Ethical Reflections on International Health and Biological Weapons

Reflexiones éticas sobre la salud internacional y las armas biológicas

Ana Maria Tapajós *
Volnei Garrafa **

Abstract:

The main objective of "Ethical considerations on international health and biological weapons" is to underscore the importance of the consideration, by the international community of the ethical aspects of its decisions. For the examining of this argument the international negotiations on biological weapons are taken as a case study. A brief historical description of the subject is presented including action taken by the international community in terms of binding instruments on bioweapons. The article points out the inequalities between States from wealthy and poor regions in terms of defense of their populations from infectious diseases. Presents specific ethical considerations of aspects related to international actions involving this kind of weapons and health, according to principles well known to the international community such as: precaution, protection and prevention. It finishes by indicating the principle of responsibility as the most important reference for the issue under discussion.

Key words: Bioethics; biosecurity, disease, health, international politics.

Resumo:

O principal objetivo do presente artigo é ressaltar a importância da consideração pela comunidade internacional de aspectos éticos de suas decisões. Para examinar esse argumento são tomadas como estudo de caso as negociações sobre armas biológicas. É apresentada uma breve descrição histórica sobre o tema incluindo ações desenvolvidas pela comunidade internacional em termos de instrumentos vinculantes sobre armas biológicas. O artigo aponta as desigualdades entre Estados de regiões pobres e ricas em termos de defesa de suas populações contra doenças infecciosas. Apresenta considerações éticas específicas sobre aspectos relacionados a ações internacionais que envolvem esse tipo de armamento e a saúde conforme princípios bastante conhecidos pela comunidade internacional, como: precaução, proteção e prevenção. O artigo se encerra indicando o princípio da responsabilidade como a referência mais importante para o tema em discussão.

Palavras-chave: Bioética, bioproteção, doença, saúde pública, política internacional.

Resumen:

El objetivo principal de este el artículo es poner de relieve la importancia de la consideración por la comunidad internacional de aspectos éticos de sus decisiones. Para examinar este argumento son tomados como estudio de caso las negociaciones sobre armas biológicas. El articulo presenta una breve descripción historica sobre el tema, incluyendo las acciones desarrolladas por la comunidad internacional en términos de instrumentos vinculantes sobre armas biológicas. Señala, además las desigualdades entre los Estados miembros de las regiones ricas y pobres en términos de defensa de sus poblaciones contra las enfermedades infecciosas. Preasenta consideraciones éticas especificas sobre aspectos relacionados con las medidas internacionales que involucran este tipo de armas y la salud, de acuerdo con principios conocidos por la comunidad internacional, tales como: precaución, prevención y protección. El artículo termina indicando el principio de responsabilidad como la referencia más importante para el tema en discusión.

Palabras clave: Bioética, bioprotección, enfermedad, salud pública, política internacional.

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* Researcher at the UNESCO Chair of Bioethics at the University of Brasilia, Master in Collective Health, Consultant to the Ministry of Health, anatpj@saude.gov.br,

** Head of Post Graduate Program in Bioethics, University of Brasília.

Introduction

The present article intends to examine ethical aspects of negotiations undertaken by the international community regarding the issue of biological weapons in what concerns its impacts on the inequalities between States. Two main aspects will be considered: the growing potential of the deliberate use of disease to cause harm, and the challenges faced by least powerful States to negotiate and implement binding rules related to that specific class of weapons, with all its implications for population health and survival.

The text will try to make it clear how central members of the international community are capable to establish – in such negotiations – standards of behavior to reinforce the protection of the developed world leaving its lesser powerful members (peripheral States) without adequate means of defense. The choice of these specific negotiations comes from its close relation with both health and security considerations and the ethical aspects involving the balance between them.

On the 19th of October 2005, during the 33rd Session of its General Assembly of the United Nations Educational, Scientific and Cultural Organization (UNESCO) a Declaration on Bioethics and Human Rights (UNESCO, 2005), was adopted. It was the first time that - through this decision - the international community recognized Bioethics as guidance for relations between its members. The Declaration includes concepts such as: human dignity, vulnerability, responsibility, equality, justice, equity, non-discrimination, and non-stigmatization. In this sense, it incorporates views of Third World countries not usually present in international instruments.

