Evolution of CWC Negotiations

The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction was opened for signature in Paris on 13 January 1993. The Chemical Weapons Convention (CWC) is the product of two primary influences. On the one hand, the CWC stands squarely within a normative tradition: it is the latest expression of what is evidently an ancient sentiment widespread throughout many cultures, that fighting with poison is somehow reprehensible, immoral, wrong -- that do resort to chemical warfare is to violate a taboo of a peculiarly deep kind, a taboo that can nevertheless condone other categories of weapons, even ones capable of inflicting the most hideous injuries. This social norm had previously found its fullest expression in the 1925 Geneva Protocol, the Treaty to which some 150 States are now parties, which prohibits chemical and bacteriological methods of warfare. On the other hand, the CWC is a security agreement, a form of collective protection against a particular type of threat. The CWC reflects clearly the ways states have assessed the threat -- how they have judged the military and political usefulness of toxic weapons both to themselves and to potential adversaries.

The Chemical Weapons Convention (CWC) - which entered into force on 29 April 1997, shortly after ratification by the US Senate -- is a global treaty that bans an entire class of weapons of mass destruction. Under the CWC, each State Party undertakes never, under any circumstances, to: develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to...
anyone, use chemical weapons; engage in any military preparation to use chemical weapons; and assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under the Convention. In addition, each State Party undertakes to: destroy the chemical weapons it owns or possesses or that are located in any place under its jurisdiction or control; destroy all chemical weapons it abandoned on the territory of another State Party; and destroy any chemical weapons production facilities it owns or possesses or that are located in any place under its jurisdiction or control. 3

The CWC helps to combat two of the gravest security challenges of the post-Cold War era -- the spread of weapons of mass destruction and terrorism. A short journey to the treaty which reveals that, it is distinguishable, unique and unparalleled. Being capable to combat security challenges the Treaty goes further than any other arms control agreement to date in applying pressure to those outside. 4 Nations who refuse to join the Convention will find themselves unable to trade in many chemicals that can be used to make poison gas. By restricting the flow of chemicals that can be used to make poison gas, the CWC makes it more difficult and more costly for terrorists to acquire or use chemical weapons.

The ban of chemical weapons assumes significance. Toxic substances have been employed as a method of warfare for ages although their use has continuously been condemned. First efforts to formally ban these weapons are reflected in the Brussels Declaration of 1874 and the Hague Convention of 1899 and 1907. 5 Those international agreements notwithstanding, chemical warfare on a large scale occurred during the First World War (1914-18). It resulted in approximately 1.3 million casualties, 100,000 of them fatal. Increasing public awareness of the horrors of chemical warfare stimulated further efforts aimed at a ban on Chemical Weapons (CW). The Treaty of Versailles prohibited Germany, the State which had used chemical weapons first in World War I,  

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4 Ibid., p.31.

5 The Brussels Declaration prohibited the use of poisons and poisoned bullets in war. The Hague Conventions did the same and a separate declaration (IV.2 of 29 July 1899) of the Hague Conference banned the use of projectiles the sole object of which was the diffusion of asphyxiating or deleterious gases.
from manufacturing or importing poisonous gases.\textsuperscript{6} Other peace treaties of 1919-20 contained similar provisions.\textsuperscript{7} The Treaty of Washington which was to limit the use of submarines, but never entered into force, included limitations on the use of noxious gases.\textsuperscript{8} A clause similar to the one used for the Treaty of Washington was included in the Convention limiting arms in Central America.\textsuperscript{9} Efforts to prohibit chemical warfare were intensified with the creation of the League of Nations. A number of committees were established to consider various aspects of a Chemical Weapons ban, including the possibility of prohibiting laboratory experiments in this field and requiring States to make scientific discoveries public. It was proposed to undertake a study on the effects of chemical and bacteriological warfare to educate and raise public attention to this issue.\textsuperscript{10}

\textit{Geneva Protocol of 1925}

During World War I, the extensive use of poisonous gas resulted in many casualties. This led to the signing in Geneva, on 17 June 1925, of the Protocol\textsuperscript{*} for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare.\textsuperscript{11} It was convened within the framework of the League of Nations. In May 1925, a Conference on methods to control the international arms trade was convened in Geneva. At this conference, the United States initially proposed a prohibition of the export of chemical weapons. Many States objected to such

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\item[8] See League of Nations Treaty Series (L.N.T.S.) JX 170 L4 which covers the period 1920-1946. Treaty of Washington, 6 February 1922, in particular Article V. Britain, France, Italy, Japan and the United States were involved in the negotiations. The treaty stated that the use of gas in war was prohibited under international law. It did not enter into force because France did not ratify for reasons not related to the provisions on chemical weapons (the agreement covered other issues as well) and clauses relating to submarine warfare.

\item[9] Convention for the Limitation of Armaments of Central American States, 7 February 1923, Article V.


\item[*] According to Black's Law Dictionary, a Protocol is "a summary of a document or treaty or a treaty amending the supplementing another treaty", p.1240.


\end{itemize}
a ban because it was deemed discriminatory, favouring the States which already possessed chemical weapons or had the means and knowhow to produce them. It was also said that export controls in this field were key areas which involved implementation issues. And finally, it was argued that such an obligation would not necessarily prevent the use of Chemical Weapons in future wars. On the other hand, a technical committee of the Conference reached the conclusion that a prohibition on the production of Chemical Weapons, which was put forward as an alternative, was not accepted by many countries. The United States therefrom proposed to conclude an agreement banning the use of chemical weapons in war. As a result of a Polish initiative, biological means of warfare were also added. The 1925 Geneva Protocol was, by and large, modelled after Article 5 of the Washington Treaty of 1922. The Geneva Protocol - originally a protocol to the 1925 Convention for the Supervision of the International Trade in Arms and Ammunition and in Implements of War. It entered into force in 1928. The Geneva Protocol is one of the major historical landmarks and benchmark for analysis in the field of disarmament. In the part dealing with gases and all analogous liquids, materials or devices, the Protocol only reaffirmed the ban which was already in existence and had been declared in several previously signed international documents. The majority of States, 121 as of end July 1989, have become parties to the Geneva Protocol.

The United Nations General Assembly has, repeatedly called upon all States, including States not parties to the Protocol, to abide strictly by its principles and objectives. This has led the majority of States to assume that the obligations expressed in the Geneva Protocol have become part of customary international law which means that parties as well as non-parties are bound by its provisions.

