

IN LIEU OF PAPER TIGERS: AN ANALYSIS ON THE BIOLOGICAL WEAPONS  
CONVENTION'S NEGOTIATIONS AND SUGGESTIONS FOR THE FUTURE

by

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## THESIS ABSTRACT

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Title: In Lieu of Paper Tigers: An Analysis on the Biological Weapons Convention's Negotiations and Suggestions of the Future

The Biological Weapons Convention has been criticized for its lack of measures that prevent biological and toxin weapons from being used on civilians around the globe. The Biological Weapons Convention is the main international disarmament treaty that attempts to prohibit the development, production, and stockpiling of bacteriological and toxin weapons. In the 1990's, the State Parties of this treaty entered into negotiations in an attempt to create mandates that would further prevent biological warfare, by focusing on facets of this treaty that are weak (Littlewood, 2012). From 1994 to 2001, the Ad Hoc Group for the Biological Weapons Convention negotiated these measures. Though there were multiple areas of the negotiation process that amplified the failure, one measure ended the Biological Weapons Convention's negotiations completely in 2001—the verification protocol. This thesis argues for the removal of the verification protocol from the negotiation table in lieu of stalemate and paper tigers.

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To Carol and Don for teaching me to ask, “why”

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# CHAPTER I

## INTRODUCTION

The Biological Weapons Convention is the main international disarmament treaty that attempts to prohibit the development, production, and stockpiling of bacteriological and toxin weapons. In the 1990's, the State Parties of this treaty entered into negotiations in an attempt to create mandates that would further prevent biological warfare, by focusing on facets of this treaty that are weak (Littlewood, 2012). From 1994 to 2001, the Ad Hoc Group for the Biological Weapons Convention negotiated these measures. Though there were multiple areas of the negotiation process that amplified the failure, one measure ended the Biological Weapons Convention's negotiations completely in 2001—the verification protocol. Unable to agree to an on-site verification protocol, where sites carrying the means for biological and toxin weapons would be regulated with inspections, the United States pulled out of negotiations in late 2001, prior to the anthrax attacks in the United States. The United States disagreement pertaining to the on-site verification protocol not only ended Ad Hoc Group negotiations, but led to the stalemate of future negotiations and stalled all other mandates from occurring that could possibly benefit this treaty.

Biological warfare has been used since the first historical recordings of conflict. Rooted in the ancient past, biological agents and toxins were applied to win wars and deter the enemy, but not without the drawbacks of unintentional infection, injury, and death (Langford, 2004). Modern history, which advanced microbiology, induced the development of biological agents. Large wars, like World War I and II, started the race for offensive and defensive technologies, which led to nations that had the fiscal means

and purpose for biological warfare to begin research and development programs (R&D). On one hand, R&D programs gave nations and groups a sense of security against attackers as agents were isolated, studied, and weaponized into aerosols, powders, and bombs. Yet, on the other hand, the world was seeing the first effects of cutting-edge biological warfare. The use of biological and toxin weapons are silently waged battles for the main fact that they are only detectable after an attack has occurred. Not only do these weapons have the capabilities to vastly destroy life, but they also infect populations with immense psychological harm, including fear, paranoia, and isolation (Radosavljevic, Jakovljevic, 2007).

International treaties were formed in light of the advancements in chemical and biological warfare (Kadlec, Zeicoff, 2000). In 1925, the Geneva Protocol, rejected the use of biological and chemical weapons but did not prohibit the stockpiling of these weapons. Second, the Biological Weapons Convention (BWC), was created in an attempt to give the international community a heightened sense of security towards biological warfare. The BWC was negotiated in Geneva from 1968-71, and opened for signature in 1972. As a supplement of the 1925 Geneva Protocol, the BWC prohibited the development, production, and stockpiling of bacteriological and toxin weapons, and moreover, ordered their destruction. Unfortunately, the lack of enforcement in this treaty has led many professionals in the biological and toxins field to believe this treaty to be toothless, doing little to prevent potential biological warfare attacks (Christopher, Cieslak, Pavlin, & Eitzen, 1997; Hilleman, 2002; Littlewood, 2012). Since the first signatures of the BWC, a conference has been mandated to occur at least every 5 years (with ad hoc meetings every year or so), which reviews the BWC's "operation, relevant scientific and technological

developments” (unog.ch/bwc). In essence, the review and ad hoc meetings have been a platform for nations’ representatives to negotiate confidence-boosting measures of this treaty. Since the first review conference in 1980, the BWC has been updated during every convention through multilateral negotiations between the participating nations. One update, which is highly regarded by the convention, was the creation of the Implementation Support Unit (ISU). The ISU was agreed on in 2007, and would be tasked with “administrative, CBM-related [confidence boosting measures], implementation, and universalization functions” (unog.ch/bwc). Other than the criticisms from biological arms researchers, the BWC has also faced some setbacks, including two signatory nations—Russia and Iraq—participating in activities that were prohibited by the convention (Christopher et al., 1997). These setbacks further demonstrate the BWC ineffectiveness of accomplishing their main goal: eradicating and preventing the proliferation of bioweapons (unog.ch/bwc).

At the start of the BWC, it was praised for being the first disarmament treaty for weapons of mass destruction (WMD) (Littlewood, 2012). Yet, global security has changed in the 44 years since the BWC was born; the international community, concerned with the proliferation and use of WMD’s, seeks to have a treaty that relies on more than just mutual trust between the parties involved.

The key players in this BWC are China, France, the United Kingdom, Russia, and the United States, who all have the right to veto in the United Nations Security Council which give them undeniable power during the process of treaty creation. This right includes the ability to veto an investigation by the Security Council if a complaint is filed against a nation who is suspected of violating the terms of the convention.

Advancements in technology (e.g. vaccinations, and improved biological weapons detection) have given the world a semblance of hope pertaining to biological attacks. For the BWC, though, the major negotiated setback has been the inability to agree on the use of a verification system. Scientists in the field have regarded some stipulation of verification in any WMD treaty as incredibly important. An on-site verification system has been the main negotiated term that has left the BWC at a standstill. On-site verification procedures have been exhausted at the negotiation table, and for years, an agreement could not be reached. This discord eventually led the United States to refuse to negotiate on all protocol issues, which stopped the BWC's progress towards a better treaty.

Even though there is a lot of value to the on-site verification of laboratories that have the ability to weaponize, and stockpile biological agents and toxins, tabling the verification measure, for now, would be most beneficial for this treaty. The international political culture of arms control has changed since the beginning of this treaty, enabling negotiations to also change (Croft, 1996). In order to understand the negotiation process, and suggest improvements, this thesis seeks to analyze, and understand the changes that the BWC has faced over its 44 years. Research has supported the fact that there are more measures that, if negotiated, would lead towards a toothier treaty, yet, these issues are being suffocated by the contended on-site verification system. In lieu of another stalemate at the next conference, this thesis will argue that it is in the best interest of the BWC to table the verification system measure for now, and through a negotiation-based analysis, I will suggest solutions for the future.

To build on the main focus of this thesis—the Biological Weapons Convention’s negotiations during the 1990’s and its contended verification protocol—this paper will give a brief historical perspective of biological and toxin weapons, identify the main players involved in the BWC negotiations, survey the BWC and its negotiations, and in conclusion, argue removing the verification protocol from the table in lieu of stalemated negotiations.

## CHAPTER II

### BACKGROUND

#### Working Definitions:

For the purpose of this thesis, we will assume that *biosafety* is the “application of knowledge, techniques, and equipment to prevent personal, laboratory, or environmental exposure to potentially infectious agents or biohazards,” (medicinenet.com). Biosecurity can be defined as, all instances or measures that aid in, “(1) preventing inappropriate persons from gaining access to materials, equipment, or technology that could be used in producing biological weapons; or (2) detecting, characterizing, or responding to outbreaks of diseases that involve biological pathogens or toxins” (*Countering biological threats*, 2009).

Because of the infrequency of biological weapons discussions, sometimes there is confusion when differentiating between chemical and biological weapons. The World Health Organization (WHO) defines biological agents as an agent that is designed to target human beings, plants, or animals with the intention of war, death, and/or harm by infecting them with disease-causing microorganisms and other biological entities, including viruses, infectious nucleic acids, prions, and toxins (World Health

Organization, 2004). In contrast to biological weapons, chemical weapons can be defined as weapons that are “effective because of the toxicity of their active principles.”

Chemical weapons are also “biological” but do not have an infection state. Instead, chemical weapons are effective because of the active principles in them are engineered to be more toxic (i.e. sarin gas, and tear gas) (World Health Organization, 2004).

Bioterrorism is the intentional release of biological agents or toxins onto humans, animals, and plants to cause harm (Center for Disease Control, 2007).

The National Institute of Allergy and Infectious Diseases (NIAID) has created a categorical list of priority pathogens [table 1]. This list was developed, and refined in conjunction with the group responsible for determining threats, U.S. Department of Homeland Security, and the group responsible for responding to emerging diseases, Centers for Disease Control (CDC). Every disease and agent on this list has a high level of threat if it was intentionally, or accidentally released. The diseases and agents are categorized from A – C, based on certain severity factors, which are defined in table 1 (NIAID, 2016).

## A Brief History of Biological and Toxin Weapons:

### Pre-modern history

It is no secret that history dramatically influences the way international policy, and treaties are created. Moreover, the study of biological and toxin warfare gives us a glimpse into the impact that a biological attack would have on, not only a nation, but our world.