The Preamble of the Declaration contains rather important statements. From those, one is especially relevant for the issue we present in this work and it states that:

> (…) it is necessary and timely for the international community to state universal principles that will provide a foundation for humanity's response to the ever-increasing dilemmas and controversies that science and technology present for humankind and for the environment

The same international community that globally recognizes the importance of Bioethics gathers to discuss and negotiate rules and procedures under the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, – commonly known as the Biological Weapons Convention (BWC). It is a Convention without its own Secretariat; in addition, the negotiation of a long elaborated draft of a verification Protocol was refused by the United States in 2001. At the same time, Anthrax dissemination through the Postal service in the US has reminded everyone of the potential use of biological weapons by common citizens, with catastrophic consequences for societies.

The objective of the present study is, therefore, to underscore the relation between bioethics and bioweapons as both issues are under discussion by the international community. In this sense it is important to remind that Article 21.5 of the Declaration includes bioterrorism as an international concern, providing a more concrete connection between that instrument and the BWC.

From the using of dead bodies in the siege of Kaffa, in 1346 aiming at causing Cholera outbreaks (and therefore the capitulation of the town) to the sophisticated national programs of the 20th century, biological weapons had been seen as an activity undertaken or at least sponsored by States, and involving, within modern States, huge efforts towards research, development, production and weaponization of dangerous pathogens (CHRISTOPHER et al, 2000: 17-35).

The dual use nature of research in biological and medical sciences brought new concerns to the international community, which took measures to contain their eventual use for weapons and their proliferation. In recent times new forms of conflict raised concerns about the potential use of bioweapons by criminals or terrorists. The duality

in regards to access to knowledge and defense means between poor and rich countries also raises concerns about ethical aspects of the positions assumed by the international community on bioweapons.

Brief historical development of bioweapons

Jeanne Guillemin[3] classifies the historical development of bioweapons in three general phases: (i) a first, or offensive phase, when their conception and production was legitimate; (ii) a second phase dominated by treaty norms; (iii) a current phase characterized by tensions between national and international security interests and the control of basic science for legitimate purposes. Through this narrative, we realize that every great power (except for Nazi Germany) has had a bioweapons program at a given time in their history (GUILLEMIN, 2004:11-14).

First attempts and the ethics of war

The first governmental program was established by France in 1920, by Auguste Trillat, director of the Naval Chemical Research Laboratory, who acted as inspector to German facilities under the Treaty of Versailles. Inspired by the idea that Germany had implemented a sabotage program to affect pack animals, he started a program on bioweapons. However, there was nothing much left of the French program after German occupation in 1940.

This program, first of its kind, benefited from previous discoveries of scientists like Louis Pasteur – who in 1858 had published his argument that germs caused disease – and Robert Koch – who in 1876 gave proof to the germ theory through his studies of *Bacillus antracis*, a favorite agent for bioweapons until today. At the same time, discoveries based on the work of the English physician Edward Jenner (1796) about immunization provided ground for defense considerations as a pre-condition for the concept of military use of bioweapons. The acceptance of germ theory and the success obtained by Pasteur (1881) with an anthrax vaccine became central to that use.

The concerns of the international community about the use of bioweapons (at that time closely connected with the idea of chemical threats) may have started as early as 1874, when the International Declaration concerning the Laws and Customs of War (Brussels, 27 August 1874) (DECLARATION, 1874) stated in its Article 13(a) that the employment of poison or poisoned weapons were especially forbidden. The same prohibitions were adopted at the Hague Convention (CONVENTION 1899). It was the Protocol to The Hague Convention for the Prohibition of the Use of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, better known as the Geneva Protocol (UNO,1925) that in 1925 banned the first use of these weapons, despite not mentioning its production or acquisition.

The Protocol faced considerable resistance by the great powers of the time. Some States such as France, presented reservations referring to the right to retaliate or to the extension of these rights to allies under attack by enemy forces. Other States like the United States of America and Japan did not ratify the Protocol.