In addition to the limited scope of the Protocol, one of its weak points is that some 40 States have expressed reservations when ratifying or acceding to it. These reservations permit the States concerned to use chemical weapons to retaliate (proportionally) in-kind if they were attacked by such means. This has resulted in a situation where most States

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11 Ibid., p.12.
12 Information received from the depository of the Protocol (France). For an exhaustive and complete list of the Parties. See, for example, the UN Disarmament Yearbook, 1989-90.
consider the Geneva Protocol a "non-first use" regime. Another reservation which has been expressed by some States, confines the application of the agreement to other parties. This would allow the use of Chemical Weapons against non-parties. Although this second type of reservation has not been withdrawn by the countries concerned, there is a clear tendency to consider the Protocol applicable to non-parties as well, particularly since the agreement is viewed by most States as part of customary international law. Occasionally, it has been argued that the Protocol only applies to international wars (the Protocol bans the use of Chemical Weapons in war), and that the internal use of Chemical Weapons is not prohibited. The predominant opinion of States and legal experts, however, does not support this view. Another question which relates to the scope of the Protocol, the issue of whether irritant agents and herbicides are covered by it. For many years, the interpretation of the scope of obligations under the Geneva Protocol was a matter of dispute. In 1969, a majority of UN members adopted Resolution 2603 A (XXIV) expressing the view that the Protocol embodied the generally recognized rules of international law prohibiting the use in international armed conflicts of all biological and chemical methods of warfare, regardless of any technical developments. In particular, the resolution declared as contrary to the rules of international law the use in international armed conflicts of:

\[ \begin{align*} 
\text{(a)} & \quad \text{any chemical agents of warfare - chemical substances, whether gaseous, liquid or solid -- which might be employed because of their toxic effects on man, animals or plants; and} \\
\text{(b)} & \quad \text{any biological agents of warfare, living organisms, whatever their nature, or infective material derived from them -- which are intended to cause disease or death in man, animals or plants, and which depend for their effects on their ability to multiply in the attacked person, animal or plant.} 
\end{align*} \]

The 1925 Geneva Protocol is now understood to cover not only bacteria but also other micro-organisms, such as viruses or rickettsiae (unknown at the time the Protocol was signed) - hence the use of the term 'biological'.

As a consequence of the obvious limits of the Geneva Protocol, efforts for a total ban on chemical weapons continued within the framework of the League of Nations. At the League's Disarmament Conference in 1932-33, several proposals for chemical and biological disarmament were put forward. Many of them contained provisions on the

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\[ \text{See, Jozef Goldblat, } \textit{Arms Control - A Guide to Negotiations and Agreements} \text{ (London: Sage Publications, 1994), p.91.} \]
prevention of development and production of chemical and biological weapons in peacetime, and the destruction of existing stockpiles. A Special Committee of the Conference was established to deal with these questions. It considered a broad variety of issues, including the definition of chemical and biological weapons, the monitoring of compliance with a ban, and sanctions to be applied in case of violations. A draft disarmament convention submitted by Britain in March 1933 reflected a number of these considerations. It provided for the prohibition of use of chemical and biological weapons in war, also with regard to non-parties to the treaty. It permitted the use of Chemical Weapons for retaliatory purposes, but unconditionally banned the use of biological weapons. It also stated that chemical and biological weapons must not be developed at any time.\textsuperscript{16} The definition of Chemical Weapons used in the British draft was comprehensive, including tear gas and incendiary devices. Having reached no concrete result, the Disarmament Conference in January 1936, failed to reconvene due to rising tensions in Europe and the outbreak of the Second World War in 1939. It resulted, however, in a thorough consideration of many important aspects related to chemical and biological disarmament, and some questions discussed are still relevant in today's negotiations on the projected Chemical Weapons Convention (CWC).\textsuperscript{17}

\textbf{Chemical Weapons: World War Scenario}

During the inter-war period and the Second World War, two major violations of the Geneva Protocol occurred. Italy, a party to the Geneva Protocol since 1928, used chemical weapons from 1935 to 1936 in its war against Abyssinia. It first denied the allegations but then justified the use of chemical weapons by saying that it was permitted as a reprisal against another illegal act of war, an argument which was questionable from a legal point of view. Mainly tear and mustard gas were employed (dropped from airplanes) to protect the flanks of advancing columns, to disrupt the enemy's communication centres, and to demoralize its troops. Opinion is divided over the military effectiveness of these actions.\textsuperscript{18} However, some sources reported up to 15,000 casualties resulting from the use of chemical weapons. Other violations of the Geneva Protocol probably took place from 1937 to 1945. Japan reportedly used

\begin{footnotesize}
\begin{enumerate}
\item Thomas Bernauer, n.10, p.13.
\item A detailed description of the proposals can be found in Stockholm International Peace Research Institute (SIPRI), \textit{Problems of Chemical and Biological Warfare}, vol.IV, Stockholm and New York 1971.
\item Thomas Bernauer, n.10, p.14.
\end{enumerate}
\end{footnotesize}
Chemical Weapons in its war against China. A wide range of chemicals, including tear gas, phosgene, hydrogen cyanide, mustard gas and other agents, were used against troops as well as the civilian population, resulting in several thousand casualties. When the Second World War broke out, only modest CW stockpiles existed. These stocks were gradually increased during the war, but they were not used on a significant scale. This is often attributed to the fact that most of the big powers had chemical weapons in their arsenals and, as a result, there was a situation of mutual deterrence in-kind. The second factor often mentioned is that there were military concerns over the value of chemical weapons. Indeed, the military value of chemical weapons remains, nowadays, a subject of controversy and the opinion of the military is divided. The debate over whether chemical weapons are the "poor man's nuclear bomb" is an example. Another factor said to have prevented recourse to chemical warfare during World War II was the impact of the Geneva Protocol, the international legal norm which existed against the use of Chemical Weapons.