Biological warfare is an ancient idea, and has been used for centuries to cripple groups of people (Christopher et al., 1997). Microorganisms and toxins were used in their

Table 1  
*Category A, B, and C Priority Pathogens*

Category/Definitions	Diseases/Agents
<p><b>Category A</b>            The organisms/biological agents that pose the highest risk to national security and public health            Can be easily disseminated or transmitted from person to person            Result in high mortality rates and have the potential for major public health impact            Might cause public panic and social disruption            Require special action for public health preparedness</p>	<p>Anthrax            Botulism            Plague            Smallpox            Tularemia            Viral hemorrhagic fevers (e.g., Ebola, Rift Valley Fever, Dengue)</p>
<p><b>Category B</b>            Are moderately easy to disseminate            Result in moderate morbidity rates and low mortality rates            Require specific enhancements for diagnostic capacity and enhanced disease surveillance</p>	<p>Brucellosis            Glanders            Psittacosis            Ricin toxin            Epsilon Toxin            Staphylococcus enterotoxin B            Typhus fever            Food and waterborne pathogens (e.g., <i>E.coli</i>, Salmonella, Hepatitis A, <i>Giardia Lamblia</i>, Microspordia)            Mosquito-borne encephalitis viruses (e.g., West Nile virus)</p>
<p><b>Category C</b>            Third highest priority and include emerging pathogens that could be engineered for mass dissemination in the future            Availability            Ease of production and dissemination            Potential for high morbidity and mortality rates and major health impact</p>	<p>Emerging infectious diseases such as Nipah virus and hantavirus</p>

Source: (<https://www.niaid.nih.gov/topics/biodefenserelated/biodefense/pages/cata.aspx>)

most basic forms before the twentieth century to inflict disease by contaminating fabrics, water, and food supplies, and using them on weapons (Langford, 2004). Excrement, human cadavers, animal carcasses, and contagions were used to inflict disease. Wells were contaminated with rye ergot—a mycotoxin found in a species of fungus, which causes death painfully through fluid loss (blood, vomiting, and diarrhea)—by the

Assyrians and the Persians in the 4<sup>th</sup> and 6<sup>th</sup> centuries B.C.E. Even earlier, Scythian archers (400 B.C.E.) used “poison” arrows, which were dipped in blood and manure against their enemies. This primitive use of microorganisms still persists throughout history and was seen with the use of excrement on punji sticks by Viet Cong in the early 1960’s (Christopher et al., 1997).

The quote, *armis bella non venenis geri*—“war is waged with weapons, not with poison,” was spoken by a Roman jurist after a poisoning of well-water occurred. This statement reflects the objectionable nature that was held towards biological terror even during the ancient era (Barnaby, 2000). The Roman general, Hannibal, circa 184 B.C.E., ordered the navy to throw clay pots filled with poisonous snakes onto enemy ships while in battle (Langford, 2004). Hannibal’s barbaric warfare made him victorious, and helped pave the way for the Romans to experiment further with toxins and microorganisms. The Romans catapulted hornets’ nests onto their enemies in battle, and poisoned numerous wells, reservoirs, and other water sources. This contamination was contributed to the Romans defeat of Aristonicus’ army and their continued reign of Rome.

One of the symptoms of biological warfare seems to be the spread of fear, which can lead to the defeat of a nation, even without the spread of any physical disease. An example of this tactic was seen throughout the Middle Ages, when dead animals and humans were catapulted over defensive walls. The siege of Thyne Levesque in 1340 A.D. located in present-day France, during the Hundred Years’ War, was one of the earliest attempts at throwing dead horses over castle walls. The Duke of Normandy won the battle without even causing disease to spread, yet, the fear of sickness was enough for the defenders to withdraw (Langford, 2004).

With the observed effectiveness of this tactic, it became fairly common for attackers to throw the dead over walls, or contaminate water supplies with animals and humans during the Middle Ages. While looking for vectors of plague and leprosy, both living and dead humans, and animals were sought out during the Crusades. Furthermore, even infected individuals that were still alive were placed in containers filled with fecal matter and thrown over walls in the hopes of spreading disease.

The 14<sup>th</sup> century siege of Kaffa (present-day Ukraine) led the Tatars to catapult their own soldiers, who had died of plague, over their enemy's defense walls in an attempt to infect them. Moreover, refugees of Kaffa, and possibly rats, infected with plague, boarded ships that traveled to Constantinople, Genoa, Venice, and other ports in the Mediterranean. Research supports the idea that this led to the second outbreak of plague, though, it is not certain that the physical throwing of plague-infested bodies was the main mechanism for the outbreak (Christopher et al., 1997). One of the main problems of biological warfare during the Middle Ages, which still remains an issue today, is that victorious armies that entered an area they defeated using a virus, would be infected, as well (Hillman, 2002). Along with the lack vaccines at the time, the use of biological weapons usually meant the spread, and destruction of more than just an opposing army. Moreover, lack of hygiene and sanitation practices greatly increased the risk of spreading, for example, the second outbreak of plague. In turn, this fact has lead scientists to believe that the sole act of catapulting infected vectors over walls might only be one factor that started the plague to spread for the second time in history (Christopher et al., 1997).

Toxins also played a role in the pre-modern era. Batrachotoxin, sources from tree frogs, was used on the ends of spears in Hawaii, while aconite, from monkshood plant was used by the Moors in Spain in 1483. Chili peppers were used by the Inca in South America against the Portuguese, which when burned acted as a pre-modern tear gas (Langford, 2004).

One of the more discussed biological weapon attacks was the use of fomites against the Native Americans during the French and Indian War (1754-1767). While the transmission of smallpox through droplet transmission (the transmission of contaminated body fluid during sneezing, coughing, etc.) compared to by fomites (transmission when in contact with a contaminated object), is much more efficient, Captain Ecuyer (June 24, 1763) gifting blankets from the smallpox hospital to the Native Americans still enabled the spread, and furthermore, smallpox epidemic of the Ohio River Valley tribes, who were not immune to this disease (Christopher et al., 1997).

A pattern arose from these cases of potential biological warfare to researchers. With an outbreak of a disease, humans were attempting to use it for their advantage, which makes it difficult for scientists to determine the (a) source of the disease and (b) vector of how is spread. This issue, that is discussed in detail later, poses a problem for modern day scientists seeking the reason for a particular disease outbreak; on one side, a naturally occurring epidemic can be suspected as odious terrorist activity, and may be used as propaganda against an enemy country. On the other side, actual biological warfare is easily disguised as naturally occurring, making biological and toxin warfare incredibly dangerous.

## Modern History

With the development of modern microbiology, scientists were able to start isolating, producing, and stockpiling pathogens. With his research in bacteriology, the German physician and microbiologist, Robert Koch, dramatically advanced this field by discovering the causative agents of some of the most relevant toxins used for biological weapons (Clunan, Lavoy, & Martin, 2008). For example, among Koch's agents, was *Bacillus anthracis*, which he discovered was the causative agent of the disease anthrax. In his research, he discovered that anthrax spores could remain dormant under specific conditions, but also, under optimal conditions (like in a powder form), could be activated to cause disease. In turn, these advances in science changed the way the world understood warfare (Zilinskas, 2000). Along with Koch's postulates, Louis Pasteur developed the microbiology field with his work with vaccination, pasteurization, and microbial fermentation. These advances were the seedlings for the some of the first modern attempts at biological terror during World War I (Hilleman, 2002).

During World War I, German forces attempted to infect the livestock of neutral trading partners, which they hoped would eventually disrupt the Allies' food supply. Allegedly, cattle, sheep, horses, and mules, were injected and fed *Bacillus anthracis* and *Burkholderia mallei* during various points of the war: 1915 to 1918 in an attempt to infect Allied forces, resulting in the death of more than 200 mules, and in animal feed and inoculations devised to infect horses that were being exported to the French cavalry (Christopher et al., 1997; Langford, 2004). The death percentage of animals was small to the Allied forces, and resulted from the direct inoculation of these diseases. There is no documented zoonotic transmission of *B. anthracis* or *B. mallei* to the livestock the

Germans targeted, in turn, making the case of this biological weaponry widely seen to scientists as unsuccessful (Langford, 2004).

As World War I concluded, the international treaty in 1925, the Geneva Protocol, was created by the League of Nations, declaring, the “prohibition of the use in war of asphyxiating, poisonous or other Gases, and of bacteriological methods of warfare” (state.gov, 2002). This treaty was the first to prohibit the use of biological and chemical weapons. The lack of prohibition on the development, stockpiling, and transfer of these weapons raised a major concern for the international community, leaving nations racing to research and develop pathogens for defensive and/or offensive measures [table 2] (Barnaby, 2000; Hilleman, 2002).

Table 2  
*Research and Development Programs Following the Geneva Protocol*

Nation	Years
France	1922 – 1928, 1934 – 1940
USSR	1926 – unknown
Japan	1932 – 1945
Italy	1934 – restricted
Hungary	1936 – unknown
UK	1936 – unknown
Canada	1938 – unknown
China*	unknown
Germany	1940 – unknown
United States	1943 – 1969

\* suspected but not documented (Langford, 2000)  
(Hilleman, 2002; Langford, 2000)

In 1939, World War II had begun, and “bioweapons research achieved the level of high science with state of art and sophistication” (Hilleman, 2002, p. 3056). With most of the information stemming from somewhat inadequate intelligence reports [table 2], reliable data is scarce for the use of bioterror during World War II. Yet, some of the data

that has been collected during this time period includes the Japanese research and development program that started prior to World War II, during their occupation of Manchuria (Christopher et al., 1997). While leading this program, in succession, the two directors—Shiro Ishii (1932-1942) and Kitano Misaji (1942-1945)—created Unit 731 in Harbin, China, which would be the hub of biological warfare research. With “150 buildings, 5 satellite camps, and a staff of more than 3000 scientists and technicians,” Unit 731 experimented on prisoners by injecting them with pathogens [table 3], leading to the deaths of at least 10,000 captured prisoners, from either exposure or execution after inoculation (p. 413). Testimony from captured Unit 731 participants during a war crimes prosecution stated that there were at least 12 field trials of biological weapons in 11 Chinese cities. These trials included contaminating water and food supplies, dropping biological cultures into houses, spraying pathogens from aircrafts, and dropping approximately 15-million plague-infested fleas over Chinese cities. Though advances in microbiology had come far, the Japanese were not properly prepared to handle this type of warfare, and an the attack on Changteh in 1941 left 1,700 Japanese troops dead, mostly of cholera. This issue that still plagues the use of bioweapons today, was one of the reasons in 1942, Unit 731’s field trials were terminated, and became a basic research facility until the end of World War II (Christopher et al., 1997; Hilleman 2002). After World War II, a treaty was formed between the United States and Japan. One factor of this treaty was that Unit 731 scientists gave the United States information on the research and trials that occurred for war crimes immunity.

