Forum: General Assembly 1

Issue: Addressing the threat of bioweapons and biotechnology

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Introduction

In an era marked by unprecedented advancements in scientific discoveries and technological breakthroughs, we find ourselves confronting the dual-edged sword of bioweapons and biotechnology. The exponential growth in our understanding of genetic engineering, synthetic biology, and other related fields has provided immense opportunities for the progression of humanity and improving the quality of life. However, it has also presented us with profound challenges and ethical dilemmas that demand our immediate attention.

Bioweapons, defined as weapons containing harmful biological agents utilized to intentionally cause damage or death to people, animals, or crops, pose a grave threat to global security, peace and stability. The potential consequences of a deliberate or accidental release of such weapons cannot be overstated. The possibility of the risk calls for the international community to come together to address this menace comprehensively, ensuring the effective prevention, detection and response to bioweapons incidents.

Figure 1: Picture of Bacillus Anthracis (Anthrax) and its vaccine development (Creative BioLabs)

Furthermore, the rapid advancements in biotechnology have raised concerns about the potential misuse of these technologies. While biotechnology offers tremendous potential for scientific progress and innovation, it raises concerns about the accidental or deliberate misuse of biological agents. The synthesis of deadly pathogens, the

manipulations of genetic codes, and the creation of artificially designed organisms as well as the risk of an accidental release, inadequate biosecurity measures, and the proliferation of biotechnological research demand regulation to prevent unintended consequences and frameworks to ensure responsible practices.

Definition of Key Terms

Biological Weapon (Bioweapons)

A weapon containing harmful biological agents that are utilized to intentionally cause damage or death to people, animals or crops.

Biotechnology

The manipulation (as through genetic engineering) of living organisms or their components to produce commercial products

Biological Agent

Any microorganism (including but not limited to bacteria, viruses, fungi, rickettsiae or protozoa), or infectious substance, or any naturally occurring, bioengineered or synthesized component of any such microorganism or infectious substance, capable of causing death, disease, or other biological malfunction in a human or another living organism, or deterioration of materials of any kind, or deleterious alteration of the environment.

Weapons of Mass Destruction (WMD)

Constitute a class of weaponry with the potential to: produce in a single moment an enormous destructive effect capable of killing millions of civilians, jeopardizing the natural environment, and fundamentally altering the lives of future generations through their catastrophic effects; cause death or serious injury of people through toxic or poisonous chemicals; disseminate disease-causing organisms or toxins to harm or kill humans, animals or plants; deliver nuclear explosive devices, chemical, biological or toxin agents to use them for hostile purposes or in armed conflict.

Anthrax

A serious infectious disease caused by Bacillus anthracis which can lead to severe illness in both humans and animals if infected. When infected, anthrax spores activate inside the human body, causing the bacteria to multiply and produce toxins.

Background

History of Biotechnology

Biotechnology has overall three stages of systematic change: Ancient Biotechnology, Classical Biotechnology, and Modern Biotechnology. First, the Ancient Biotechnology phase was before the year 1800s, when biotechnology was as simple as "agriculture", where mankind learned to domesticate food products due to the influence of harsh weather. They further understood the need for exploration of food and other possibilities of growing food, therefore developing technologies over this process. The Classical Biotechnology period, the second phase of evolution and development of biotechnology, existed from the 1800s to the middle of the twentieth century (approximately before the Second World War). This period was provided with the basis of genetics and antibiotics. The Second World War set a major stone for the third period of evolution and scientific discoveries. This phase paved the path for further developments in DNA and diseases related to organisms, which highlights the potential of the utilization of bioweapons.

Development of biological weapons

Figure 2: Historical biological weapons activity data shown through a map (Our World In Data)

The first biological warfare that was recorded in 1155 happened in Italy, when the emperor poisoned water wells with human bodies. However, that was not publicly known as the first biological warfare. Instead, it was the Black Death. The Black Death is widely believed to have reached Europe from Crimea as the result of an attack involving a biological agent. In 1346, the disease swept through Europe, the Near East, and North Africa, and was the greatest public health disaster in recorded history. As a result of this major biological attack, Europe lost an estimated one-quarter to one-third of its population, as was in North Africa and the Near East. The origin of the Black Death was claimed to be the Mongol army hurling plague-infected cadavers into the Crimean city of Caffa, transmitting the disease to organisms, however, the ultimate origin of this catastrophic disease is uncertain.