From 1934 to 1945, Japan developed the most important biological weapons program of its time. Under the command of General Shiro Ishii, a notable scientist, the program took the region of occupied Manchuria as a field test area. Considering the dangers of performing certain experiments in places like Tokyo or other populated sites within the country, the program started in the city of Harbin and, in 1936, a huge compound was built in Ping Fan, known as Unit 731. It was a heavily guarded fortress occupying an area of about six square kilometers, comprised of 150 buildings and lodging 30,000 residents. Its work was complemented by smaller units within the region and in occupied countries as Thailand, Burma, Korea, the Philippines and New Guinea.

The program was notable for its cruel and unethical experiments performed on prisoners or despised populations of the occupied areas, many of them deliberately infected by different agents of disease. Vivisections were performed at different stages of the disease offering physicians an unparallel opportunity to study the organs of a living human being as the disease progressed through the body. Anesthetics were not frequently used as they would disturb the production of the purest experimental results (BARENBLATT, 2005:29). In spite of its methods the Japanese program illustrated the efficacy and feasibility of biological war.

Nevertheless, for a long time these experimental results were known by only a few as nothing about its deeds was revealed at the war crimes trials held in Tokyo from 1946 to 1948. According to Mangold & Goldberg (MANGOLD,GOLDBERG, 2001:26):

> The work of the American investigators was partly compromised by the needs of the US Army's nascent BW research programme at home. American BW scientists had been frustrated in their work on researching human reactions to biological and toxin agents because they could only receive data from animal experimentation. They realized they needed to lay hands on the results of biological experiments on human beings.

In fact, the United States program was conceived and implemented relying on the experience of the United Kingdom, who had started its own program in 1940 motivated by false leads about Germany's secret activities related to bioweapons. The importance of the military use of chemical weapons had already decreased due to the use of masks by troops in battlefields. Since the end of World War I new technologies for conventional arms and the prospects of air war had also changed moral views. Civil populations in industrialized countries who constituted necessary support for war efforts became new targets under the spirit of "total war", blurring the boundaries between soldiers and civilian populations.

The scientists and politicians involved in the creation of the British program had served overseas and testified the effects of serious outbreaks in conditions of conflict and social disruption. Many belonged to the generation that survived the 1918 influenza epidemic and could foresee the consequences of a biological attack on vulnerable populations, debilitated by war. The same concerns and misinformation about Hitler's secret biological program were shared by Canada. The Canadians were the first to consider the idea of large-scale production of virulent agents, a vision to be incorporated by the US program and other to follow.

Canada, the United States and the UK established a partnership to develop and test biological weapons for military use. The first agent chosen was inhalational Anthrax, proven lethal and with no reliable therapy. Small tests allowed determining of particle size and the estimating adequate doses for infection. Field tests were performed in 1942 in Gruinard Island, Scotland. The tests were successful, but they have also shown the showed the dangers of conducting such activities in close proximity to human beings. Nevertheless, bioweapons have been proven more effective and more convenient when compared with the heavy load of chemical weapons.

Although tests have shown positive results, the effective use of bioweapons in large scale still had to face certain technical challenges. The United States had the technological skills and production capacity to address these challenges, but the issue from its beginning was a controversial one. Although the topic had been on the agenda since 1939, it was not until the US entered the war that the decision to establish initiatives regarding bioweapons was taken, also encompassing concerns about economic objectives and the development of defense means. The American program experienced rapid acceleration in 1943. Camp Detrick became the center of research and development and production with everything done under strict secrecy.

Facilities were equipped with state-of-the-art technology for testing not only for agents to be used as ammunition but for weaponizing them through

aerosols and bombs. Although the US program was wide in scale and mobilization it is important to remember that it started with modest financing – about 3,5 million of American dollars – when compared with the 2 billion of the Manhattan Project. By the end of the war, its resources had raised to 60 million. In 1948 the US and its allies in the UK performed joint tests in the Caribbean Sea and at the island of Antigua.