Table 3  
*Biological Weapons Research & Development During World War II*

Nation	Number of workers (estimated)	Main Research
Germany	100-200	Offensive research prohibited
UK	40-50	Agriculture and livestock diseases, foot-and-mouth, anthrax
Japan	3000 +	Anthrax, Cholera, <i>Shingella</i> spp, Salmonella, Bubonic plague*
USSR	Several hundred	Typhus, Bubonic plague
US*	1500 +	Chemical herbicides, anthrax, brucellosis

\* The US' R&D program started much later than other nations' programs during WWII  
 \* all other large operations are sealed due to a United States treaty where immunity was granted for war crimes  
 (Christopher et al., 1997; Hilleman, 2002)

While observing the effects of chemical and biological warfare on the world, President Roosevelt authorized Secretary of State Stimson, to establish an agency that would develop a program to combat biological warfare (*Countering Biological Threats*, 2009). Under supervision of civilian agency, the War Reserve Service, the program started in 1942, nearing the end of the war. The main research facility was located at Camp Detrick, Md, with testing sites in Mississippi, and Utah, and a production plant in Indiana. The research collected during 1942 – 1945 went unused during this war. After World War II ended, the production plant was leased to a pharmaceuticals company, while Camp Detrick's (now known as Fort Detrick) research facilities remained running (Christopher et al., 1997).

The United States biological weapons research program was further developed, and expanded to a new production facility in Arkansas during the Korean War (1950 – 1953). Advances in fermentation, storage, weaponization, and production occurred during this time [table 4].

Table 4

*Biological Agents Weaponized and/or Stockpiled by the US Military from 1945-1969 (Destroyed 1971 -1973)*

Lethal Agents	<i>Bacillus anthracis</i> (anthrax), Botulinum toxin, <i>Francisella tularensis</i> (Tularemia)
Incapacitating Agents	<i>Brucella suis</i> , <i>Coxiella burnetii</i> (Q fever), Staphylococcal enterotoxin B, Venezuelan equine encephalitis virus, Yellow Fever
Antiplant Agents*	Rice Blast, Wheat stem rust, Rye stem rust

\*Stockpiled but not weaponized

(Christopher et al., 1997; *Countering Biological Threats*, 2009; Hilleman, 2002)

The United States was not safe from controversy, though, and was accused of using biological agents against North Korea by the Soviet Union, China, and North Korea. The group that investigated this accusation was implicated as being, “carefully controlled by the North Korean and Chinese governments” (p. 414). In turn, the United States requested an impartial party investigate these accusations. When the World Health Organization (WHO) offered to investigate as an impartial third party, North Korea and China denied the request, stating that the WHO was attempting espionage. In an attempt to resolve this conflict that surrounded choosing an impartial party, 16 nations, including the United States, requested the United Nations form a neutral third party that would investigate this suspected attack, and future allegations. Unfortunately for the United States, the Soviet Union prevented the United Nations to intervene in this conflict.

An important factor to note is that during this conflict, the United States had an offensive biological weapons program which began in 1943, and they were suspected of working with former Unit 731 scientists, for information on the Japanese bioweapons program during World War II, after the immunity deal in 1945 (Zilinskas, 2000). In conjunction with the accusations about the use of bioweapons in North Korea, these elements destroyed the United States’ international goodwill efforts. The international

community was witnessing how powerful propaganda could be on this issue of biological warfare especially because more nations were advancing, producing, and stockpiling biological weapons, along with the fact that not all bioweapons programs were reported [table 5] (Hilleman, 2002).

The conflict between the United States and the Soviet Union during the Cold War did not exclude biological weapons. Accusations of biological and toxin attacks were voiced by both nations. The Soviet Union accused the United States of planning attacks in China, and Columbia, and releasing dengue in Cuba. In contrast, the United States blamed the Soviet Union for aerosolizing *trichothecene mycotoxin*, known better as “yellow rain,” and releasing it over Laos, Kampuchea, and Afghanistan. Most of the accusations remained unsubstantiated because biological agents are difficult to investigate (Radosavljevic, Jakovljevic, 2007).

Table 5  
*Reported bioweapons programs post World War II*

Country	Time	No. of personnel	No. of major facilities	No. of agents weaponized	Stockpiled	Used
UK	1945-1972	?	1	0	No	No
US	1945-1969/1972	3400	3	10	Yes	No
USSR	1945/1993	~60000	~35	10-12 (?)	Yes	?
Iraq	1975-present (?)*	~300	7	5	Yes	No
South Africa	1981-1993	6-10	1 or 2	0	No	Yes

\*Data collected in 2001

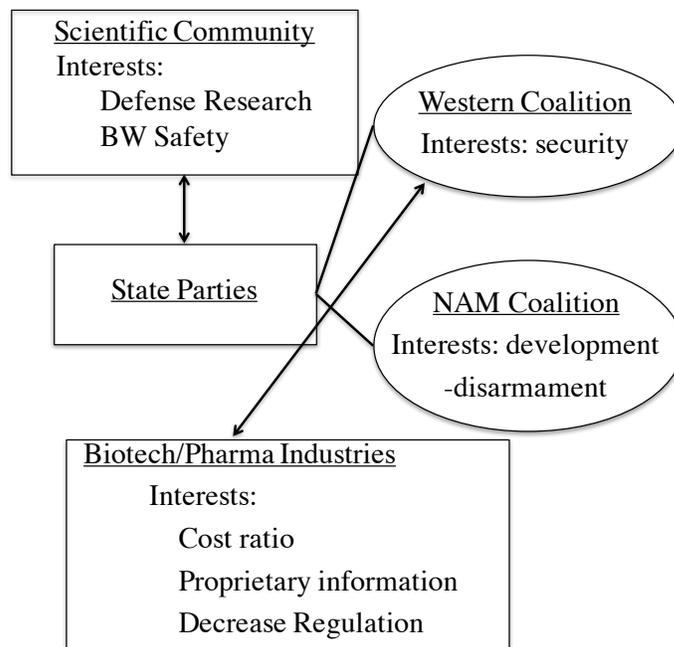
Source: (Hilleman, 2002)

Parties Discussed in the analysis of the Biological Weapons Convention:

The main parties that will be discussed in this paper include some of the Western Coalition State Parties (the United States, the United Kingdom, and Canada). These parties will be discussed in closer detail because of how their interests impacted the

negotiation process of the 1990's and currently affect the BWC. Along with these western parties, Russia, Iraq, the NAM (non-aligned movement) states will also be discussed, due to the fact that these nations' individual interests and relationships have been documented as impacting this treaty (Littlewood, 2012). Along with the State Parties, other parties that sit at this negotiation table include the scientific community and the private industry (i.e. pharmaceutical and biotechnology companies), which both have interests in the terms and conditions of a biological treaty [figure 1].

Figure 1  
*Party Map and Interests of the Biological Weapons Convention's Negotiations*



(Lax & Sebenius, 2006)

The Biological Weapons Convention:

There were four studies that dramatically influenced the international community to develop a treaty for biological and toxin weapons: the United Nations (1969), the

Interdepartmental Political Military Group (1969), the WHO (1970), and the Stockholm International Peace Research Institute (1971-73) studies (Zilinskas, 2000). These studies detailed the horrific impacts that biological warfare might have on the world if they are used. Moreover, they discussed the fact that biological warfare, like chemical weapons, most likely will be used on civilian populations because military personnel are vaccinated for agents, and much more equipped to defend against them. The moral outrage, which occurred after these studies were released, further supported President Nixon's decision to end the United States' offensive biological weapons program, in 1969 (Nixon, 1971).

After seeing the impacts that proliferation and the advancement of biological weapons was having on the world, the Convention on the Prohibition of the Development, Production, and Stockpiling of Bacterial (Biological) and Toxin Weapons and on their Destruction, more commonly known as the Biological Weapons Convention (BWC), was created [table 6] ([unog.ch/bwc](http://unog.ch/bwc)). The BWC was negotiated in Geneva, during 1968-71. The agreed upon text was identical to the text in a deal that predates the BWC between United States and Soviet Union had in mid-1971, called the Conference of the Committee on Disarmament (CCD). The committee for the BWC was composed of 18 nations. The BWC opened for signature on April 10, 1972, amidst the cold war, in London, Moscow, and Washington D.C. and entered into force on March 26, 1975 (Langford, 2004). There were over 100 signatory nations including Iraq and members of the Security Council (China, France, the Soviet Union, the United Kingdom, and the United States).

With the signatures of 162 states, this treaty mandated the destruction of any biological and toxin weapon stockpiles. Three State Parties, the United States, the Soviet

Table 6  
*Key Provisions of the Biological Weapons Convention*

Article	Provision
Article I	Never under any circumstances to acquire or retain biological weapons.
Article II	To destroy or divert to peaceful purposes biological weapons and associated resources prior to joining.
Article III	Not to transfer, or in any way assist, encourage or induce anyone else to acquire or retain biological weapons.
Article IV	To take any national measures necessary to implement the provisions of the BWC domestically.
Article V	To consult bilaterally and multilaterally to solve any problems with the implementation of the BWC.
Article VI	To request the UN Security Council to investigate alleged breaches of the BWC and to comply with its subsequent decisions.
Article VII	To assist States which have been exposed to a danger as a result of a violation of the BWC.
Article X	To do all of the above in a way that encourages the peaceful uses of biological science and technology

Source: [unog.ch/bwc](http://unog.ch/bwc)

Union, and the United Kingdom were designated as Depositaries of the Convention. By the time the BWC entered into force, State Parties had deposited and, thus, destroyed instruments of ratification, which included toxin and biological strains and other modes of weaponry, like missile containers. There were also internal ratification measures that occurred in each nation during this time, including the dismantlement of offensive programs around the globe. At the time, it was hailed as the first “multilateral disarmament treaty to ban the production and use of an entire category of weapons” ([unog.ch/bwc](http://unog.ch/bwc), p.1).