During and after World War II, the major powers accumulated large arsenals of chemical weapons and development towards ever more poisonous chemical warfare agents continued unabated. Some countries, however, disposed of their stockpiles after the war. Chemical weapons such as "nerve agents" interfere with, or inhibit, the transmission of nerve impulses by disrupting enzyme reactions in the nervous system. "Nerve agents" were discovered during World War II, and the V-agents, another type of nerve agent, during the mid-1950s. Nerve agents are often referred to as "second generation" chemical weapons. Their lethality is many times higher than that of agents used during the First World War. The manufacturing of incapacitating agents such as "BZ" was standardized by the early 1960s. Incapacitating agents are chemicals which cause temporary disease or induce temporary mental or physical

19 Concerns at the top military level in Germany that the use of Chemical Weapons might inhibit the rapid movement of troops is an example.

20 The United Kingdom has destroyed its Chemical Weapons stockpile by 1956. Also Canada reported that it had destroyed its Chemical Weapons (CCD/434, CD/173). Many experts believe that France has retained at least parts of its stockpile although the situation in this case is not entirely clear.

21 Their discovery originates in German organo-phosphate pesticide research during the Second World War. Nerve agents include, inter alia, Tabun, Sarin and Soman. Another nerve agent, VX, was discovered in the United Kingdom after the War.

disability, the duration of which extends far past the period of exposure. They are designed to reduce the combat effectiveness of enemy forces. Renewed interest in chemical weapons on the part of the military was reflected in this situation and was also responsible for the development of new means of deployment of chemical warfare agents. The use of chemical weapons during the First World War, proved inconclusive. On the one hand, chemical weapons had certainly not been decisive. They had not helped the Germans avoid defeat, nor had they for that matter helped the Allies achieve victory. Moreover, their use had proven inconvenient due to logistical and tactical complications, and unreliable due to their uncertain effects. On the other hand, by the end of the conflict, chemical weapons had established themselves as an inextricable part of warfare. Their usefulness in specific tactical situations such as attacking trenches and artillery emplacements had been demonstrated, and the belief that they would be used in future conflict was virtually uncontested.

After the war, chemical weapons continued to attract military attention. Research programmes focussed on the development of countermeasures and the synthesis of new, more potent substances, were taken up with various degrees of enthusiasm by all the major countries including France, Japan, Germany, the Soviet Union, the United Kingdom, and the United States. In 1936, a German chemist working on the development of new pesticides discovered an extremely toxic substance that attacked the nervous system which he called tabum (GA). Two years later, he discovered an even more toxin substance which he named sarin (GB). A new class of chemical warfare agents was thus borne. One of the main lessons of chemical warfare to emerge out of the First World War, was that gas could have a devastating effect when used against an unprotected target. The Italians sought to capitalize on this in their war with Abyssinia in the mid-1930s, while the Japanese made use of chemical weapons in their invasion of China from 1937 onwards. The Spanish and the French were accused of using chemical weapons in North Africa in the 1920s, while the British used them during their

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* For example, multiple rocket launchers, clustered bomblets, and surface-to-surface missiles at a late stage.


24 Ibid.
intervention in the Russian Civil War and possibly in the Middle East and India. Although considered on a number of occasions, with the exception of Japan's limited employment in China, chemical weapons were not used during the Second World War. The British made plans to integrate gas into their defence of the British Isles in the event of a German invasion, however, such an invasion never materialized. Towards the end of the war, the Germans briefly contemplated the use of gas to halt the advance of the Allies, but were deterred by fear of retaliation in kind. In fact, throughout the war, none of the belligerent actually believed themselves capable of waging chemical warfare on an appreciable scale for a protracted period of time.

After Second World War work on chemical weapons concentrated on the study of the new toxic substances captured from the Germans. Sarin attracted the most attention. In the United Kingdom, small-scale production facilities were set up and the substance was scrutinized mostly for defensive purposes. In the United States, fullscale production began in the early 1950s and lasted until 1956. In addition, a multiple delivery systems were developed. The Soviets, who at the end of the war had capture an intact German sarin plant, removed it to the Soviet Union and resumed production. They also began manufacturing another nerve substance captured from the Germans called Soman (GD). In the late 1950s British scientists discovered a new group of nerve compounds known as V-agents. These were more stable and significantly more toxin than Sarin, and proved to be very effective percutaneously. In 1958 the Americans selected one of these substances, VX, for manufacture as a chemical weapon. Full-scale production of VX began in 1961 and continued until 1968. The Soviets developed a V-gas of their own with a structure similar to VX. In the 1960s binary weapons emerged. These synthesize two separately-stored non-toxic substances into a highly toxic one, while the munition is being delivered to target. All the above-mentioned, per se, explains the international security scenario, individual countries' security concerns and the ban of Chemical Weapons.

25 Ibid.
26 Ibid., pp.58-59.
27 Ibid., p.59.
28 Ibid.
Pertaining to diplomacy aspects of chemical weapons and world at large scenario, the United States had been in the forefront of the states which gave the Geneva Protocol a narrow interpretation and which contended that the use of irritants (such as tear gas) and anti-plant chemicals were not covered by the Protocol. In 1975, after the Second Indo-China War in which such substances were used on a large scale, the United States decided to renounce, as a matter of national policy, the first use of herbicides in war, except for control of vegetation within US bases and installations or around their immediate defensive parameters. It also decided to renounce the first use riot control agents in war except in defensive military methods of saving lives, such as: (a) to control rioting prisoners of war in areas under US military control; (b) to reduce or avoid civilian casualties when civilians are used to mask or screen attacks, (c) to recover downed aircrews and passengers, as well as escaping prisoners, in rescue missions in remote isolated areas; or (d) to protect convoys outside the combat zone from civilian disturbances, terrorists and paramilitary organizations. This interpretation was more liberal than the one previously advocated, but it still fell short of the understanding of the scope of the Geneva Protocol as formulated in the 1969 UN resolution, 2603 A (XXIV).

