclear weapons as a means of deterring attacks by other states is certainly a strong argument, but the states aspiring to become regional leaders have to prove that they are capable of providing protection to the gathering states, as well. In such a case, nuclear weapons are not just a means of deterring attacks on a country, but on the entire region. In that context, one can understand the behaviour of the state that aspires to the throne of a regional leader, as well as the behaviour of the surrounding states that favour a state as a regional leader. Of course, political decision-makers also take into account the consequences of initiating the process of developing nuclear technology for regional security, potential economic benefits, as well as the possibility that they will not succeed in the development of a nuclear program.

Some insight into the normative framework provides a picture of the position of nuclear weapons in international law. Treaty on the Non-Proliferation of Nuclear We-

apons, as well as the agreements on cooperation in the development of a civilian nuclear program, represent the legal framework for the development and possession of nuclear weapons and the development of nuclear technology for civilian purposes, as the only manner and measure for preventing nuclear weapons proliferation. The role and influence of the specialized bodies of the United Nations, as well as the agencies under its control, are of great importance in monitoring nuclear technology because they are the only ones authorized to control the development of a nuclear program in each UN member state. Certainly, the NPT Treaty and the International Atomic Energy Agency are indispensable determinants for the research on the nuclear program proliferation and, as Sagan points out, the NPT Treaty has played a significant role in controlling proliferation, but the research has to be expanded. The political dimension of the NPT Treaty should also be considered. The Treaty states that five countries possess nuclear weapons, but it is not explicit in that it is legal. It is also necessary to study different views and opinions on the legality of the use of nuclear weapons in armed conflicts. More precisely, the question is why there are different interpretations, ranging from the opinion that such an act is completely legitimate, to the interpretation that it is completely contrary to international law. International law unequivocally prohibits the use of weapons of mass destruction, such as chemical and biological weapons, while nuclear weapons, as the most destructive, have not yet been categorically prohibited by international law.

The research on nuclear weapons proliferation is a complex and demanding task, whose implementation needs the use of both quantitative and qualitative research. Moreover, it is necessary to consider and implement the results of the research of different theoretical views, using a wide range of methods and techniques. The results and conclusions of the research can help generalize the problem of nuclear weapons proliferation, but a great number of papers on this topic is necessary to achieve such a goal.

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## Узроци пролиферације нуклеарног оружја – случај Средњег истока

Предмет истраживања овог рада је пролиферација нуклеарног оружја и последице по регионалну и светску безбедност. Истраживањем се настоји објаснити мотив држава да дођу у посед нуклеарног оружја. Такође, разматрају се и последице по регион уколико једна од држава дође у посед нуклеарног оружја. Предмет истраживања у највећој мери обухвата регион Средњег истока. С обзиром да је проблем пролиферације присутан и ван овог региона, истраживање ће обухватити и друге случајеве пролиферације. Случајеви пролиферације ван региона Средњег истока представљаће смерницу за разумевање дешавања по питању пролиферације у овом региону и настојаће да објасне узроке пролиферације нуклеарног оружја у свету.

Кључне речи: *нуклеарно оружје, Средњи исток, пролиферација, војна моћ, безбедност*