#### Transformation of the BWC

According to the convention, this treaty has “strived to ensure that the Convention remains relevant and effective, despite the changes in science and technology, politics and security since it entered into force” ([unog.ch/bwc](http://unog.ch/bwc)). In doing so, the BWC has mandated a conference to occur every five years (Article XII) since it entered into force

in 1975. Since the birth of the BWC, there have been seven review conferences (eighth review scheduled for 2016) where state parties multilaterally agreed on an updated document [table 7].

Table 7  
*Decisions made by the Review Conferences*

Review Conference	Date	Main Amendments/Decisions
1	Mar 3 – 21, 1980	<ul style="list-style-type: none"> <li>• Texts of implementation measures should be provided to the United Nations</li> </ul>
2	Sept 8 – 26, 1986	<ul style="list-style-type: none"> <li>• Permitted the WHO to coordinate emergency response measures in cases of alleged use of biological and toxin weapons</li> <li>• Established the Confidence Boosting Measures (CBMs)</li> </ul>
3	Sept 9 – 27, 1991	<ul style="list-style-type: none"> <li>• Requested state parties to re-examine implementation measures</li> <li>• Revised Formal Consecutive Meetings</li> <li>• Revised CBMs</li> <li>• Encouraged United Nations Secretary-General to conduct investigations into allegations of biological and toxin use</li> <li>• Established Ad Hoc Group of governmental experts, entitled VEREX</li> </ul>
4	Nov 25 – Dec 6, 1996	<ul style="list-style-type: none"> <li>• Established that all destruction and conversion activities of former weapons and related facilities should take place prior to accession to the convention</li> </ul>
5	Nov 19, 2001 – no agreement* Suspended until Nov 11 – 22, 2002	<ul style="list-style-type: none"> <li>• Established a series of annual Meetings of Experts and Meetings of States Parties in order to strengthen the convention</li> </ul>
6	Nov 8 – 20, 2006	<ul style="list-style-type: none"> <li>• Series of decisions of recommendations to strengthen the convention</li> <li>• Creation of the Implementation Support Unit (ISU)</li> <li>• Plan of Action to expand membership</li> </ul>
7	Dec 5 – 22, 2011	<ul style="list-style-type: none"> <li>• Established a re-structuring of the intercessional meetings to include specific agenda items including developments in science and technology, promoting cooperation and assistance, and strengthening national implementation</li> </ul>

\*No agreement due to divergent positions on the Ad Hoc Group. Agreements made in 2002 for Fifth Review Conference

Source: [unog.ch/bwc](http://unog.ch/bwc)

Over the years, the state parties have adapted the BWC to better fit the world's adapting interests. In the convention's literature ([unog.ch/bwc](http://unog.ch/bwc)), these adaptations have been influenced by not just state parties' interests, but also, the overall "mission" of the BWC—to stop the proliferation, and offensive research of biological and toxin weapons. In order to understand the negotiated agreements of the State Parties, the main changes to the treaty should be discussed. Table 7 addresses all the changes that were made to the treaty. An explanation of the key developments of this treaty will make the analysis of the Ad Hoc Group negotiations more transparent later.

#### Establishment of the Confidence Boosting Measures

One way to determine the BWC's rate of compliance within state parties, is by analyzing the first measure that sought to increase confidence in the convention: the confidence boosting measures.

During the early years of the BWC, an erosion of confidence between the State Parties lead to the Convention's willingness to implement a series of measures that would help to bolster trust between the parties involved (Littlewood, 2012). In turn, during the second review conference in 1986, a section of the treaty entitled, Confidence Boosting Measures (CBMs) was established. The CBMs have been updated and expanded over the years to its current form [table 8]. A meeting was held in coordination with the scientific community, with what the BWC calls a "meeting of scientific and technical experts," where the CBMs were created for the state parties. Annually, every April, State Parties turn in these CBMs to the BWC. Yet, the conference did not see very much participation on these CBMs from State Parties [Figure 2] (Chevrier, Koblenz, 2011). In lieu of compliance and the degradation of confidence between the parties at the time, the

conference agreed to expand the CBMs at the third review conference (unog.ch/bwc). These expansions attempted to establish some semblance of trust between the parties by asking for more data about each nation's laboratories involved in biological and toxin research [table 8]. The CBM form, for example, asks for nations to declare any research and development laboratories, including the staff, containment centers, and pathogens involved ("CBM sample form," unog.ch/bwc). With the expansion of CBMs in 1991, returns from state parties were at a record high, with about a third of the membership reporting on these measures.

In 2006, at the sixth review conference, the newly established Implementation Support Unit (ISU), which was the first staffed program of the BWC, made the CBM submissions completely electronic. The ISU also acted as the first fulltime administrators of the CBMs, which included reminding the State Parties when the due dates of the CBMs and helping with fill out the documentation. In the years following this change, the CBM returns increased. In 2010, 70 State Parties submitted CBM documentation, which still meant only 43% of the membership was compiling to these measures. Furthermore, even if state parties participated in the CBMs, data was disjointed and missing from the filled out forms. Another factor, which may have impacted these returns, was the increased membership from 100 state parties, in 1975, to 175 state parties, as of 2015 [Figure 3].

#### The Implementation Support Unit (ISU)

First established at the sixth review conference, in 2006, the ISU is described by the BWC as the convention's staff responsible for providing administrative support and assistance to state parties. The ISU is comprised of three staff members who work at the

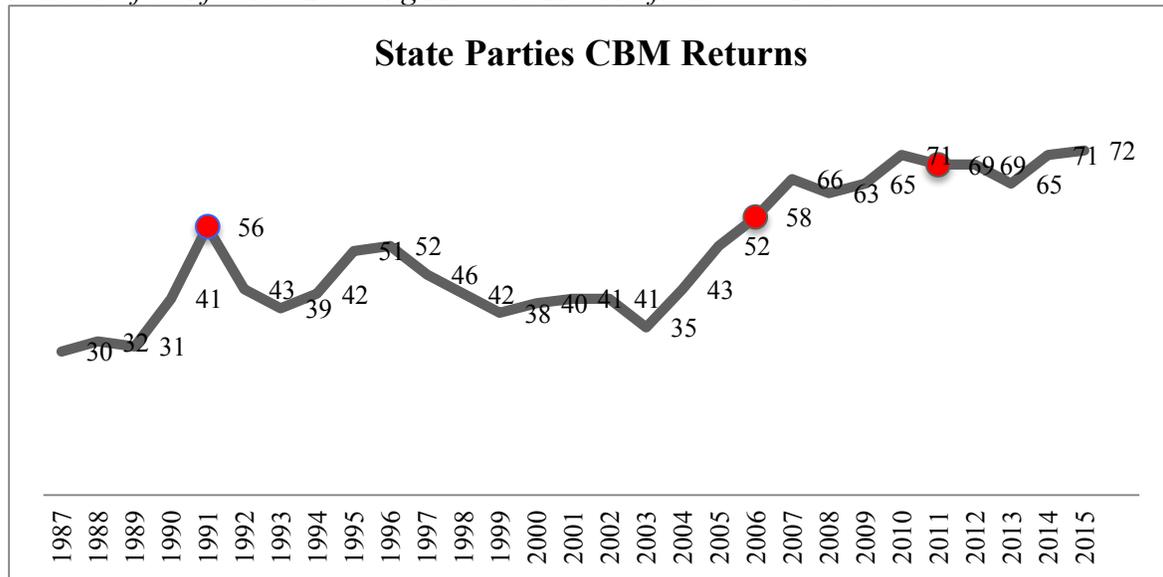
Table 8  
*Confidence Boosting Measures (CBMs) Description (Revised 2011)*

CBM A	Part 1: Exchange of data on research centers and laboratories; Part 2: Exchange of information on national biological defense research and development programs.
CBM B	Exchange of information on outbreaks of infectious diseases and similar occurrences caused by toxins.
CBM C	Encouragement of publication of results and promotion of use of knowledge
CBM E	Declaration of legislation, regulations and other measures.
CBM F	Declaration of past activities in offensive and/or defensive biological research and development programs
CBM G	Declaration of vaccine production facilities

\*CBM D: active promotion of contacts, omitted in 2011

Source: unog.ch/bwc

Figure 2  
*Number of Confidence Boosting Measure Returns from State Parties*

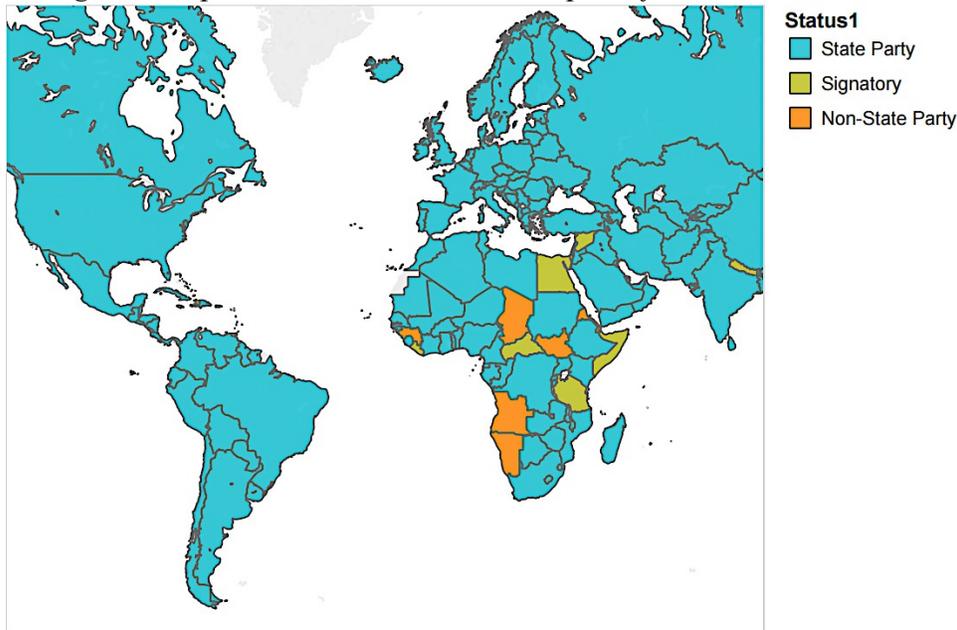


Red Points: Changes in CBMs

Source: unog.ch/bwc

Geneva Branch of the United Nations. This support includes assistance with the CBMs, facilitating information exchange between state parties, scientific organizations and nongovernmental organizations, and preparing documents for the BWC. Concerning the

Figure 3  
*Biological Weapons Convention Membership as of 2015*



\*Signatory: nation that has signed the BWC but has not ratified it yet  
Source: [unog.ch/bwc](http://unog.ch/bwc)

purpose of this paper, the ISU supports, “efforts to implement the decisions and recommendations of the review conference,” that is, they act as facilitators of information sharing between state parties before review conferences occur.