The Geneva Protocol had certain loopholes and weaknesses which restricted non-use obligation to the conditions of "war". Therefore, it is, strictly speaking, not applicable to internal conflicts. It might also be argued that the Protocol did not even cover those international conflicts in which the belligerent do not consider themselves to be formally at war. The Protocol applied only to relations "as between" the parties and does not ban the threat of use of the prohibited weapons. There is no mechanism to verify compliance with the Protocol prohibitions. Since the 1980s, however, this gap has been filled by the UN resolutions empowering the UN Secretary-General to investigate reports on possible violations of the Geneva Protocol. Pertaining to certain reservations of this Protocol -- in joining the Geneva Protocol, over 40 states entered a reservation that they would not be bound by its prohibitions towards any state whose armed forces did not give much attention to it. For these states, then, the Protocol is

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29 Jozef Goldblat, n.15, p.91.
30 Ibid., pp.91-92.
31 Ibid., p.92.
only a No first-use treaty. Proposals have frequently been put forward that those who have made the reservation should withdraw it and give up the right of 'second use'. A certain number of states have done so. Others have insisted that, as long as the weapons covered by the Protocol were retained in the arsenals of states, an unconditional non-use obligation could not be credible. During the 1991 Gulf War, the French President stated that France would not respond with chemical or bacteriological weapons should Iraq employ such weapons against the forces of the anti-Iraqi coalition. The United States, for its part, did not formally rule out such a response. Ultimately, the Geneva Protocol is a document of historic significance. Its importance lies in the fact that an international legal constraint, binding alike the conscience and the practice of nations, was imposed on acts which were generally held in abhorrence and which had been condemned by the opinion of the civilized world. According to a widely shared opinion, the Protocol is part of customary international law, to be complied with by parties and non-parties alike.

Developments in the Chemical Weapons domain went largely unnoticed by the public world-wide due to the rising focus on nuclear weapons. Chemical and biological weapons were classified and are usually referred to as weapons of mass destruction (WMD) by the United Nations Commission for Conventional Armaments in 1948, but the discussions in international forums, including the United Nations, during the 1950s and first half of the 1960s remained inconclusive. Proposals for general and complete disarmament put forward at this time included provisions on chemical weapons, but were never seriously examined. Two major allegations of the use of Chemical Weapons were made during that period. China and a number of Non-Governmental Organizations (NGOs) accused the United States of using chemical weapons in the Korean War from 1951 to 1952. However, no independent confirmation of the allegations was produced. There were many reports that since the Second World War, chemical weapons have been used by Egyptian armed forces during its intervention in the Yemeni Civil War in the 1960s (from 1963 to 1967). No conclusive

32 Ibid., p.92. 
33 The Commission for Conventional Armaments was a subsidiary body of the UN Security Council and functioned from 1947 to 1950. A resolution of the UN General Assembly, adopted on 24 January 1946, demanded the elimination of atomic weapons and of all other major weapons adaptable to mass destruction. 
and independent reports were published. Chemical weapons have also been used by Iraq against Iran and Kurdish civilians during the Iran-Iraq War. Although other allegations of chemical weapons use have been made, none of these have been reliably verified. But the evidence produced by various States and NGOs was considered more substantial than in the Korean case. In October 1954, the Federal Republic of Germany foreswore the right to produce or stockpile on its territory chemical and biological weapons (and nuclear ones as well). This was a prerequisite for joining the Western European Union (WEU), and later NATO. Under this agreement, the Federal Republic of Germany accepted international verification measures including on site inspections, a unique obligation at that time. These controls on West German chemical and biological armament have been effective since 1956 and are performed by the WEU Armaments Control Agency.\(^35\)

It was the use of chemicals on a large scale by the United States in the Second Indochina war which, again brought the question of chemical warfare to the attention of the public and placed it on the international arms control agenda. In the early 1960s, the United States began to use gradually increasing quantities of herbicides and defoliant\(^36\) for war purposes in Indo-China. These chemicals were employed to deprive enemy forces of cover by defoliating the vegetation, and to destroy crops. The use of herbicides was stopped in 1970/71. Considerable quantities of irritant agents, mainly the tear gas "CS", were used during various military operations such as the so-called "tunnel" or "bunker-warfare", or rescue missions. Irritant agents are short-term incapacitants used to cause rapid disablement that lasts little longer than the time of exposure. The United States and Australia argued that the substances employed in Indochina were not chemical weapons and that their use in armed conflict was therefore not prohibited by the Geneva Protocol. The United States did not join the Protocol until 1975. However, these activities were perceived by many States as chemical warfare. A resolution by the UN General Assembly which included herbicides in its definition of Chemical Weapons was passed in 1969 by a significant majority of votes in favour. Another reaction to the use of chemicals in the Indochina war was a United Nations


\(^{36}\) The chemicals used were "Agent Orange", a substance which had several unintended effects because it was contaminated with super toxic impurity (dioxin), and agents "Blue" and "White".

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General Assembly resolution, originally proposed by Hungary. It was adopted in 1966. It called for the strict observance of the Geneva Protocol, and invited all States to ratify or accede to the Protocol.\(^{37}\) This resolution, however, stopped short of condemning the United States.

As a consequence of the renewed attention to the problem of chemical and biological weapons, particularly chemical warfare, the Eighteen-Nation Committee on Disarmament (ENDC) placed the issue on its provisional international disarmament agenda in 1968. This came after the conclusion of the Nuclear Non-Proliferation Treaty (NPT) in the same year. In 1969, for the first time, the "Question of Chemical and Biological Weapons" was put on the agenda of the UN General Assembly (UNGA). Following a request by the UN General Assembly in 1968,\(^ {38}\) the UN Secretary-General appointed a group of experts to study the effects of chemical and biological weapons. The report of the group was published in 1969\(^ {39}\) and was discussed in the ENDC. It was intentionally written in a style understandable to non-experts. It described the basic characteristics of chemical and biological weapons, their effects on military and civilian persons, environmental factors influencing the effect of chemical and biological weapons (CBW), possible long-term effects on human health and ecology, and economic and security implications of the development, acquisition and use of chemical or biological weapons. The conclusions of the report were as follows: Certain CBWs are potentially unconfined in their effects in space and time. CBW could have grave and irreversible effects on the balance of nature. These effects would apply both to the attacker and the attacked. No defence system is completely effective. CBW are no cheap substitute for other weapons, and their elimination would not detract from a country's security. Attached to the report was a recommendation by the UN Secretary-General. The recommendation of the UN Secretary-General urged States which had not done so to adhere to or ratify the Geneva Protocol and it stated that all chemical and biological weapons (including tear gas and herbicides) should be covered by the Geneva Protocol, and a comprehensive ban should be negotiated. Another important document, published in 1970 as a contribution to efforts for chemical disarmament, was the World

\(^{37}\) United Nations General Assembly (UNGA), Resolution No.A/2162 B (XXI).