After the war in the period between 1952 and 1955, the UK held tests for new dispersion methods in Scotland and the Bahamas. The US also followed this line of tests including research with insects, air conditioning contamination and aerosolization. Harmless agents were dispersed initially from submarines in the San Francisco coast and, in partnership with Canada, over densely populated areas of Winnipeg, Saint Louis, Minneapolis, Maryland and Leesburg. In 1957 new tests were done including the use of devices at the top of high buildings. Conclusions were that a competent attack could infect millions of individuals within a range of 20 miles from the dispersal site (GUILLEMIN, 2004: 102-111) .

In 1958 Americans produced the first missile for biological war, the “Honest John”, with a range of 16 miles and capable of dispersing 356 bomblets filled with biological agents. In the 1960’s another missile widened the range to 75 miles with a capacity for 720 bomblets. Tests were done, not with simulants as the previous ones but with lethal agents in the Atoll of Johnson (CIRINCIONE et al 2001:212)

These last tests were closely observed by the Soviet Union. The idea of a similar capacity being built by the URSS brought the US to perform tests in Alaska, in conditions close to those in the Soviet territory (MILLER et al 2001:53). In 1969 in a gesture of confidence building, President Nixon decided unilaterally to cease the US program, leaving only defensive initiatives. Since then, the international community has been reasonably permissive in relation to bioweapons. In the beginning of the 1970s a debate emerged about the simultaneous banishment of chemical and biological weapons, as proposed by the Soviets. Thanks to US resistance, a separate instrument – the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, – commonly known as the Biological Weapons Convention (BWC), was open to signature in 1972. It was the first treaty to ban a whole class of arms. Without a mechanism of verification of compliance (until the publishing of this paper) the Convention did not prevent its members from engaging in the exact same activities it prohibited; and the Soviet Union program was the most notable example.

Secret undertakings, new forms of conflict and international rules

Developed, as all the other before it in extreme secrecy, the program came to public knowledge because of the defection of two of its main scientists: Wladimir Pasechnik, to the UK in 1989 e Kanatjan Alibekov to the US in 1992. The first initiatives, according to Western intelligence started at the Aral Sea between 1936 and 1937. Prisoners related some activity in Chkalov and Swerdlovsk in 1943. A great part of this early program had been destroyed during the Stalinist period through the death or imprisonment of the scientists involved. The idea was revived in 1973 by the heads of Biopreparat, a conglomerate of public companies that acted as a disguise for a gigantic program of bioweapons.

The program involved around 9000 scientists and technicians in several facilities throughout different regions of the URSS: Obolensk, close to Moscou; Koltsovo, in Siberia (known afterwards as Vektor); Stepnogorsk, in Kazakhstan, complemented by smaller units dedicated to investigating mechanisms of disease, large scale production of biological agents, arms engineering and means of delivery, field tests and defense methods (ALIBEK,1999:29-69) In 1979 an Anthrax outbreak in Sverdlovsk called the attention of the international community. Under pressure from the US and the UK, Mihail Gorbachov allowed specialists of these

countries to make 'inspection' visits to Obolensk, Chkalov, Koltsovo e San Petersburg but these visits proved nothing.

In 1992, under the BWC, Russia submitted a form under the confidence building mechanism admitting the existence of a program but denying any production of agents incompatible with the Convention. In that same year the test area of the Vozrozhdenie Island was closed. At the end of Cold War, the US established initiatives to absorb some of the scientists formerly working for the Soviet program. Other governmental actions were revealed in South Africa and Iraq and duly terminated.

In the meantime, the Parties of the BWC created an Ad Hoc Group in 1993 to study verification measures. After a long period of elaboration the Group presented the draft of a verification Protocol to be negotiated at the V Revision Conference of the BWC in 2001. In the last day of this meeting, the US Delegation informed its country could not negotiate such an instrument. Some concerns were added to the issue of bioweapons, including new scientific developments, the imbalances of power in post-Cold War period, the widespread knowledge of the potential of devastating epidemics and, above all, the emergence of terrorism (HOFFMANN, 1998:13-44)