#### The VEREX

The VEREX was established in 1991 at the third review conference. This group, comprised of scientific and governmental experts, wrote a report identifying possible verification measures for the BWC, from a scientific and technical standpoint. These experts were tasked with evaluating certain areas of verification that the conference was concerned with [table 9].

The chairman of the BWC, in 1993, created a report following the meeting the VEREX, which stated that there are potential verification measures that would improve the Convention’s overall goal, including on-site laboratory verification, declarations,

Table 9

*VEREX Criteria for Evaluating Verification Measures*

1. Strengths and weaknesses based on but not limited to the amount and quality of information they provide and fail to provide.
2. Ability to differentiate between prohibited and permitted activities.
3. Ability to resolve ambiguities about compliance.
4. Their technological, material, manpower and equipment requirements.
5. Their financial, legal, safety and organizational implications.
6. Their impact on scientific research, scientific cooperation, industrial development and other permitted activities; and their implications for the confidentiality of Commercial Proprietary Information (CPI).

Source: BWC/CONF.III/VEREX/9

inspections, and remote and satellite surveillance [table 10] (BWC/CONF.III/VEREX/9, 1993). The Chairman’s report of the VEREX’s research described that, though these verification measures have strengths and weaknesses, “...some of the potential verification measures would contribute to strengthening the effectiveness and improve the implementation of the Convention, [and]...that appropriate and effective verification could reinforce the Convention,” (BWC/CONF.III/VEREX/8, 1993, p. 8). Along with the suggestions for advanced verification measures, the VEREX Group supported the idea that state parties becoming more transparent with each other, would mend trust between nations, and in turn, increase overall confidence in the BWC.

Table 10

*Verification Measures Identified and Evaluated by the VEREX 1993*

Off-site Measures	<ul style="list-style-type: none"> <li>• Information Monitoring: surveillance of publications; surveillance of legislation; data on transfers, transfer requests and production multilateral information sharing.</li> <li>• Data exchange: declarations; Notifications. Remote Sensing: surveillance by satellite; surveillance by aircraft; ground-based surveillance.</li> <li>• Inspections: sampling and identification; observation; auditing.</li> </ul>
On-site Measures	<ul style="list-style-type: none"> <li>• Exchange visits: international arrangements.</li> <li>• Inspections: interviewing; visual inspections; identification of key equipment; auditing; sampling and identification; medical examination.</li> <li>• Continuous monitoring: by instruments; by personnel.</li> </ul>

Source: (BWC/CONF.III/VEREX/8, 1993, p. 3-4)

The VEREX report brought on a new wave of the BWC (Langford, 2004). In an attempt to negotiate some of the verification measures that the VEREX suggested, the BWC decided to create an Ad Hoc Group that would hold 24 sessions over the seven years for this purpose ([unog.ch/bwc](http://unog.ch/bwc)).

#### The Ad Hoc Group Negotiations

Explained in further detail in the discussion section, the Ad Hoc Group negotiations, which were held to finalize a better verification measure, did not come to an agreement. Over the course of 24 scheduled sessions, (23 July – 17 August 2001), the group could not come to a consensus on the issue of on-site verification measures. The failure of this Ad Hoc group to reach a resolution, is the most crippling disagreement the BWC has seen thus far (Chevrier, Koblentz, 2011; Langford, 2004; Littlewood, 2012).

#### Establishment of National Implementation Measures

In 2003, the newly instated annual Meeting of State Parties expanded on The VEREX Group's work to enable better national standards for each State Party ([unog.ch/bwc](http://unog.ch/bwc)). The BWC states that it is the responsibility of the individual State Party to ensure that the national standards of each nation complies with the mission of the convention. Yet, because of the legal, fiscal, and constitutional differences of each nation, an overarching national standard would be difficult for each State Party. Instead, the BWC focused on two topics for the betterment of international security: the adoption of measures that allows nations to effectively secure and control the pathogens and toxins that are contained within each State Party's border.

In 2004, the Meeting of State Parties focused on how the BWC could strengthen the surveillance, detection, and diagnosis of biological weapons, while combating

infectious diseases. This meeting also looked at enhancing the capabilities that investigation teams have when outbreaks occur. In turn, the United Nations Security Council was endorsed by the General Assembly to lead any investigations that were suspicious to the Convention ([unog.ch/bwc](http://unog.ch/bwc)).

The BWC was created because the international community was lacking a biological arms treaty that prohibited the development and stockpiling of biological warfare. Before the BWC, the only other disarmament agreement was the Geneva Protocol of 1925, which only prohibited the use of biological weapons as warfare. The BWC's wording was almost identical to the Conference of the Committee on Disarmament, which was an agreement reached in 1971 between the United Kingdom, United States, and Soviet Union. In an attempt to adapt the BWC to changing political, scientific, and global structures, the signatory nations of this treaty meet every five years, with other ad hoc, scientific expert meetings (VEREX Group) occurring in-between. The BWC has gone through a swarm of changes throughout the forty-one years it has existed, including the implementation of bilateral and multilateral engagement to resolve any issues signatory nations are having, restructuring of the document to include scientific advances, and the creation of the Implementation Support Unit. Yet, this treaty has been weakened by the lack of substantial provisions because of the inability for parties to agree on verification procedures.

### CHAPTER III

### DISCUSSION

The Biological Weapons Convention has been criticized for its lack of power over the stockpiling, defensive research, and use of biological and toxin weapons (Christopher,

Cieslak, Pavlin, & Eitzen, 1997; Hilleman, 2002; Littlewood, 2012). This criticism has not gone unnoticed by the BWC and has been reinforced by the VEREX report of 1993 (Hilleman, 2002). As previously discussed, a toothless treaty may factor into the potential use of biological weapons, leading the international community to feel powerless. One reason the BWC has been unable to fix this problem is the issue of verification, which is demonstrated in the negotiations of the Ad Hoc Group from 1991 to 2001.

To understand the reason negotiations have failed for the BWC, I will analyze the time frame between 1991 to 2001, which was the ten-year phase that covered the negotiations of State Parties—from the pre-negotiation to late negotiation stages—in the convention’s attempt to agree on legally binding measures of verification (Littlewood, 2012). In an attempt to organize and simplify the issues the Ad Hoc Group faced during negotiations, I have broken the negotiation timeline into pre-negotiation, negotiation, and final negotiation phases.

The Pre-Negotiation Phase (1991 – 1994):

The phase that started in 1991 for the BWC is important because it marks the start of the convention’s willingness to dramatically improve and shift the treaty’s terms from solely trust-based measures to legally binding agreements. Yet, the willingness to improve this treaty may have started prior to 1991. The seed of a more impactful treaty was planted when the convention agreed to CBMs, which marked a readiness of the state parties to invest more effort into the BWC (Littlewood, 2012).

A merging of players that were and were not visible at the negotiation table, played a role in impacting the Ad Hoc negotiations for the legally binding measures. As previously discussed, the scientific community’s governmental VEREX report of 1993

supported verification measures. The political players involved in the early 1990's marked a change following the end of the Cold War. Lastly, public opinion, in the form of nongovernmental, private, and university research, which mostly criticized the toothless treaty measures, played a role in this pre-negotiation phase (Hilleman, 2002).

#### The Shift in Political Power and Interests

The United States was opposed to ad hoc negotiations towards a verification protocol for the BWC in the early 1990's (U.S. Congress, 1993). Similarly, this stance was reflected during Chemical Weapons Convention (CWC) at the time, which was politically influenced under the administration of President George H.W. Bush. Yet, with the shift in political power in the United States, this position also changed. The Clinton Administration "fully supported the preparation of a protocol containing a regime to strengthen the BWC" (United Nations, 1994). Littlewood describes this political shift as, "effectively tipp[ing] the balance of power in the BWC to those favoring new negotiations" (Littlewood, 2012, p. 110). Furthermore, in a special meeting in 1994, state parties agreed to establish the Ad Hoc Group, which would negotiate protocols for the BWC.

In a compromise between the United States, India, Iran, and the European Union member states, a mandate was agreed upon, which built the Ad Hoc Group's agenda for negotiations. This mandate included, "negotiating issues of definitions of terms, confidence building measures, compliance measures, and measures to promote peaceful cooperation among the states parties" (p. 110). The Ad Hoc group was required to address all mandate sections set forth by this deal and to create a final document once the

negotiations were complete. From 1995 to 2001, the protocol negotiations continued [table 11].