\(^{38}\) United Nations General Assembly (UNGA), Resolution No.A/2454 A (XXIII), 1968.

Health Organization (WHO) report on health aspects of the use of chemical and biological weapons.\textsuperscript{40} Its emphasis was on public health and the approach was therefore different compared to the report by the UN Secretary-General. It was of a more technical nature and was directed primarily at public health and medical authorities. Still, the conclusions were essentially the same as those of the UN report.

The Geneva Protocol is the benchmark and genesis towards chemical and biological Conventions. In addition to seeking a total ban on chemical and biological weapons, many countries thought that it was necessary to strengthen the Geneva Protocol of 1925. International pressure to ensure universal adherence to the Protocol was growing and a number of General Assembly resolutions were passed. They invited all States which had not done so, to adhere to, ratify, or accede to the Protocol. Similar calls were made by NGOs, for example the International Committee of the Red Cross (ICRC).\textsuperscript{•} These calls were particularly addressed to the United States, the only great power not yet a party to the agreement. China, France (the depository of the Protocol), the Soviet Union, and the United Kingdom had ratified or acceded to the Protocol by 1930. The absence of the United States was thought to be of great significance because it was known to have a large CBW programme and had used chemical weapons on a large scale in the Indo-China war. The United States argued that it respected the principles of the Protocol but resisted formal commitments. However, international as well national public opinion caused a change in this position. On 25 November 1969, the US President issued a statement which contained the following elements:\textsuperscript{41}

(a) It reaffirmed the renunciation by the United States of the first-use of lethal chemical weapons.

(b) It extended this renunciation of first-use to incapacitating chemicals.

(c) It announced that the Geneva Protocol would be submitted to the US Senate for advice and consent to ratification.

\textsuperscript{40} See, World Health Organization (WHO) Publicati<on on Health Aspects (Geneva, WHO, 1970).

\textsuperscript{•} ICRC, an NGO founded in 1864 to provide relief to wounded soldiers and other victims of violence worldwide; an agent of humanitarian diplomacy, the ICRC works with national Red Cross and Red Crescent organizations; the Committee is composed of Swiss nationals who, being citizens of a neutral country, can act as intermediaries.

Later on, it became clear that tear gas and herbicides were not covered by the announcement. The statement of 25 November 1969 also contained a declaration on the unilateral biological disarmament by the United States:

(a) It renounced the use of lethal biological weapons and all the methods of biological warfare.

(b) It confined biological research to defensive purposes such as immunization and safety measures.

(c) It announced that the United States would dispose of existing biological weapons stockpiles.42

On 14 February 1970, the United States additionally renounced the offensive preparation and use of toxins for war purposes. Toxins are substances produced by living organisms, including plants, animals and bacteria. Unlike the organisms which produce them, toxins are not capable of reproduction. The United States stated that military programmes in this field would be confined to research for defensive purposes, and that all US stockpiles of toxin weapons which were not required for defensive research would be destroyed.43 By renouncing the production, stockpiling and any use of biological or toxin weapons, and the first use of lethal and incapacitating CW against any country (not only against parties to the Geneva Protocol), the United States unilaterally accepted more obligations than provided for in the Geneva Protocol. The ratification of the Geneva Protocol by the United States was, however, not achieved until 1975 because the Senate Foreign Relations Committee demanded ratification without reservations. The administration, on the other hand, sought to exclude riot control agents and herbicides. The main argument for not covering these substances under the Protocol was that they were widely used for domestic purposes (e.g., riot control and agriculture). The use of chemicals which existed in large quantities in many countries could not be prohibited effectively. Another reason sometimes given was that the use of irritants could lead to fewer casualties, including on the side of the enemy.

Arguments used by advocates of the prohibition of these substances for war purposes were that: there is no clear demarcation between irritant agents and other chemicals. The military use of tear gas is different from its civil use (riot control). Irritants are often employed to increase the effectiveness of other weapons (e.g., to "smoke out" the

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42 A/C 1/PV 1699.

enemy and then attack him in the open). The use of the chemicals may also lead to an
escalation of chemical warfare in an armed conflict. Herbicides may inflict damage on
people and cause a disruption of the ecological equilibrium (including long-term
consequences). Additionally, the negotiating history was said to support the
comprehensive scope of the Protocol. In 1969, a UN General Assembly
resolution,\textsuperscript{44} already referred to, put forward a formal definition of chemical weapons.
It included irritant agents and herbicides. It was adopted with 80 votes in favour, three
against (Australia, Portugal and the United States) and 36 abstentions (including most
Western States). In 1974, the United States changed its position and US President Ford
issued an executive order, still in force, which stated that herbicides could be used by
US forces in armed conflict to clear vegetation around US bases. Tear gas may be used
to prevent casualties (rescue operations, for example) and riot-control on prisoners of
war camps. The same points were made by the US Senate in 1975 in the context of the
debate on the ratification of the Geneva Protocol. The ratification by the United States,
although with a reservation,\textsuperscript{45} and the (at least partial) resolution of the dispute over
irritants and herbicides strengthened the authority of the Geneva Protocol. However, the
problem of formal reservations to the Protocol and especially the question of how to
deal with allegations of infraction of the agreement remained. Efforts to resolve the
latter started in the early 1980s.

Since the signing of the 1925 Geneva Protocol, the prevailing opinion had been that the
possession of chemical and biological weapons should be prohibited simultaneously. In
1969, the UN Secretary-General issued the Report on \textit{Chemical and Bacteriological
(Biological) Weapons and the Effects of their Possible Use}, which concluded that these
weapons might have irreversible consequences for man and nature. The Report on
\textit{Health Aspects of Chemical and Biological Weapons}, published a year later by the
World Health Organization (WHO), also pointed out that the effects of use of chemical
and biological weapons are subject to a high degree of uncertainty and unpredictability.
Nevertheless, several Western countries proposed a treaty banning only biological

\textsuperscript{44} Official Records of General Assembly Official Records (ORGA), General Assembly Official Records
(GAOR), No. A/2603 A (XXIV), 1969.

