

BIOTERRORISM AND ECOTERRORISM - CONTEMPORARY DANGERS FOR THE INTERNATIONAL SAFETY

BIOTERRORYZM I EKOTERRORYZM – ZAGROŻENIE WSPÓŁCZESNEGO ŚWIATA

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SUMMARY

Biological weapons have lots of advantages as a weapon used in terrorist attacks. First of all they are cheap, second they are very effective, thirdly are hard to uncover, fourth easy to manufacture, fifth point, toxic biological materials can be easily stored and hidden, sixth, they do deliver massive destruction. Cost effectiveness analysis done by Americans in 1969 showed that using conventional weapons per square kilometer cost 2,000 dollars, nuclear weapons cost 800 \$, chemical weapons cost 600 \$, but biological weapons cost only 1 \$ per square kilometer, and cause the same destruction to civilian population. Terrorists target: livestock, food plants, stored food, environment, potable water supplies, and total environment. The best known illness causing agents are: anthrax (*Bacillus anthracis*), aflatoxin, mycotoxin (*Clostridium botulinum*).

Key words: biological weapons, terrorist attacks, regionalization, globalization processes, anthrax.

STRESZCZENIE

Broń biologiczna ma wiele zalet jako środek wykorzystywany w zamachach terrorystycznych. Po pierwsze, jest tania, po drugie – bardzo skuteczna, po trzecie – trudna do wykrycia, po czwarte – łatwa w produkcji, po piąte – materiał biologiczny łatwo się przechowuje i ukrywa, po szóste – charakteryzuje ją masowy zasięg rażenia. Na podstawie analizy przeprowadzonej w 1969 roku przez ekspertów dla USA obliczono, że koszt wywołania tych samych strat w ludności cywilnej przy użyciu broni konwencjonalnej wynosi 2000 tys. \$ na 1 km²; nuklearnej 800 \$ na 1 km²; chemicznej ok. 600 \$ na 1 km²; biologicznej 1 \$ na 1 km². Celem ataku terrorystycznego stają się: zwierzęta hodowlane, uprawy roślinne, żywność, środowisko: ekosystem wodny, woda pitna [10]. Najbardziej znane obecnie czynniki chorobotwórcze to bakteria wąglika (*Bacillus anthracis*), aflatoksyna oraz mycotoksyna, toksyna botulinowa (*Clostridium botulinum*).

Słowa kluczowe: broń biologiczna, zamach terrorystyczny, globalizacja, regionalizacja, bakteria wąglika.

West

Contemporary world and its specifics is defined by the process of globalization. Globalization is in character international and also local. The notion of the global world means not only mutual actions, values and the outlooks, but also a place where separate regions, local, ethnic or fundamental movements are created. National ethnic or religious identities and ways to construct them also are subject to globalization movement [1].

The eighties and nineties of the last century were characterized by strong intensification of regionalisation and globalization processes. These processes influenced various aspects of life such as economics, politics, and social phenomena in all regions and countries of the world. Multitude of definitions in the literature does not allow for wider description of these phenomena, but only for pointing out a few, of their

most important elements. These are: time and space compression, erosion of borders, eliminating geographic barriers, free flow of goods, services, capital, investments, technologies, information, spreading economic activities beyond borders, acceleration of global interactions, intensification of global connections or making interdependencies more profound. Globalization then is a challenge on one hand, and a danger on the other hand.

While eliminating economic, political and geographic borders, globalization destroys and limits functions of the state. This causes free market economy, including freedom from state's controls, the state, which until recently has been the sovereign in this respect. Transnational organizations, associations and corporations gain new roles and become the main beneficiaries and entities in globalization [2].

Era of globalization

Regional integrations transform the present conditions for development to such degree, that they change substantially the basis, which influence prosperity of people and countries. On one hand unemployment rises due to demographic explosion, on the other hand, the natural resources are in short supply. Large numbers of people migrate due to economic reasons, this is a cause of dangerous frictions between countries. We are during the stage of creating civilization of information, then one, based on knowledge, which is now not only the wealth that can be renewed, then primarily creating itself. The civilization of information is one of the fundamental problems for the underdeveloped societies. Underdevelopment amplifies pathological activities and contributes to increases of wars eruption danger. Internal conflicts also erupt, since they are fueled by frustrating expectations, lack of justice, and rising social tensions. Proliferation of mass destruction weapons intensifies such danger.