Not a novel phenomenon, terrorism was put back into the international community agenda after the attacks against the World Trade Center in September 2001. For the bioweapons community (if we may say so), less important events like the Anthrax letters and the dispersion of Sarin gas in Tokyo metro had acquired more significance (IGNATIEFF,2004:146) Political or religious fundamentalisms, idiosyncrasies, feelings of social rejection, or even more trivial motives can lead groups or individuals to choose terrorist tactics in domestic or international settings (PAPE, 2005:8-9) All of a sudden, it became more clear that bioweapons do not need to belong exclusively to great State programs. As remarked by Danzig and Berkovsky:

> Biological Weapons are unfortunately characterized by low visibility, high potency, substantial accessibility and relatively easy delivery. The basic facts are known: a millionth of a gram of Anthrax constitutes a lethal inhalation dose (…) These small quantities make the concealment, transportation and dissemination of biological agents relatively easy. Many of these agents- bacteria, viruses and toxins occur naturally in the environment. Unlike nuclear weapons missiles or other advanced systems are not required for the delivery of biological weapons. Small groups of people with modest finances and basic training in microbiology and engineering can develop an effective biological weapons capability. Recipes for biological weapons are even available in the Internet (DANZIG, BERKOVSKY, 2000: 9-10)

Additionally, the association of terrorism with international conflict created new concepts (or gave new meaning to old ones) easily incorporated into the extensive security vocabulary such as: asymmetric war, failed States, rogue States, States that sponsor terrorism and so on. Under the BWC the expression 'suspicious outbreak' has been introduced not as an outbreak whose etiological nature has not been yet confirmed, but as a possible deliberately provoked epidemic. The displacement of concerns from States to groups or individuals encourages open statements about the morality of such weapons. In the words of Mangold & Goldberg:

> Biological weapons are both more immoral and more lethal than the pestilential cohorts in the nuclear and chemical armory, for in infecting the enemy the aggressor can infect his own side; the pathogens blur the lines between peace and war, as they silently spread through the ranks of families and non-combatants. Biological warfare is cheap, efficient, unselective and here.(MANGOLD,GOLDBERG 2001:xi)

Specific ethical considerations

The brief considerations presented here do not intend to be exhaustive. The idea is to examine some important points related to the morality of the use of disease as a weapon and to present some fresh views from Brazilian bioethics.

One important aspect when examining bioweapons from an ethical point of view is the universally negative significance of 'disease'. Disease may be viewed as the suffering frequently associated with loss of capacity or of human dignity caused by the degrading condition of those affected *vis a vis* the healthy ones. It can also be seen as punishment or perversion as a proof of malignancy. From ancient times, human attitude towards disease has been to control, fight and eradicate it. Disease has been at the same time an enemy to be defeated and a condition of nature to be subdued (BERLINGUER, 1988:14-36). Therefore, the use of disease as a weapon deserves to be called "repugnant" as in the preamble of the BWC.

Another especially conflicting question is the issue of dual-use. Knowledge, technology, equipment, and biological agents may be employed for peaceful ends or for criminal or illicit purposes. There is no unequivocal way to differentiate beforehand the defensive or aggressive use of most of these elements. In political terms, the dual-use dilemma may be manipulated to justify the control of advanced technologies to benefit affluent countries and their industries, denying the benefits of scientific development to an expressive parcel of world population living in poor regions.

As weapons are closely related to war and aggression, another ethical dilemma can be considered: who should bear the responsibilities of preventing the illicit use of such elements? Under the BWC, the task belongs to States. Considering, however, modern innovation and commercial systems, some argue that the best guardians of related ethical principles would be scientists themselves, bound by self-determined codes of conduct. It is nevertheless useful to remember that States have pursued expressive bioweapons programs, even after committing themselves to the BWC obligations and scientists not always resist to conflicting values when they are convinced that either the security of their homeland and/or the independence of scientific knowledge is at stake.