\textsuperscript{45} The reservation of the United States reads: "That the said Protocol shall cease to be binding on the
Government of the United States with respect to the use in war of asphyxiating, poisonous or other gases,
and of all analogous liquids, materials, or devices, in regard to an enemy State if such State or any of its
allies fails to respect the prohibitions laid down in the Protocol."
weapons. The main reason for separate treatment of these two categories of weapon, as put forward by the sponsors of the proposal, was that a ban on biological weapons did not require intrusive verification and could therefore be concluded quickly, without serious risks, this was not the case with chemical weapons.⁴⁶ Since the end of 1960s, the question of comprehensive ban on chemical and biological weapons received increasing attention, especially on the part of the non-aligned states -- after a period of hesitation, the Western countries' approach was adopted by the Eighteen-Nation Committee on Disarmament (ENDC) and its successor, the Conference of the Committee on Disarmament, where the negotiations were taking place.

Chemical Weapons Negotiations in Eighteen Nation Committee on Disarmament (ENDC)

The name of the multilateral negotiating body which deals, inter alia, with the question of chemical weapons has changed several times. From 1962 to 1969, it was named the Eighteen Nation Committee on Disarmament (ENDC).⁴ From 1969 to 1979, its name was changed to "Conference of the Committee on Disarmament (CCD)". In 1979, its name was changed to "Committee on Disarmament" (CD) and in 1984 it became "Conference on Disarmament" (CD). This was in accordance with the recommendation of the UN General Assembly.⁴⁷ The Conference on Disarmament (CD) is, in the language the Final Document of the first special session in disarmament (SSODI), "the single multilateral disarmament negotiating forum" of the international community.⁴⁸ It is of limited size and is based on universal representation. After two increases of membership (including China and France), it comprises all nuclear weapons states (5) and other 35 states, chosen on consultation with the President of the United Nations General Assembly (UNGA). The composition of the 35 states is like this: First categorization group of 21-mainly consisting of Argentina, Brazil, India, Indonesia, Iran, Pakistan, Sri Lanka, Sweden and so on. Then, it is Group of Western countries mainly consist of Australia, Canada, Federal Republic of Germany, France, Italy, Japan, Netherlands, UK and the USA. Another categorization is Group of Socialist countries that consist of Bulgaria, Czechoslovakia, German Democratic Republic,

⁴⁶ See, Jozef Goldblat, n.15, p.93.
⁴ The ENDC was convened for the first time on 14 March 1962 at the level of foreign ministers.
⁴⁸ United Nations General Assembly (UNGA) Resolution S-10/2 embodies the Final Document.
Hungary, Poland and USSR. After the disintegration of Soviet Union and unification of Germany changed this composition. At this juncture, one should not fail to understand that China is a member of the CD but does not belong to any of the three political groups. This reservation, perhaps may give a unique nature of China’s negotiating strategy in disarmament negotiations.

Another increase by four States has been considered during recent years and there is agreement that it should be designed so as to maintain the balance among the political groups in the Conference. The candidate of the Western Group is Norway, and that of the Socialist Group is Vietnam. This is significant because of the fact that Norway has taken as lot of peace initiatives at different multilateral and unilateral levels and presenting engaged in Sri Lankan peace efforts. Another significant country Austria has applied for membership. Upon request, the Conference on Disarmament grants observer status to non-members. During the 1989 session, 28 countries attended the plenary meetings of the Conference as observers and the vast majority of them participated in the various working groups and committees of the Conference. Non-governmental organizations (NGOs) or individuals may send communications are retained by the Secretariat and made available to delegations upon request. A list of communications is regularly circulated in the Conference.

The Secretary-General of the Conference on Disarmament is appointed by the Secretary-General of the United Nations and acts as his personal representative. He assists the Conference in the preparation of the provisional agenda, annual reports of the Conference to the General Assembly, and other matters. He may also prepare background papers relevant to the conduct of negotiations. He is supported by the UN Department for Disarmament Affairs which acts as the Secretariat for the Conference, the CD adopts its own rules of procedure and sets up its agenda on an annual

49 Israel’s request to participate in the Ad hoc Committee on Chemical Weapons was vetoed, in 1989, by an Arab country. Iraq’s request to participate was approved in 1989 after Iran, a member of the Conference on Disarmament (CD), discontinued its resistance. Plenary meetings of the Conference on Disarmament, 1989.

50 Conference on: Disarmament (CD), document no./8/Rev.2.

51 It has 10 items on its agenda. They include: Nuclear weapons in all aspects; chemical weapons; other weapons of mass destruction; conventional weapons; reduction of military budgets; reduction of armed forces, disarmament and development, disarmament and international security; collateral measures, confidence-building measures, effective verification methods in relation to appropriate disarmament (continued...)

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basis taking into account the recommendations by the UN General Assembly. Its Chairmanship rotates on a monthly basis among all members of the CD. Decisions must be taken by consensus. The Conference on Disarmament usually meets for around six months per year in the Palais des Nations in Geneva. The first part of its session lasts from the beginning of February until April. The second starts in mid-June and ends on an agreed date (often the end of August). The CD holds plenary meetings twice a week which are open to the public. Several proposals have been made to improve the functioning of the Conference.\textsuperscript{52} It was, for example, proposed a review its agenda, and to consider a reduction in the number of plenary meetings and a better spread of the sessions over the whole year.\textsuperscript{53} No agreement has been reached so far on such proposals.

Presently, the question of chemical weapons is included in the agenda of the Conference on Disarmament as item four. One of the principal issues was the possible separation of chemical and biological weapons with a view to the development of a legal instrument for their prohibition. A number of Western countries, the UK and USA among them, preferred the elaboration of a convention on biological weapons as a first step since an agreement on CW appeared to be more difficult to achieve. From 1968 to 1980, it was discussed in plenary meetings of the Conference in March 1980, the CD decided to establish an "Ad hoc Working Group on Chemical Weapons" for the duration of the 1980 session to intensify the negotiations.\textsuperscript{54} The Group structured its work according to the following issues: "Scope of the Convention", "Verification", and "other matters". It was re-established in 1981, 1982 and 1983 with the same mandate. During the 1983 session, four "contact groups" were set up by the working group to deal with

\textsuperscript{51}(continued)

measures acceptable to all parties concerned; and a comprehensive programme of disarmament leading to general and complete disarmament under effective international control. In 1989 the agenda included the following items: (1) nuclear test ban, (2) cessation of the nuclear arms race and nuclear disarmament, (3) prevention of nuclear war, including all related matters, (4) chemical weapons, (5) prevention of an arms race in outer space, (6) effective international arrangements to assure non-nuclear-weapons States against the use or threat of use of nuclear weapons, (7) new types of weapons of mass destruction and new systems of such weapons; radiological weapons, (8) comprehensive programme of disarmament, (9) consideration and adoption of the annual report and any other report as appropriate to the General Assembly of the United Nations.