Table 11  
*Phases of the Negotiation Process*

Negotiation Phase/Year	Key Changes
Pre-Negotiation (1991-1994)	1993: VEREX Report suggesting provisions to the BWC, including verification measures 1994: Creation of Mandate that stated what would be covered in the Ad Hoc negotiations: definitions of terms, confidence building measures, compliance measures, measures to promote peaceful cooperation among the states parties
Negotiations (1995-1999)	1995: Implemented the “rolling text” style of negotiation 1996: Extended negotiations because of the complex nature of issues needing to be negotiated
Final Negotiations (2000-2001)	2000: Final text was given out by Chairman. Ad Hoc group was asked to submit final revisions. 2001: Rejection of final draft; United States refuses to continue negotiations but does not leave the table

(Littlewood, 2012)

The Negotiations (1995 – 2000):

Targeted to end in 1996, the protocol negotiations went much longer than was expected by the state parties. One reason for this extension was the fact that the Ad Hoc group had to cover a multitude of issues. First, the issue of legal implications constantly arose during negotiations. Unlike the Nuclear Non-Proliferation Treaty Review in 1995, there were no legal implications of the Ad Hoc meeting failing to negotiate a protocol for the BWC (Langford, 2004). Furthermore, the Geneva Protocol of 1925 would still stand even without group consensus, and the BWC would still be in place. The only thing that the BWC would lack was the addition of protocols, which still needed to be ratified and signed by the rest of the member states after the Ad Hoc group prepared a final document. The Ad Hoc group could agree on legally binding measures for the BWC, yet,

not all negotiated measures needed to be legally binding. A legally binding measure in any treaty holds more power than politically binding one. In turn, the Ad Hoc members were observed as judging the importance of the issues by if one or the other was negotiated as being legally binding (Littlewood, 2012).

Another issue that came up during the negotiations was the 1994 mandate. Under this mandate, “disputes along a north-south axis of conflict was readily apparent” (p. 111). Developing nations who were involved in the Ad Hoc meetings disputed the export controls that the protocol viewed as key diminishing proliferation of biological weapons. In comparison with this dispute, arguments occurred over the definitions of objective criteria in compliance issues with the Western and Eastern nations (Ward, 2004).

The last issue is that arose during negotiations pertained to noncompliance issues between State Parties. One of these compliance issues that caused the destruction of trust between members was the “blatant violation...[from] the Soviet Union’s continued research of offensive biological warfare,” until at least 1992 when President Boris Yeltsin stated that he would put an end any further research and production (Hay, 2000, p. 812; Christopher et al, 1997). In a 1995 report done by the US National Institute, the Russian program still had an estimated 25,000 to 30,000 employees. Furthermore, the Iraqi offensive biological weapons program was uncovered following the Persian Gulf War due to the United Nations inspections. There were two treaties separate from the BWC that addressed these trust issues (Christopher et al, 1997). The Trilateral Agreement between the United States, United Kingdom, and Soviet Union, in 1991, and the United Nations Special Commission (UNSCOM). These agreements may have only partially

addressed the degrading trust between member states, though, which impacted the negotiations on compliance within this treaty (Littlewood, 2012).

During 1995 to 1997, the VEREX findings were analyzed and addressed by the Ad Hoc Group meetings, which also allowed the expansion and development of each party's main interests. Following this early phase, from 1997 to mid-2000, key issues that needed to be negotiated by the Ad Hoc Group surfaced.

The Chairman of the Ad Hoc group, Ambassador Tibor Tóth of Hungary, who also chaired the VEREX committee, used a draft protocol similar to the single text negotiation style, identified by Fisher and Ury, to negotiate the protocol issues (Fisher, Ury, 1983; Littlewood, 2012). This "rolling text" was the sole pamphlet for negotiations and went through a series of changes from the seventh to twenty-second session of the Ad Hoc Group meetings (Littlewood, 2012). The text went through a series of over fourteen-hundred changes because of a lack of consensus between parties. The Chairman used separate meetings to help resolve issues identified from the early stages of the protocol negotiation. These discrete agenda items were separated into Friends of the Chair (12 in total) meetings that were held with smaller groups of members attending. As the negotiations narrowed by the year 2000, the chairman's rolling text went into its final draft stages. During the late stages of negotiations, the Ad Hoc group would leave every session with two documents: the rolling draft and formal proposals from the Friends of the Chair, which were composed of various compromises to consider for the next session. With less than a dozen people seeing the Chairman's final draft, it was given to the Ad Hoc group for viewing on March 30, 2001.

## The Consensus Rule

The Chairman's final draft was an accumulation of negotiations from the seven years prior to 2001, which was comprised of compromises from every member of this Ad Hoc Group. Ipsen identifies the overarching theme of this draft when he reflects on arms control agreements as, "fragile construction[s] of compromises and a minimum consensus related to highly controversial issues" (as cited in, Littlewood, 2012, p. 115). As previously discussed, the BWC was the identical text that the Soviet Union and the United States agreed within the CCD. This deal between superpowers, which was presented to other nations as *fait accompli*, was not reflected in the protocol negotiations of the Ad Hoc group. In turn, this multilateral negotiation gave every party the right to veto and derail the entire draft, which was used as leverage throughout the negotiation process.

### Final Negotiations (2000 – 2001):

During the weeks leading up to the final scheduled session of the Ad Hoc group, State Parties were asked to submit final comments for revisions to the final draft. More than 50 states agreed to negotiate the final draft presented by the Chairman, yet, there were also an estimated of 300 comments and requests for changes. Included in these requests, China, Cuba, Iran, Indonesia, Libya, Pakistan, and Sri Lanka rejected the chairman's draft in May 2001. Moreover, a lot of these requests contradicted one another, which made it impossible to create a consensus between parties. In the end, the United States' lack of commitment to return to negotiations in 2001, alongside the rejection of the final draft from these 7 nations, led the Ad Hoc Group negotiations to capsize from the weight of extensive, derailing compromises.

The United States closed the door on these protocol negotiations. Though the Ad Hoc Group lacked consensus on the final draft, the United States' rejection of the final draft and the decision to leave negotiations was "comprehensive and final" (p. 116). The formal statement by the United States stated that the mandate set for the Ad Hoc Group was not achievable in the protocol negotiations. By the United States refusing to negotiate, but not leaving the table, negotiations could not continue, and therefore collapsed.

On the surface, it is easy to say that the United States' decision to reject the final draft was the reason these negotiations failed. The political changes in the United States in 2001 impacted this rejection quite a bit. With the beginning of the George W. Bush Administration, this nation reverted to the political tone that was established prior to the Clinton Administration. President Clinton was also seen as "lack[ing] direct involvement in the BWC [and] in contrast, President George W. Busk (and opponents of the BWC Protocol) did not" (p. 128). Furthermore, even though these protocol negotiations are commonly known as "verification negotiations," the United States strongly objected verification protocols. In turn, this word did not appear of the final draft, or any other rolling text by the chairman. Interestingly enough, when the United States withdrew from negotiations in 2001, the issue on verification measures was the main reason they openly cited for ending negotiations. The USIP in 2002 noted that, "U.S. negotiators [are stylistically] forceful, explicit, legalistic, urgent, and results-oriented...[and] although these traits inevitably vary according to personalities and circumstances, a recognizably pragmatic American style is always evident" (USIP, 2002). Yet, the internal changes, even coupled with the negotiation styles in the United States cannot be the only factor

into the rejection of this protocol, especially when there was still an overwhelming lack of support for the final draft, so what were these other factors? Furthermore, with other factors that were impacting the completion of this protocol, would there have been a final even if the United States supported it?

We will never know the answer to the second question, yet, for my analysis, I will delve into other diagnoses for the failed negotiations this Ad Hoc Group faced during this process. The causes discussed include the complex nature of multilateral treaty making, the lack of support staff during the negotiations, the breakdown of trust between the parties, the commercial and stakeholder interests away from the negotiation table, framing and loss aversion, and the factor of timing [table 12].

## CHAPTER IV

### ANALYSIS

#### The Reasoning behind failed Protocol Negotiations

The environment that surrounds arms control contains a multi-faceted network, comprised of diplomats, experts from capitals, and governmental and private sector scientists. While factoring in the number of players in the room during negotiations, with the differing levels of expertise, the complex nature of a multilateral negotiation increases (Boyer, 2012). Even with a clear division of roles, players rely on each other's knowledge to make informed decisions as a team negotiation, which can be challenging for even the most advanced negotiators. Moreover, most negotiators, especially in the arms control environment, are not making decisions on their own behalf, and in the case of the protocol negotiations, were chosen, or elected by the capital they represent (Lang, 1993). In turn, during these negotiations, there were of lengths of time where the

negotiators had to check back in with their bosses (confirm with the capital). These delays may have been used as a tactic for some negotiations, but for others, this time delay was just another factor in the culture of arms control (Zabriskie, 1998). However,

Table 12  
*3D Analysis of Ad Hoc Group Negotiations*

Focus	Barriers	Approach
<p>Tactics: win-win and win-lose styles between parties</p> <ul style="list-style-type: none"> <li>Russia, United States, and China: competitive style (win-lose)</li> </ul>	<ul style="list-style-type: none"> <li>Hardball tactics: i.e. United States rejecting protocol has stalled negotiations</li> <li>Destruction of relationships: trust issues between parties</li> <li>Breakdown of communication: leads to misunderstandings between state parties and prolonged negotiation processes</li> </ul>	<ul style="list-style-type: none"> <li>Switch tactics to a win-win approach: focus on overall goal of treaty—ensuring the security of all nations decreases the likelihood of BW attacks</li> <li>Improve communication between parties: adding a support team of facilitators, establish idea creation at the table</li> <li>Repair trust between parties: establishing goodwill efforts by increasing confidence-boosting mandates</li> </ul>
<p>Deal Design: value and substance</p> <ul style="list-style-type: none"> <li>Established values of BWC: a treaty that decreases the likelihood of the use and proliferation of BW while ensuring the destruction of stockpiles</li> </ul>	<ul style="list-style-type: none"> <li>Lack of agreements for the parties that are realistic or desirable</li> </ul>	<ul style="list-style-type: none"> <li>“Go back to the drawing-board” to create options by focusing on interests and not positions</li> <li>Meet objectives and timelines</li> <li>Stick to the structure of the negotiation (i.e. single-text style)</li> </ul>
<p>Setup: scope and sequence</p> <p>Parties:</p> <ol style="list-style-type: none"> <li>State-parties</li> <li>Biotech and pharmaceutical companies</li> <li>Scientific community (i.e. VEREX group)</li> </ol>	<ul style="list-style-type: none"> <li>Parties: too many parties are at the table, not all the parties are at the table, or the wrong parties are at the table</li> <li>Issues, interests, or BATNA’s do not support an agreeable outcome</li> </ul>	<p>Ensure the most favorable outcome for all parties by: identifying interests, “no-deal options,” and the right parties are at the table)</p> <p>Architecture:</p> <ol style="list-style-type: none"> <li>State-party interests: value the protection of borders from biological weapons attacks <ol style="list-style-type: none"> <li>Case Study: United States Interests—protecting the interests of donors (in this case the</li> </ol> </li> </ol>

		biotech/pharmaceutical companies), protecting national security 2. Biotech and pharmaceutical interests: dislike further regulations that increase costs and production times, and want to keep proprietary information secure 3. Scientific Community: increase stability and safety of biological weapons research
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(Lax & Sebenius, 2006)

these complex issues cannot account to a failed negotiation entirely. For example, the Chemical Weapons Convention dealt with similar factors and resolved complex issues from 1980-1992 (Littlewood, 2012).