Another ethically sensitive issue relates to the advances in technologies such as those involved in targeted delivery. As it is well-known, nervous, endocrine and immune systems interact with one another independently. Manipulation of one of these systems through biorregulators may affect physiological systems with disproportionate consequences. We may add to these concerns the so-called non-lethal substances such as Phentanyl that were used against terrorist attackers in a Moscow theatre and that proved fatal to all involved, terrorists or not. As remarked by Kathryn Nixdorff, non-lethal and non-pathogenic biochemical substances have not yet received enough attention under the BWC, but could nevertheless be considered as new threats. Other threats would come from synthetic biology, such as the reconstruction or the artificial creation of virus (NIXDORFF, DANDO, 2009).

The leadership of industry in decision-making about delivery systems for medicines may also be a topic of concern. The increasing use of aerosols with new propellers (especially after the ban of chlorofluorocarbons by the Protocol of Montreal) is giving birth to innovative nebulizers as well as weapons to deliver non-lethal biochemical substances (POSTE, 2000) Aerosols have been employed to influence human behavior as reflected by an article published in *Nature* and cited by Dando. The substance tested was the neuropeptide oxitocin delivered by nasal spray. The results have shown a rise in levels of self-confidence and neuroimages of the brain have detected effects on the site of the brain responsible for the regulation of fear and social cognition. There is no need to elaborate further on the potential use of these possibilities for illicit purposes.

These issues, although leading to serious concerns, would be in harmony with traditional views of biological threats, essentially based on the idea of powerful State programs. New developments,

however, bring different questions with different ethical aspects into the debate. Although we can not say terrorism is anything new, the Anthrax letters in the United States and the successful attack with Sarin gas by the group Aum Shinrikyo in the Tokyo Metro alerted public opinion of the new threats and brought pressure on governments in regards to security (IGNATIEFF, 2004:83) . The construction of concepts like 'asymmetric war' or 'bioterrorism' reflects a change in the nature of both war and terrorism (MANGOLD,GOLDBERG, 2001:9-10)

The main ethical question that may be considered under the above described framework has however been exposed by the recent pandemic of AH1N1 Influenza. Too relatively mild to provoke panic, the fast spread of the disease has been nevertheless sufficient to expose the existing inequalities in terms of defense conditions between developed and developing countries. For a long time, poor countries have been preys of disease. The prevailing strategy to deal with the spread of disease has been, to prevent infection originated in poor countries from spreading to more developed regions regardless of the situation of the populations first affected.

Response efforts from the international community have not usually included access to medicines, vaccines or other means of treatment, whenever available. States, regardless of their economic capacity, are saddled with the combined responsibility with the combined responsibility of dealing with epidemics and preventing their spread. Failure to do so might be seen as breach of obligations under the BWC, seriously compromising the country's image facing other States and, therefore, the well being of their people.

This more recent pandemic has not changed that pattern, but has revealed that defense means are disproportionately concentrated in the developed world in terms of research, technology and industrial capacity. Patents, on the other hand, reduce the possibility of developing countries with some industrial capacity striving to provide access to diagnostics, vaccines and medicines for their own population and those of other in need. Rich countries can finance targeted research and development, as well as order, stockpile or purchase in advance the medicines or other resources they would need to face health threats. They may therefore entertain the idea they are somehow protected from any eventual threats.

But in a clear way the pandemic has shown that reasonable control of lethal infections is not possible for poor countries where they usually originate since they have no means to detect, treat and avoid spread of disease. Globalization has rendered communicable diseases almost impossible to be kept within borders, and eventual perpetrators of biological attacks do not need to start them in developed countries anymore (although domestic criminals have proved this is not difficult to attain). Thinking in terms of biological warfare the deep divide in defense conditions poses threats not only for the poor but for the whole international community.

Beyond these ethical dilemmas specific to bioweapons themselves, the international community is affected in its decisions by ethical principles it has already accepted and incorporated to its negotiating discourse. One of the first principles one could mention is the precautionary principle. Stated as Principle 15 in the Rio Declaration on Environment and Development, it has gone much further than its first international application (UNESCO, 2005). Evolving from that concept, there are other associated principles such as the protection of the most vulnerable, the prevention of loss or bad consequences.

Protection of those in vulnerable conditions has been the main consideration to compel the international community into rather frequent humanitarian actions in last decades. The United Nations Office for the Coordination of Humanitarian Affairs has included in its Mission to 'alleviate human suffering in disasters and emergencies' and to 'advocate for the rights of people in need (UNO, 2008).