\textsuperscript{52} E.G. CD/WP. 286, CD/WP. 341. The UK proposed that the CWC talks be moved to round-the-year meetings (A/44/PV 8, 28 September 1989).

\textsuperscript{53} Conference on Disarmament (CD), document no.CD/956, 1989, p.10.

specific negotiating issues. In February 1983, the US announced at the Conference on Disarmament following requirements for a verifiable prohibition on the production, stockpiling, and transfer of chemical weapons:

- Declaration and systematic international on-site inspections of chemical weapons stocks and production facilities and declaration of plans for destruction of stocks.
- Systematic international on-site inspection of the destruction of both chemical weapons stocks and production facilities.
- Declaration and on-site inspection of the operation of other facilities for legal production of chemicals that pose specific risk of being diverted to chemical weapons production.
- A multilateral mechanism for dealing with compliance issues.

In 1984, the name of the Working Group was changed to "Ad Hoc Committee on Chemical Weapons". Its new mandate was to start the full and complete process of negotiations, to develop and work out the Convention, except for its final drafting, and to take into account all existing proposals and drafts as well as future initiatives to this end. So far, this mandate has not changed although there have been efforts to modify it. Most delegations are in favour of removing the phrase "except for its final drafting". They point to the urgency of concluding a treaty and argue that this phrase indicates a lack of commitment. In addition, the majority of delegations are of the view that the "use of chemical weapons" should be included in the little of the projected Convention as reflected in the negotiating mandate.

The Group of Socialist countries, the Group of 21, and most Western countries have repeatedly advocated a modification of the mandate in this regard but particularly the United States continues to oppose this. No reasons have been publicly stated for this position. As far as the "use of Chemical Weapons" is concerned, one may suspect that the lack of agreement on how to bring the CWC in line with the Geneva Protocol plays a role. The phrase "use of chemical weapons" in the titles of negotiations as referred

56 This relevant part of the mandate reads as follows: "...conduct as a priority task of negotiations on a multilateral convention on the complete and effective prohibition of the development, production and stockpiling of chemical weapons and on their destruction, and to ensure the preparation of the Convention...to continue the full and complete process of negotiations, developing and working out the Convention, except for its final drafting..." (CD/956, p.39).
to in UN General Assembly resolutions\textsuperscript{58} which were adopted without vote, i.e., by consensus, seems somewhat strange in this light. The same phrase was also used in the final act of the Paris Conference of January 1989\textsuperscript{59} which was adopted by consensus. In 1984, the Ad Hoc Committee on Chemical Weapons set up three "working groups" to deal with specific aspects of the projected treaty. These aspects included the scope of the Convention, the elimination of CW stockpiles, and compliance with the treaty. The following year, it established three working groups to consider (a) scope of the treaty, definitions, and the non-production of CW, (b) the elimination of CW stocks and production facilities, and (c) compliance. In 1986, 1987 and 1988 the substantive negotiating issues were assigned to the working groups of the Ad Hoc Committee on the basis of Articles of the joint preliminary draft treaty. The basic structure of the latter had been agreed to in 1984. The negotiating issues were grouped into four "clusters" in 1987, and five "clusters" in 1988. To intensify the negotiations and to deal with all Articles of the preliminary draft Convention at the same time, five working groups were established in 1989. They were set up according to the major outstanding issues which were defined as: (a) verification, (b) legal and political questions, for example the relation of the treaty to the Geneva Protocol, and the final clauses of the Convention, (c) institutional questions, i.e., in particular the international organization to be established under the Convention, (d) technical issues i.e., the definition of relevant chemicals to be covered by the Treaty, and (e) transition,\textsuperscript{60} the term relates to questions arising in the context of the period before the entry into force of the treaty, and to the 10 year period during which all CW stockpiles and CW production facilities would have to be destroyed. The Chair of the Ad Hoc Committee rotates among the Socialist, the Western and the Neutral and Non-Aligned Group.

\textit{United States and Chemical Weapons Negotiations}

The United States had unilaterally and unconditionally foresworn the use of biological and toxin weapons during 60s and 70s and had stated that it would destroy its existing stockpiles. It urged other States to conclude a comprehensive ban on these weapons. This unilateral step had a significant impact on negotiations on chemical and biological

\textsuperscript{58} United Nations General Assembly (UNGA) Resolution No.A/43/74.

\textsuperscript{59} Conference on Disarmament (CD), document no.CD/880, 1989.

\textsuperscript{60} See, Conference on Disarmament (CD), document no.CD/956, 1988.
weapons. Other countries, including the United Kingdom, Canada, Sweden and the Netherlands, declared that they had no chemical or biological weapons. Mexico suggested that, pending a comprehensive treaty on CBW, other States make such declarations as well. These renunciations, would acquire contractual character when all States had agreed. A number of countries maintained, however, that these measures were no substitute for a comprehensive treaty. A working paper on microbiological warfare was tabled by the United Kingdom\textsuperscript{61} and was discussed in the Eighteen Nation Disarmament Committee (ENDC). In 1969, the UK\textsuperscript{62} submitted a draft convention on a ban on the development, production, stockpiling and use of biological weapons.\textsuperscript{63} The Socialist Group and many non-aligned members of the ENDC/CCD, on the other hand, opposed a separate agreement on biological weapons, and the Socialist Group tabled a draft convention banning chemical as well as biological weapons.\textsuperscript{64} However, it was the problem of verification which, according to official statements, had a decisive impact.