The use of biological and toxin weapons continued after the Black Death, yet the consequences weren't as disastrous until the eighteenth century, when smallpox spread across North America. The North American smallpox epidemic occurred from 1775 to 1782 where the death toll was estimated at 130,000, however, it was never accurately reported. The smallpox swept over most villages and fields, killing tribes and all the villagers, causing the majority of the population to move north. The population in the 1780s decreased to one-fifth of the initial size, and what had been eighteen villages was reduced to three by the time the epidemic was over. Then the First World War erupted, forcing a major use of anthrax and glanders. Despite the establishment of the Geneva Protocol – the first diplomatic attempt at prohibiting the use of biological and toxin weapons in cases of war – the Second World War pushed the boundaries further, causing major public health hazards with anthrax, plagues and tularemia.

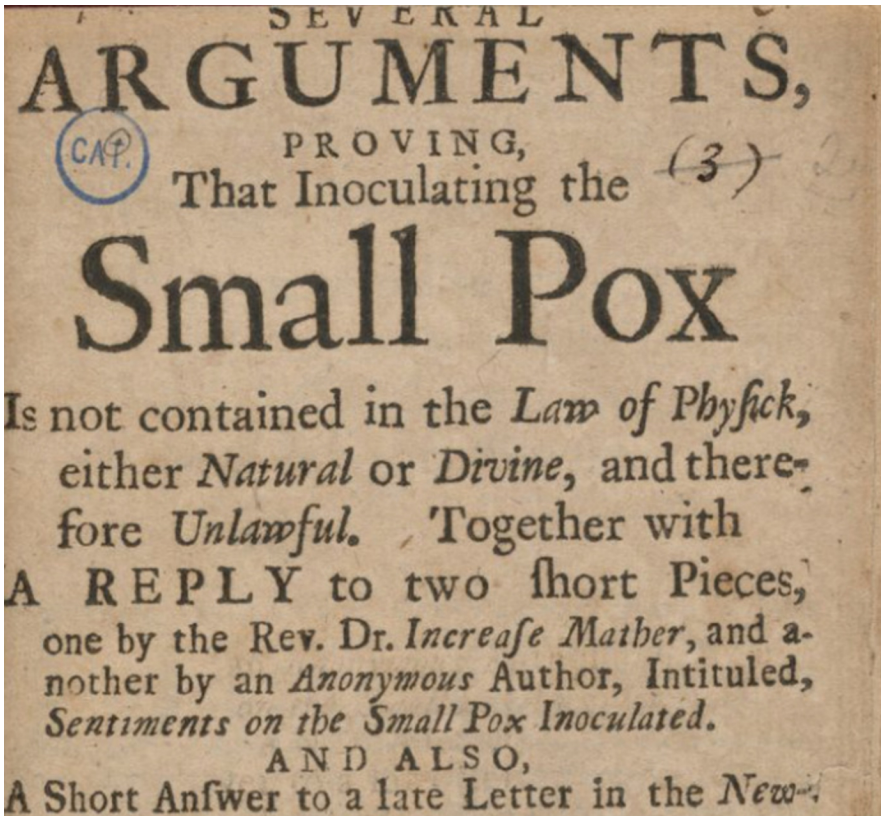
SEVERAL
ARGUMENTS,
PROVING,
That Inoculating the
Small Pox
Is not contained in the *Law of Phyſick*, either *Natural* or *Divine*, and therefore *Unlawful*. Together with
A REPLY to two ſhort Pieces, one by the Rev. Dr. *Increaſe Mather*, and another by an *Anonymous* Author, Intituled, *Sentiments on the Small Pox Inoculated*.
AND ALSO,
A Short Anſwer to a late Letter in the *New-*

Figure 3: A picture to show the smallpox inoculations during the 1721 outbreak in Boston created headlines in the press and controversy in the society (Hasselgren - National Library of Medicine)

There was also evidence of food poisoning, cholera, encephalitis and glanders use during the Second World War. There was also research to claim Japan released plague bacteria over China in the 1930s and 1940s. Even after the world wars, the use of anthrax continued: the Soviet Union military microbiology facility's accidental release of Bacillus anthracis in 1979 caused an anthrax epidemic, a Japanese cult released the chemical Sarin in the Tokyo subway in 1995, and the Amerithrax, otherwise known as the enveloped-powdered- anthrax-spores incident, happened in the United States in 2001.

Shortly after the First World War, public dismay at the horrors of chemical and biological warfare pushed post-war negotiations as a means to prevent a recurrence. In 1925, at a conference held in Geneva to discuss international arms trade, a ban on the export of gas for use in war was proposed by the United States, resulting in the suggestion of France to negotiate a protocol prohibiting the use of poisonous gas in cases of war. Along with this, Poland suggested the addition of banning bacteriological (biological) methods of warfare as well, resulting in the Geneva Protocol. Through multiple sessions of debate, the Geneva Protocol was set to prohibit the first use of chemical and biological weapons in war. However, these restraints could not bind member nations in all situations, as a declaration was made that parties would be released from their obligations under the protocol concerning to any enemy nation or nations whose armed forces or allies do not observe the protocol's provisions.