Social questions emerge, and they threaten capabilities to satisfy the basic needs of the majority of a society. The volume of underground economies increases. Selling children, legally or illegally harvested organs, narcotics, weapons, illegal immigration, sex tourism, malnutrition, social pathologies, terrorism, all these are on the rise and are the only possible ways to handle problems at the family, local, professional and on the state level, and also to a significant degree on the international level [3]. Therefore, the most important qualitative changes in the contemporary world occur in the fields of micro technology, microbiology, information science, telecommunication and genetics. All of them reached a higher stage of development, and also a new role in intellectual capital, changes in economic and political conditions. Capitalism indeed, lost its most significant competitors socialism and communism in the ideological and practical aspect, both for over 130 years influenced transformation and adaptation capabilities of, and within capitalism [2].

Do these changes indicate “the end of history”? as F. Fukuyama maintains, or as maintains S. Huntington “collision of civilizations”?¹ The current ideologies were replaced by antagonisms between civilizations. Main models of political and economic development, each civilization creates its own civilization sepa-

ately. The most important issues that take place in the international arena pertain to cultural differences and result from them as well. Such cultural differences pertain to varying outlooks of people, society, morality and religion, language, traditions, liberties, or equality. S. Huntington lists seven contemporary civilizations of the world: the Chinese, Japanese, Hindu, Muslim, Western, Orthodox and Latin American. He also mentions, in a rather hypothetical manner, the African civilization (footnote by M.S.).

This background begets violence, and this violence has an international character. If the less powerful can not, by any known to them means, force their own will on the stronger, then they will resort to violent means. Terrorism is such means, and it often is the answer to terror [4]. One of the differences between terror and terrorism is: “reversal of proportion between the power and intimidation” [5].

Terrorism

We understand, these days, the notion of “terrorism” as: activities of organized extremists’ groups or organizations, which use force or threaten to use force, in pursuit to realize their aims. Terrorism in terms of violation of international laws is inextricably linked with selling people (usually young women), printing counterfeited money, sales of illegal drugs and psychotropic substances [6]. On the other hand terrorism, understood as applying violence by the weaker against the stronger, is to some degree, a social phenomenon bearing pathological symptoms. Such process is a social, and a political one, it is also very dynamic, constantly in the process of development, constantly being improved by fanatic minds subscribing to the philosophy of spreading fear.

In the era of globalization, technologic development and new scientific inventions, terrorists are looking for effective means to spread fear, publicize causes they fight for, and increase their bargaining power [7]. Therefore the fact, that people are especially terrified, during the recent years, by so called “super terrorism”, meaning using weapons of mass destruction such as: biological, chemical, radioactive and nuclear weapons, does not surprise anyone. Bio terrorism means using biological weapons in terrorist attacks. Various bacteria can be used, these include: anthrax, bubonic fever, smallpox etc. may be the most deadly bacteria and viruses in the world. The matter concerning toxins such as botulin looks similarly. Toxins are different from viruses and bacteria. They are not living substances generated by microorganisms originating from plants or animals. According to resolutions of Biological Weapons Convention of 1972, toxins are classified as biological weapons [8].

¹ Francis Fukuyama is an American philosopher and political scientist. He is an advisor to President Bush on matters of Bioethics. In 1989 Fukuyama published an article in “National Interest”- titled “The End of History?”, which became the basis for the book by the same title, in which he discusses his controversial theory about the ‘end of the world’. S. Huntington a sociologist and political scientist published in “Foreign Affairs” an article titled “Collision of Civilizations” in which he presented his thesis about shaping current global politics. According to his thesis, the most dangerous dimension of global politics will be conflicts between groups belonging to various civilizations. He elaborated on the same thesis in his book bearing the same title, but he did not place a question mark in the thesis.

Biological weapons have always been and will be one of the most terrible and dangerous of mass destruction weapons. Despite legal regulations forbidding the use of such weapons, there is still the danger of its use in wars and local conflicts, such weapons can also be used in terrorist attacks [9].

Bioterrorism and Ecoterrorism

Biological weapons have lots of advantages as a weapon used in terrorist attacks. First of all they are cheap, second they are very effective, thirdly are hard to uncover, fourth easy to manufacture, fifth point, toxic biological materials can be easily stored and hidden, sixth, they do deliver massive destruction. Cost effectiveness analysis done by Americans in 1969 showed that using conventional weapons per square kilometer cost 2,000 dollars, nuclear weapons cost 800 \$, chemical weapons cost 600 \$, but biological weapons cost only 1 \$ per square kilometer, and cause the same destruction to civilian population. Terrorists target: livestock, food plants, stored food, environment, potable water supplies, and total environment. The best known illness causing agents are: anthrax, aflatoxin, mycotoxin, botulin and castor oil [7].