It is important to note, however, that vulnerability (in this case) is not dealt with in the same way as it is seen in national contexts; for the international community populations or groups may be vulner-

able on account of their fragility under certain circumstances such as famine, disaster, displacement and others as such. More persistent social inequalities within countries are seen as domestic problems and by force of the Charter of the United Nations itself 'All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations (UNO, 1945). The respect for national sovereignty and equality of member States does not hamper the significance of protection as an ethical principle.

Preventive action is also a well known part of the international community's vocabulary, where expressions like 'crime prevention', 'conflict prevention' or 'genocide prevention' are not strange words. Prevention encompasses the idea that we reasonably know what we want to prevent. In this sense, the prevention of a biological attack is somehow different from, for instance, preventive medicine. The secrecy and disapproval involved in the use of such weapons make threats extremely hard to detect and therefore, to prevent. In simpler words, controlling the spread of disease or limiting access to dangerous pathogens is one thing; blocking a perpetrator from using bioweapons is quite another. In this sense, the sharing of defense means – through the access to diagnostics, medicines and vaccines - would be at least a way to persuade potential perpetrators of the uselessness and moral reproach of their actions.

We can not argue these are ethical principles unknown to the international community so far. To these important principles we should add the necessary prudence to deal with complex and ethically conflicting situations.

We may realize that biological weapons present us with a very complex situation where all the principles above would apply. In the context of bioweapons, it is not enough to work under considerations of risk. Risks are present, anyway, in every step of knowledge building or technological development. With bioweapons we are forced to consider one step ahead of the mere question of risk, which is the idea of threat caused by deliberate actions that can bring about serious or irreversible damage.

Bioethics presupposes freedom of choice and action as well as the responsibility for eventually uncontrolled damage. It is therefore reasonable to say that ethical condemnation should occur for the perpetrators of biological attacks (States, terrorists or criminals) and also for those unwilling to share basic defense means in terms of knowledge, technology and material means to fight disease. The international community needs to be aware that the maintenance of the divide between poor and rich countries regarding defense against bioweapons is not only ethically questionable but also a potential danger to all mankind.

Final considerations

If international health is to be considered a public good, new sustainable ways to deal with the threat of bioweapons have to be found. As disease may spread, so must spread the conditions to fight it. Promoting social justice internationally would be not only a more ethical way to preserve life, welfare and human integrity but would also be the best way to create deterrence, avoid political instability and promote peace, in a world so much in need of it.

In 2009, States Parties of the BWC met to discuss "with a view to enhancing international cooperation, assistance and exchange in biological sciences and technology for peaceful purposes, discuss, and promote common understanding and effective action on promoting capacity building in the fields of disease surveillance, detection, diagnosis, and containment of infectious diseases". The first meeting, involving specialists from all over the world, was held in August 2009. It was an important occasion for academia and civil society to change the moods of a conservative international community and put forward more ethical and sensible proposals for the globally shared threat of biological weapons. Future meetings were scheduled to be held in 2010.

It is especially relevant in this case that an international community enriched by the support of academia and civil society would keep in mind the legacy of Hans Jonas and rethink his imperative of responsibility so expressed: 'Act so that the effects of your action are compatible with the permanence of genuine human life'; or, expressed negatively, 'Act so that the effects of your action are not destructive of the future possibility of such life'[4]. It is the aforementioned imperative that should command those in a position of power to protect the more fragile and vulnerable in order to respect life in the present and preserve its continuity into the future (JONAS, 1984:81). No other ethical consideration would apply better.

We therefore consider that the international community has to be accountable for its decisions on biosecurity focusing in its core the need to preserve health and integrity of the lives of the most vulnerable of its members. The close relation of bioweapons to the health and well-being of huge populations does justify serious efforts towards the incorporation of ethical concerns into the debate as a guide to fairer and more equitable relations. We believe that in this debate, Bioethics has a contribution to make towards the attainment of peace and security which are, in themselves, the main guiding principles of the United Nations.

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