In 1966, the United States raised a question to the United Nations by using riot control agents (tear gas) in the Vietnam War. As defense, the United States argued that the protocol did not apply to nontoxic gases. As a result, a proposed resolution of 2603 A (XXIV) was debated until the 16th of December 1969, when the UN secretary general clarified the issue that the protocol prohibits the first use of "all" chemical and biological weapons in case of warfare. While the United States argued that the resolution's (General Assembly's newly established Conference of Committee on Disarmament) interpretation was inappropriate for the General Assembly to use to interpret treaties, the United Kingdom argued that only parties to the protocol had the right to interpret it.

Major Parties Involved

United Nations Office for Disarmament Affairs (UNODA)

Originally established in 1982 as the General Assembly's second Special Session on Disarmament (SSOD II), the United Nations Office for Disarmament Affairs (UNODA) was newly established in January of 1998 as the Office for Disarmament Affairs. The UNODA mainly provides substantive and organizational support in the area of disarmament through the work of the General Assembly and its First Committee, the Disarmament Commission, the Conference on Disarmament and other bodies. The Office focuses on providing substantive support on transparent information on WMDs through regional forums. It provides objectives on its goals of elimination of WMD and strict controls of conventional weapons while promoting multilateral agreements in areas of disarmament, arms control and non-proliferation.

The UNODA promotes human, national, and international security from arms through its regulation, control, and elimination. It further recognizes the need for regional, and military disarmament measures, and

encourages member nations, intergovernmental and non-governmental organizations and institutions, departments, and agencies of the UN system to increase awareness of these issues and disarmament activities through providing information to the research and educational institutions, media and the public.

1540 Committee

On April 28th, 2004, the United Nations Security Council adopted resolution 1540, which affirmed that the proliferation of nuclear, chemical, and biological weapons and their means of delivery constitutes a threat to international peace and security. Resolution 1540 imposes binding obligations on all nations to adopt legislation to prevent the proliferation of nuclear, chemical, and biological weapons, and their means of delivery, and establish appropriate domestic controls over related materials to prevent their trafficking.

The 1540 Committee supports the implementation of the resolution and receives relevant information from international, regional, and sub-regional organizations on issues stated in the resolution. With cooperation with the Security Council, the committee also strives to enforce the prevention of proliferation by enhancing the sharing of information and coordinates visits to nations to provide technical assistance and guidance in areas of disarmament (mentioned in the resolution – nuclear, chemical and biological weapons). It also works towards preventing non-State actors, including terrorists, from gaining access to weapons of mass destruction. The mandate for the 1540 committee has been and will be extended through several debates within the Security Council, as mentioned in the timeline below (resolutions 1673, 1810, 1977, 2622, and 2663 are all a result of the extensions).

The United Nations Institute for Disarmament Research (UNIDIR)

Established in 1980 by the United Nations General Assembly, the objective of the foundation of the United Nations Institute for Disarmament Research (UNIDIR) was to inform nations and the global community on questions of international security and to assist with disarmament efforts to facilitate the progress towards stronger security. This institution conducts independent research on disarmament and related problems, especially international security issues. Through engaging with and supporting member nations in providing ideas and advice and facilitating dialogue, the UNIDIR advances towards multilateral arms control and disarmament and hopes for a stable and secure world in which the government and people are protected from threats of arms-related violence, including biological and toxin weapons. It implements a range of activities including workshops, scenario building and exercises, conferences and dialogues with policymakers to ensure their objective has been put into action.

According to the 2030 Agenda and its Sustainable Development Goals (SDGs), UNIDIR's work contributes and will continue to contribute to the implementation of the SDGs. Its progress towards its vision would revisit the relationship between disarmament and development, stressing the importance of a comprehensive approach to disarmament.

The United Nations Environment Programme (UNEP)

With a mission to inspire, inform and enable nations and peoples to improve their quality of life without compromising that of future generations, the United Nations Environment Programme (UNEP) drives

transformational change by identifying and addressing the root cause of the triple planetary crisis of climate change, nature and biodiversity loss and pollution.