One aspect this particular arms control negotiation lacked was a support staff. Boyer claims that the more complex a multilateral negotiation is, the more staffing there needs to be to facilitate it (Boyer, 2012). Most of the Ad Hoc Group members had previously worked with each other on arms control negotiations and were described as being professionals in the field (Littlewood, 2012). The one facilitator for these meetings was chairman Ambassador Tóth, who can be described as the institutional support. The fact that these negotiations dragged on for so many years makes it difficult to pinpoint a turning point if/where Tóth disrupted negotiations. Some evidence that is apparent is the single text negotiating style Tóth decided to implement. Though it seemed to be successful for moving negotiations along in the early Ad Hoc sessions of negotiations, this style became less useful near the end because it was used more to gain more

concessions by State Parties who halted the process with requests of revisions. The institutional support also needs to have advanced facilitators that can transcend the competitive atmosphere of arms control negotiations into an agreement for all (Albin, 2012). Yet, if the issues at the table are too tangled for a multilateral negotiation, even an excellent facilitator may not be able to enable a resolution, given the difficulty of implementation. Up to the final draft of the protocol, the negotiations were characterized as successful in a lot of ways. Multilateral negotiations can have an excessive amount of logrolling, without an agreement of a more important, larger interest of the group. This issue might have been a factor in the rejections of negotiations in 2001 (Littlewood, 2012).

Even with the parties preparing for these negotiations, there can be a great deal of uncertainty of the expected interests, and therefore, the outcomes of negotiating with multiple parties (Jonsson, 2012). This uncertainty was intensified by the confusion about other parties' bargaining positions during negotiations (Littlewood, 2012; Shell, 2006). United States withdrew from negotiations in 2001 and avoided negotiating the verification all together. Some experts believe that the avoiding style of negotiation is not an actual strategy, but rather, an abandonment of the problem. In the example of the United States, though, this style proved itself to be a real strategy because it forced the rest of the Ad Hoc group to stop negotiations and in turn, stalled the verification protocols indefinitely or until the United States chose to negotiate them again. There was a fair amount of accommodation (backing down from your interests) during the last meetings of the Ad Hoc group, in an attempt to agree on a final draft (Shell, 2006; Littlewood, 2012). The issue with accommodation in the BWC, is that negotiators can

take advantage of each other if they do not follow through with this bargaining standard. For example, as previously discussed, the single-text protocol negotiation was edited numerous times by each party. Parties believed that others would use the norm of reciprocity (“I accommodated with that edit, now you accommodate next”) as the bargaining standard in the final draft. This assumption did not prove correct. Some parties felt they had accommodated in an attempt for all parties to agree to a final draft (the bargaining standard in this case) only to be asked to accommodate on even more issues later on. The collaborative strategy (also known as the problem-solving strategy) is described by Shell as problem-solving “through good analysis and candid disclosure of interests, find[ing] the most elegant solution by brainstorming many options, and resolv[ing] tough issues using fair standards and criteria” (Shell, 2006, p. 11). This strategy is most desirable in multilateral, complex negotiations like the Ad Hoc protocol meetings (Croft, 1996; Shell, 2006). In an attempt to create a collaborative protocol, the BWC extended negotiations, previously discussed, through 2001. Throughout the years, though, the complex nature of the issues being discussed and the verification problems broke down some of the collaborative efforts of the parties (Littlewood, 2012).

Shell describes relationships as one of the six foundations of effective negotiations (Shell, 2006). In the case of this protocol negotiation, there was a large amount of distrust between the State Parties (with noncompliance by state parties lingering in the background of these negotiations). Shell describes “people [as]...complex and unpredictable,” let alone groups of negotiators who work for nations with changing political climates and external stakeholders (p. 63). Moreover, with the breakdown of trust between the parties, “deals are harder to negotiate, more difficult to

implement, and vulnerable to changing incentives and circumstances,” which was a major issue when dealing with the implementation issues, and increased vulnerability of the parties (p. 59). This factor may have influenced the state parties to maintain belief perseverance (the tendency to cling onto one belief even when presented further information on the subject) throughout the process. In these negotiations, “risk aversions was evident, with a high propensity to highlight losses and play up concessions and compromises on each side,” which may have helped the create coalitions, and thereafter, groupthink (Littlewood, 2012, p.121). The negotiation style of arms control enables groupthink to occur (Myrdal, 1976). During the process of arms control, “negotiators transfer similar approaches, processes, and mechanisms to other problem areas in hope of resolving differences,” and though problem solving tactics can be helpful when used broadly, it can also leave negotiations stagnant, and repetitive (Littlewood, 2012, p. 123). For example, the popular complaint by the United States was that the state parties attempted to mirror the approaches used in the CWC for this protocol negotiation, and though there are similarities in these two treaties, there are also drastic differences. For example, the mandate for the Ad Hoc Group covered much more complex scientific topics on nonproliferation than the CWC, which required more scientific and expert support during negotiations (Christopher et al, 1997). As a field, biological and toxin pathogens is a complex topic which takes years of advance education and experience to understand. The negotiators were comprised of professionals with treaty negotiation and disarmament backgrounds, not biological sciences. Moreover, some issues were either, not being addressed, or being handled incorrectly because of the lack of technological knowledge on the part of the negotiators.

Within the formation of the Ad Hoc Group, there are the politically influenced coalitions that already existed before the time of these negotiations (i.e. the western, and NAM coalitions). However, when a coalition does not agree, which occurred between the United States and its allies, this group cannot rely on belief perseverance between its members. This lack of coherence led to the degradation of support during caucuses between coalitions, which in turn, led to further disputes during negotiations with the entire group.

There is also evidence that framing and loss aversion influenced disputes during Ad Hoc Group meetings because of the differing perspectives of the mandates being negotiated. For example, the Non-Aligned Movement (NAM) states overemphasized the link between disarmament and development, while the Western states emphasized security first and development second. Western states tended to be “particularly averse to any concessions, whereas NAM states tended to be particularly averse to the lack of progress in the development context” (p. 122). As previously discussed, this schism in perspective led to both coalitions leveraging the threat of vetoing power in order to gain more concessions. Alongside this issue, there was a held belief that the NAM states had already conceded too much in the CWC with the exportation and development sections of this treaty. In turn, the BWC protocol negotiations were a platform for NAM states to hold their position, and increase their gains. In conclusion, anchoring, loss aversion, groupthink, and framing all impacted the failure of these negotiations.

The protocol negotiations might have just not been important enough of a problem to the state parties to come to a deal. Zartman identifies two concepts that may be relevant to this idea: mutually enticing opportunity, and mutually hurting stalemate

(Zartman, 2000). In the context of the BWC negotiations, Zartman would say that since biological weapons were not incredibly problematic during the 1990's, the United States' choice in rejecting these protocols would not mutually hurt most state parties (Littlewood, 2012; Zartman, 2000). Furthermore, as previously discussed, unlike the Nuclear Non-Proliferation Treaty Review in 1995, there were no impacts on the BWC if the Ad Hoc group failed to agree, and moreover, this treaty—though toothless—had been without these protocols for sixteen years. Since the issue of a protocol was not entirely pressing for the BWC, these factors likely played a role in some state parties efforts to derail the final draft in an attempt to gain more concessions. We also need to keep in mind the fact that state parties were seen to the international community as at the highest risk of proliferating, and using biological weapons at the time. The anthrax attacks of 2001 in the United States occurred after these negotiations had ended. Furthermore, the United States, who already had external deals with Russia, and the United Kingdom, and with the Iraqi biological weapons program being addressed by the UN, this complex deal might not have seemed necessary after the years spent trying to achieve the marathon that is multilateral arms control negotiations.

The timing factor of these protocol negotiations impacted the way the negotiations turned out (Littlewood, 2012). In Geneva, there was a sense of lost momentum and missed historical opportunities for this protocol to be negotiated. A strong complaint from some of the State Parties was that some members could not be bothered to find the time for this protocol negotiation, which was destructive because of extensive amount of time and effort it takes to complete a multilateral treaty (Boyer, 2012). The fact that major arms control issues were not a major agenda item for the

international community during the mid-1990's supports this lack of passion for the protocol negotiations. External parties—like pharmaceutical companies, and other stakeholders—also played a role by dragging negotiations out by attempting to derail certain measures in the mandate. Possibly the time frame did impact these negotiations. History supports the idea that the early 1990's was the time that arms control negotiation was the most successful during this decade.