Anthrax causes an endemic illness in many parts of the world. Its average amount of spores (from 8 to 20 thousand) causes mortality. These spores are very resistant and can stay alive for many years in water and in soil. These bacteria can be spread over cities or other targets. The initial phase of illness is easy to diagnose and treat. Initial symptoms are similar to symptoms of a common flu. During this time anthrax bacteria is in the state of dormancy for a few days. The second phase is almost always deadly, this is caused by a large number of toxins, which have multiplied in the body of the infected organism. Bacteria causes lung sicknesses, which lead to death of 95% of all infected within 7 days. Only 8 grams of well spread bacteria may result in a huge number of victims over one square mile [10]. Anthrax cultures can be found in laboratories, some hospitals and on livestock pastures. (Bacteriological) Agents such as anthrax can be easily cultivated and the technologies to produce this bacteria are commonly accessible and well documented/publicized. The process of anthrax fermentation is shorter than 96 hours. This is why tenths of kilos of anthrax, in a clear liquid and solid form, can be manufactured within several weeks [10].

Aflatoxin and mycotoxin can be found in cultivated plants (for ex. peanuts). These toxins destroy immune system in animals. Long term illness ends in cancer in people. Raw materials needed to produce these toxins are not difficult to obtain.

Botulin can be extracted from *Clostridium Botulinum*. This is a bacteria, which can be found almost

everywhere. It can survive a long time in food, provided that such food is not exposed to air. People usually get infected by ingesting foods containing bacteria. Hallucinations, dry mouth, swallowing, speaking difficulties, paralysis followed by breathing stoppage followed by death are the symptoms of botulin poisoning. One of mutations is botulin toxin, which is the most dangerous for people. Infection follows after ingestion of contaminated food. *Clostridium Botulinum* may be stolen from a laboratory or bought. Manufacturing of this poison is not difficult for people with experience in microbiology, pathology, meteorology, etc.

Castor oil is one of the most toxic natural substances extracted from horsebean (*Vicia faba*). Inhaling of less than one milligram causes death [10]. It was castor oil that was used to kill a Bulgarian dissident Georg Markow in London. Markow was injected castor oil by using a specially equipped umbrella [11].

Dispersing castor oil in the air seems to be most effective. Introducing this poison into air conditioning systems of enclosed areas on ships, planes, buses can be done by terrorists. Castor oil can be also dispersed in fresh air(ex. The Highest Truth sect used a helicopter to spread).

Biological attack is considered to be more probable than a nuclear one, and also more deadly than a chemical attack. Ecoterrorism is often defined as an environmental or ecological terrorism and is a new form of terrorism in the world that is becoming global. Causing harmful environmental changes and this way terrorizing people, is the main goal of this type of terrorism [12]. Environmental protection and public health are a responsibility of public institutions and an important matter of interest for all countries, and each country aims to provide ecological safety for its citizens.

Environmental pollutants introduced into the atmosphere, and degradation of the environment, result in evermore dramatic effects: such as contaminating air and lowering the average human lifespan. This is why creating a well functioning system of environmental protection is important not only for individual countries, but also European regions and the entire world.

Ecoterrorists often target natural oil producing installations. Petroleum leaking from damaged pipelines, refinery plants, petroleum mining shafts or oil carrying tankers, contaminate soils, waters, cause fires, which in turn cause air pollution. Countries, which are listed as eco terrorists are: Kuwait, Israel, Iran, Iraq or Lebanon [12].

Terrorist groups in the 1980 ties used similar environment harming actions. IRA (Irish Republican Army) sunk a British ship in 1981 and this caused

a massive pollution of Irish and British coasts by spreading there coal dust. In 1985 terrorists belonging to Cellules Communistes Combattantes blew up a NATO petroleum pipeline at several places simultaneously, in 1987 ETA (Basque Freedom Fighters) bombed petroleum refinery in Spain. Eco terrorists can also target for attack other industrial infrastructure delivering natural gas or water [7]. It should also be mentioned at this point, that there are extremist groups that aim to protect natural environment, draw the world's attention to environmental endangerments by destroying installations having a potential to cause environmental damages. This activity has received new names, contractions of two words such as Eco-terrorism or Ecotage meaning small terrorism. Such sabotage means that such extremely idealistic groups destroy various equipments including such actions as placing nails (spiking) in trees in such a manner that the trees can not be cut down without a damage to sawing equipment [7].