Timeline of Events

Date	Description of event
November 11, 1918	End of World War 1
June 28, 1919	Signing of the Treaty of Versailles
June 17, 1925	Signing of the Geneva Protocol
September 2, 1945	End of World War 2
December 16, 1971	Adoption of Bacteriological (Biological) and Toxin Weapons Convention (A/RES/2826 XXVI)
April 10, 1972	Signing of Bacteriological (Biological) and Toxin Weapons Convention (A/RES/2826 XXVI)
March 26, 1975	Bacteriological (Biological) and Toxin Weapons Convention (A/RES/2826 XXVI) enters into force
1980	Start of operation of the UNIDIR
June 5, 1992	Establishment of the Convention of Biological Diversity (UNCBD)
January 1, 1998	Establishment of the UNODA as the Department for Disarmament Affairs (A/51/950)
January 29, 2000	Adoption of Cartagena Protocol on Biosafety to the Conventions on Biological Diversity
September 11, 2003	Cartagena Protocol enters into force
April 28, 2004	Adoption of the UN Security Council Resolution 1540 (S/RES/1540); Committee 1540 established
April 27,2006	Adoption of the UN Security Council Resolution 1673 (S/RES/1673)
April 25, 2008	Adoption of the UN Security Council Resolution 1810 (S/RES/1810)
April 20, 2011	Adoption of the UN Security Council Resolution 1977 (S/RES/1977)
May 24, 2018	Launching of UN Secretary General's new disarmament agenda, entitled "Securing Our Common Future"
February 25, 2022	Adoption of the UN Security Council Resolution 2622 (S/RES/2622)
November 30, 2022	Adoption of the UN Security Council Resolution 2663 (S/RES/2663)

Previous Attempts to Resolve the Issue

There was a previous attempt starting from November 1988 to address the issue of biotechnology and the threat to humanity's social and economic development by the United Nations Environment Programme (UNEP) to explore the need for an international convention on biological diversity. June 5th, 1992 by the establishment of the

Convention of Biological Diversity (UNCBD) at the United Nations Conference on Environment and Development. This convention aimed to represent a dramatic step forward in the conservation of biological diversity, the sustainable use of its components, and the fear and equitable sharing of benefits arising from the use of genetic resources. Furthermore, the *Cartagena Protocol on Biosafety to the Convention on Biological Diversity* was also covered by the previous Convention. This was adopted on January 29th 2000, as a supplementary agreement to the UNCBD as an international treaty governing the movements of living modified organisms (LMOs).

Disarmament talks after the Second World War addressed biological and chemical weapons together, but no official conventions or statements were made regarding the issue of these WMDs. In 1968, the governments finalized the negotiations of the Nuclear Non-Proliferation Treaty (NPT), a UK-led discussion to pave the way for discussing biological and chemical weapons. Then, on December 16th 1971, the Bacteriological (Biological) and Toxin Weapons Convention (BTWC) was adopted by the General Assembly, as resolution 2826 (XXVI). The BTWC prohibited State Parties from undertaking (in any circumstances) the development, production, stockpiling or otherwise acquiring or retaining agents, or toxins in association with weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict. The resolution was approved and opened for signature on April 10th 1972 and entered into force on March 26th 1975.

In 2004, the 1540 Committee was established to manage and verify that the clauses of Resolution 1540 were met, a resolution to recognize the importance of multilateral treaties and other arrangements, preventing non-state actors from using or possessing any type of WMD. However, the provisions for the resolution itself were not obligatory and did not have an action of force among all nations Thereon, several resolutions were made to strengthen this resolution and extend the mandate for the committee, the most recent one being Resolution 2663. Lastly, at the Geneva Conference on 24 May 2018, the Secretary-General launched the new disarmament agenda, further stressing the importance of the way of approach towards the issue of disarmament and calling for nations to cooperate towards the total elimination of WMDs.

Possible Solutions

Providing solutions to the issue by strengthening conventions and recognizing the possible threats of biological and toxin weapons is important and can be done in these two (but not limited) ways. In order to strengthen the conventions and prevent other non-governmental and regional organizations from utilizing biological and toxin weapons, the UNODA could establish a convention with small organizations as listed above to contribute to non-proliferation. This convention would not bind all parts of the organizations; however, it would have mandatory clauses that prevent these organizations from gaining access to biological and toxin weapons.

Another way to resolve the matter is to construct a verification mechanism to guarantee compliance. There is a monitoring system of the 1540 Committee, however, a further strengthened and complex verification system would help in identifying issues. The Biological and Toxin Weapons Convention (BTWC) does not have a

verification mechanism that ensures that the nations are complying with the Non-proliferation Act and other factors of the convention, as mentioned in the conventions and multilateral agreements signed. Having an organization or a committee to surveillance, monitor and identify issues would ensure that governments are working toward the elimination of biological and toxin weapons.

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