Parties that were not at the negotiation table but had power over the creation of this protocol was the industry that would be impacted by a verification measure: biotechnology and pharmaceutical companies (Zabriske, 1998). Any laboratory that has a dual-use capacity (tools and instruments needed to make vaccines and perform medical research but also used to make biological weapons) would be subject to regulatory measures if on-site verification was put into place (Walker & Phillips, 1998). Companies like Merck, and Johnson & Johnson were not pleased with the idea of being further nationally regulated, and having the potential for expensive proprietary information be stolen. The pharma industry spoke expressively about the concerns of regulating laboratories. In turn, the industry “maintain[ed] an active dialog with...negotiators to keep issues of [the] greatest importance to [the] industry... [in] the deliberations” (Zabriskie, 1998, p. 314). More importantly, in the spring of 1998, United States officials met with biotechnology and pharmaceutical leaders to discuss the verification issues that were currently being negotiated within the Ad Hoc group (Fox, 1998). The leverage the private industry had over negotiating on-site verification protocols proved to be harmful for the Ad Hoc group. One of the United States' reasons for ending negotiations was that this protocol would leave private industries at risk for trade secrets to be stolen (Fox,

1998; Sullivan & Gorka, 2000). Both the United Kingdom and Canada’s private industries had issues with on-site verification measures. The staggering difference between these two nations and the United States is the fact that in 1994, in an attempt to build confidence between the United States and Russia, Russian scientists had “several impromptu ‘voluntary visits’ ...to US pharmaceutical industry facilities [which] proved so intrusive and defamatory for Pfizer (New York) ...” and led to this company being “...falsely accused of continuing biological warfare operations ...” [table 13] (Fox, 1998, p. 506).

Table 13  
*Why US Private Industry Interests Push Against Onsite Verification*

Interests	Issues	Support
Costs	Regulation of Labs:	Multi-billion-dollar industry that spends millions of dollars every year on lobbyists
Trade Secrets	<ul style="list-style-type: none"> <li>Increases Overall Costs</li> <li>Gives potential for trade secrets to be stolen</li> </ul>	<ul style="list-style-type: none"> <li>2009: Pfizer spends \$6.1 million on lobbying, PhRMA \$7 million</li> </ul>
Public Image	Fear of intrusion and defamatory reports:	Support from Government:
Regulations	<ul style="list-style-type: none"> <li>1994: Russian scientist visits falsely accused Pfizer (New York) of continuing BW operations</li> </ul>	<ul style="list-style-type: none"> <li>multi-billion dollar contracts for biodefense</li> </ul>

(Fox, 1998; cbsnews.com)

As it stands today, the BWC continues to meet every five years for a review conference (unog.ch/bwc). Yet, the BWC has not entered back into negotiations to discuss a potential for legally/non-legally binding mandates to strengthen this treaty. The reason behind this stalemate is because of the conflict of on-site verification (Littlewood, 2012).

Throughout the Ad Hoc Group negotiations, the United States refused to use the word “verification” when negotiating a possibility for on-site inspections. This word was

completely polarizing to the United States. In the words of Ambassador Mahley (retired), who headed the negotiations for the United States between 1993 to 2002, "...verification has a very specific meaning to the United States. It requires us to be able to determine, with a high degree of confidence, the existence of an illicit program prior to the time that it becomes a military threat. We have never thought that the BWC was capable of verification of that standard, so throughout the negotiations we never once referred to it as a verification protocol" (D. Mahley, Sept. 7, 2001). In this interview, Mahley continues to state that the sole reason the United States participated in these negotiations was to boost confidence in the BWC, not to determine legally binding on-site inspection measures. Russia, China, and Iran were also opposed to the verification protocols that were put in the final draft of the Ad Hoc Group negotiations (SJIR, 2001). Yet, verification continues to be an issue for the United States long after the ending negotiations in 2001.

As previously discussed, political and structural (military, resources) powers both affect the positions and values that each state brings to the table during negotiations. Even more for the BWC, though, industry has had a dramatic impact on these multilateral regulations. A specific example of this collusion that impacted the BWC is the case of the biotech and pharmaceutical companies (Zabriskie, 1998). Scientific-military literature explains that biotech and pharmaceutical industries have become increasingly militarized due to biodefense research (Winzoski, 2007). Project BioShield is just one biodefense venture that has \$5.6 billion in contracts for these industries (fas.org). Interest-based theories explain that these industries acted in the most predictable way possible when they were faced with the BWC negotiations of the 1990's: they used power to avoid the

financial strain from the potential increase in regulation/law on laboratories, which in turn maximized profit (Winzoski, 2007). More importantly, the 1994 inspections of Pfizer's labs left this industry in fear of defamation and embarrassment not just for them, but for the United States. Historically, this paper has discussed the issues that arise when nations are publically accused of biological warfare, (in the example of the United States and Russia during World War II).

Interest-based theories not only explain why the biotech and pharmaceutical industries pushed the United States to withdraw from verification protocols, but it also explains why, to this day, the BWC still does not have legally binding mandates. Political powers have shifted in State Party nations over this time alongside international concerns. One thing that prevails, though, is the influence of industry on treaty creation. Like George W. Bush, the Obama administration still refuses to continue negotiations in lieu of a legally binding on-site verification measures. During every conference since the conclusion of negotiations in 2001, state parties have tried to persuade the United States to renegotiate on-site inspections, which is always rejected. This attempt at persuasion might be noble, but in reality it only continues to stall future mandates that could potentially strengthen the BWC. Moreover, this tactic focuses all efforts into a verification protocol, which leaves no room for idea creation. The negotiation position of the United States is to avoid the conflict of on-site inspections but not leave the negotiation table. In turn, this tactic stalls negotiations on other strengthening measures indefinitely.

Interest-based theories predict what the outcome of the next conference will be for the BWC in 2016, but it does not give the international community a solution when faced

with a toothless treaty. In my opinion, the best tactic for the BWC is to take verification off the table, so that the United States will be willing to negotiate other mandates for this treaty.

With verification off the table for the BWC, there is potential to strengthen this treaty and open up dialogue for other kinds of mandates. I suggest the BWC focus on two facets for future growth: first, resolving issues the BWC faced during the Ad Hoc negotiations and second, focusing on current literature that proposes alternatives to on-site verification.

By resolving some of the issues that burdened the State-Parties during the Ad Hoc Group negotiations, the BWC can prevent the same issues from occurring in future negotiations. As previously discussed, support staff is necessary for a multilateral negotiation of this treaty's size (Boyer, 2012). Responding to this criticism, the BWC did create the Implementation Support Unit in 2006 ([unog.ch/bwc](http://unog.ch/bwc)). Funded by the BWC, this support staff is small, consisting of three full-time support staff. Though it may help, I do not believe that the size of a staff unit completely determines the overall of support a multilateral treaty has. In contrast to the size of the support staff, the skills the staff possess in areas, including facilitation, are of paramount importance (Albin, 2012). Therefore, I suggest that the BWC continue to assess if the current ISU is accomplishing this task.

A major issue the Ad Hoc Group faced was the breakdown of trust between the state parties. One way of diminishing distrust in the international community is to create norms of behavior (Croft, 1996). Historically, these norms are agreed upon during multilateral disarmament treaties, like the BWC, and pertain to definitions of uncivilized

means of warfare, conduct, etc. The issue with international norms is that they are frequently broken and lead to further distrust between nations (Croft, 1996). Richard Shell points out three factors when it comes to reciprocity in negotiations: trustworthiness with yourself, fairness to people who are fair to you, and unfair treatment left unsaid leads to exploitation (Shell, 2006, p. 66). These three factors are important in multilateral negotiations because reciprocity can establish, and repair trust between nations. In the future, negotiations for the BWC should concentrate on establishing a norm of reciprocity.

The issue of trust can also be addressed in the implementation of future mandates for the BWC, which should include increased confidence-building measures. Confidence-building measures have been in place for the BWC since 1986. These measures “are the only formal politically binding mechanism for increasing transparency and demonstrating compliance with the treaty” (Koblentz & Chevrier, 2011, p. 233). Though these measures need to be strengthened, they are an established norm for this treaty, and therefore, can act as a structure for future mandates. Since the CBM’s were created in 1986, the use of biological and toxin weapons has shifted from state-parties to non-state parties and “warfare, itself, may be outmoded since it is an exercise in which the benefit to cost ratio is unsatisfactory” (Hilleman, 2002, p. 3064; Koblentz & Chevrier, 2011). Furthermore, with the advancement of science and technology, the international community is more aware of the wide reaching impacts of biological weapon use (not unlike the idea of mutual assured destruction). In conclusion, the BWC would be strengthened by focusing efforts on increasing the security of exports, focusing outwardly on non-state party

violence, and ensuring the security of laboratories with dual-use instruments and pathogens non-state parties might attempt to steal.

One issue that should be addressed is the implementation of new mandates. State Parties will need to find the means to fund new mandates. This financial stress will not be equitable between State Parties because of the disparity of wealth across the globe. This factor may create further power imbalances between the State Parties. Yet, wealth is not the only important factor in a multilateral treaty though. A willingness to participate in information gathering and dialogue is critical to strengthening multilateral negotiations.

Improvising the CBMs to include a broader approach to security is just one way the BWC can be strengthened. Some other mandates include the increased support of health organizations (like the WHO) to support nations that lack stockpiles of vaccines and the fiscal means to create national containment and relief measures for biological attacks (Hilleman, 2002). The purpose of this paper, though, is to not discuss every mandate that could strengthen the BWC but to argue the fact that taking the debated verification protocol off the table for now, could open up the door for these mandates to exist.

## CHAPTER V

### CONCLUSION

The complexity of multilateral disarmament treaties is evident in the case of the BWC. In the past, the BWC has been criticized for being a weak document pertaining to the efforts to stop the proliferation, stockpiling, and use of biological and toxin weapons. This weakness is further supported by the fact that the State Parties of this treaty cannot agree to even negotiate future mandates to strengthen the BWC. By analyzing the parties

involved in the negotiations of the 1990's, including the interests of the pharmaceutical and biotechnology industry, it is easier to understand why negotiations failed by 2001 and why future mandates have been stalled.

In lieu of paper tigers, tabling a verification protocol will enable the State Parties of this treaty to finally get back to the negotiation table. In turn, this act of good faith will give the international community a sense of security as mandates for protection against biological and toxin warfare are implemented.

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