Terrorism, in any shape, is seen as sort of lampoon of the world. It reflects the internal contradictions of politics, economy and culture. It reflects antagonisms and conflicts, unsatisfied needs, expectations, desires of individual groups, countries, nationalities. Terrorism acts as a specific kind of mirror that reflects not only the reality but also peoples' expectations from their world [8]. Luckily for the mankind, we have not experienced a mass attack with the use of biological weapons. So far, terrorists have preferred conventional weapons. This is due to the fact that biological weapons, despite previously mentioned qualities, carry with them fear of self contamination, which is linked with production, storing and finally using. Therefore production and application of biological weapons is not so simple and the risk it carries is enormous. Besides this, terrorists may be simply fearing health problems, such fear is deeply rooted in human psyche and this is why they may be deterred from using such weapons.

Moral kind of reservations and fears of self contamination are also important. It should be pointed out that biological weapon, once released and used, starts living on its own and it may become a source of contamination for a society, which terrorists wanted to protect [8].

Contemporary terrorism is a multifaceted and complicated phenomenon. As a subject of research, it requires an interdisciplinary and specific approach. Sociology, political science, international law, international relations studies, criminology and psychiatry are very important in this approach, but also increasingly important become medicine, microbiology, environmental protection and prevention. While taking

into consideration the historical changes in terrorism, it should be noted, that the heart of terrorism, which is violence and creating fear- remained constant, forms of terrorism however, changed along with the civilization development. Motivations and tactics of modern terrorism changed. These changes are accompanied by development of social processes, which run almost parallel with changes of new terrorist actions. The social changes include: a feeling of alienation, which appears more frequently in highly developed societies, subscribing to globalization, and at the same time, economic deprivation is on the increase in poor societies. Fear emerges, due to fast changing world, its new challenges and the new reality. Civilizations and cultures clash, economic and ecologic problems will create constantly increasing fears of what tomorrow will bring. A factor, which influences development and globalization of terrorism is scientific and technical development. Terrorists have access to the most sophisticated, modern weapons (including possibilities to obtaining and using weapons of mass destruction such as nuclear, biological and chemical), machine, rocket propelled, they can also have easy access to explosives (controlled by timers or radio waves signals). Terrorists can easily move around the world, and reach any place thanks to modern transportation. Their communication is facilitated by means of modern communication, telecommunication (cell phone) and information systems (the Internet). Such modern equipments allow for easy getting in touch, passing information, preparing terrorist actions and often entering countries, where terrorists can find safety from legal prosecution [6]. The absence of uniform, applied all over the world, legal international system, regulating in every country the crime of terrorism, does not always result in cooperation of countries while combating terrorism. It is an indisputable fact that in the XX and XXI centuries terrorism and criminal organizations are connected. An alliance of gangsters and terrorists would be unthinkable of in the XIX century, but today's terrorists can, and obtain money for their activities from narcotics' trading.

World's safety becomes an expensive and sought after commodity. International terrorism is listed as one of the top of world's worst dangers for the next 10 years. This opinion is declared by 70% of Americans and Europeans [13].

Then the following questions can be raised: do the contemporary mass media contribute to propagation of ideas championing by terrorists? Do the mass media create an image of worldwide contemporary terrorism or just singular terrorist groups? Do we experience some sort of terrorism created by mass media as a new form of human communication?

CONCLUSION

Mass media play a huge role in the process of mass communication. One of mass media fundamental functions is informing or passing communiqués about what happens around us, who are the receivers of information about the surrounding world [14]. Therefore, what is not in the mass media, does not exist. This is an extreme conviction, but it does reflect the contemporary role and meaning of mass media.

Terrorists attempt to induce fear and by its use gain domination and control. They want to make impression. They play for and to stimulate public, they demand that the public participates [15].

These words expresses the entire essence of terrorist activities, the terrorists are also on the receiving end of mass media produced and passed information. Therefore, terrorists know well what to do in order to enter mass media, and they do just this with better or worse results, at the same time they create their own image.

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