The United States and the UK were of the view that the military value of biological weapons are inferior to that of chemical weapons. The unilateral destruction of Biological Weapons (BW) stockpiles by the United States was a clear indicator. The military value of biological weapons was thought to be very limited because their effects appeared to be unpredictable. Therefore, it was argued that Biological Weapons Convention (BWC) would not require very stringent verification measures to assure the security of the parties to the treaty. Clandestine and undetected violations of a BWC were not believed to yield significant military advantages. A Chemical Weapons Convention, on the other hand, was said to depend on a satisfactory solution to the problem of verification. The Socialist countries were, at that time, opposed to intrusive verification techniques, notably international on-site inspections which were demanded by Western States. A BWC could therefore be reached much faster because intrusive

\textsuperscript{61} Official Records of the Disarmament Commission, supp. for 1968/69, doc. DC/231.


verification measures were not deemed necessary. However, many observers pointed to the fact that, according to military opinion, chemical weapons had some value. The military was therefore reluctant to give up these weapons. One must therefore regard the aforementioned arguments concerning verification with some skepticism. Negotiations on whether to conclude two separate treaties continued until March 1971. At that time, the USSR and other Socialist countries changed their position and accepted the BWC as a first step towards the complete prohibition of chemical and biological weapons. The Committee of Conference on Disarmament (CCD) quickly reached consensus on a joint draft treaty banning on development, production, stockpiling and use of biological and toxin weapons. On 16 December 1971, the UN General Assembly commended the draft treaty on biological weapons. The treaty was opened for signature on 10 April 1972 and entered into force on 26 March 1975.

A considerable number of States expressed fears that the conclusion of the BWC would not be followed by a CWC. Therefore, strong commitments relating to further negotiations on a CWC were expressed in the text of the BWC:

(a) Its Preamble states that the BWC is only the first step towards a comprehensive ban on chemical and biological weapons.

(b) Article IX contains a strong commitment to continue negotiations on a CWC.

(c) Article XII includes provisions for review conferences and defines their role as an instrument to monitor compliance, inter alia with the commitments expressed in Article IX.

(d) The BWC enables the parties to press for a CWC through the mechanism for consultations provided for in Article V.

The major negotiations on a comprehensive ban on Chemical Weapons started from draft conventions submitted in the 1970s by the Group of Socialist countries, Japan and the United Kingdom, bilateral negotiations between the United States and the Soviet

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65 Committee of Conference on Disarmament (CCD), documents nos.CCD/PV. 458 (USA), CCD/PV. 466 (USA), CCD/283 (USA), CCD/308 (UK), CCD/283, 293, 311 (USA), 1969.

66 Committee of Conference on Disarmament (CCD), documents nos.CCD/PV. 505 (USSR), CCD/325 (Socialist countries), CCD/327 (Socialist countries), CCD/339 (Hungary, Mongolia, Poland), CCD/353 (Socialist countries).


69 At the end of 1988, there were 110 parties to the BWC. Review Conferences of the BWC were held in 1980 and 1986. At the second Review Conference, some limited CBMs were agreed to.
Union 1976-1980; the special sessions of the UN General Assembly devoted to disarmament during 1978, 1982, and 1988; the question of verification at the beginning of the 1980s; the US draft convention of 1984, the negotiations from 1984 to 1985; the negotiations in 1986 and developments in 1987, 1988 and 1989, to major proposals by the US and the Soviet Union in 1989. All these negotiations have culminated into the 1993 Chemical Weapons Convention. At this juncture, it is worth mentioning the negotiating stance of the USA and erstwhile Soviet Union pertaining to chemical weapons. On 1 June 1990, the United States and the Soviet Union signed an Agreement on Destruction and Non-Production of Chemical Weapons and on Measures to Facilitate the Multilateral Convention on Banning Chemical Weapons. This bilateral accord crowned several years of US-Soviet talks conducted in parallel with multilateral negotiations at the Conference on Disarmament aimed at reaching a comprehensive and worldwide chemical disarmament treaty. The most essential obligations assumed by the United States and the Soviet Union under the Chemical Weapons agreement were: to halt the production of chemical weapons; to reduce chemical-weapon stockpiles to equal, low levels; and to accept measures necessary to verify compliance. The Agreement’s clauses dealing with the projected multilateral chemical weapons convention had the form of proposals to be considered by all the negotiators. The parties undertook to stop the production of chemical weapons upon entry into force of the Agreement. This undertaking was a concession on the part of the United States, which for several years had insisted on the right to continue manufacturing chemical weapons. However, in its endeavours to modernize the chemical-weapon stockpile, the US government encountered apparently insurmountable political and technical obstacles. One of these was the inability to find a US-based company willing to supply a component or a precursor chemical for the nerve agent to be used in artillery shells. The Soviet government, on its part, did not at the time seem interested in renewing its stockpile.

The late beginning of the elimination process -- two and a half years after the signing of the Agreement -- as well as the long duration of this process -- ten years -- were obviously related to the fact that destruction of chemical weapons requires very complicated procedure, with costs estimated at billions of US dollars. Additional

70 Jozef Goldblat, n.15, p.97.
investments would be needed to fulfil the parties' promise to assign the highest priority to ensuring the safety of people and protecting the environment during the destruction of weapons. It might be noted that the US Administration was already committed by a Congressional decision unilaterally to destroy a major part of its stocks by the mid-1990s. The parties undertook to cooperate with each other regarding methods and technologies for the safe and efficient destruction of chemical weapons. The programme of cooperation, to be negotiated separately, was to include matters related to the construction and operation of destruction facilities. The United States and the Soviet Union stated that they would make every effort to have the multilateral convention then under negotiation concluded at the earliest date and that they would accord it precedence over their bilateral Agreement. They also undertook to take practical steps to encourage all states capable of producing chemical weapons to join the Convention. To reach these goals, they agreed on the following measures: Each side would reduce its stockpile to 500 agent tons within eight years after the entry into force of the multilateral convention. The remaining stocks would be eliminated during the subsequent two years only if a decision to this effect had been taken by a special conference of states parties to the multilateral convention. The conference was to be covered at the end of the eighth year of the Convention's operation, and its decision was to be based on assessment of "whether the participation in the multilateral convention is sufficient" for taking the envisaged action. In a joint statement accompanying the Agreement, the United States and the Soviet Union specified that an affirmative decision of the conference would require the consent of a majority of the parties attending it. This majority would have to include states that had submitted, before 31 December 1991, a written declaration to the Conference on Disarmament that they possessed chemical weapons, had signed the convention within 30 days after its opening for signature and had become a party to the Convention not later than one year after its entry into force. The proposed voting mechanism was meant to induce countries to declare the possession of chemical weapons even before the conclusion of the Convention and to sign and ratify the Convention soon after its text had been agreed.

71 Ibid., p.98.
72 Ibid., p.99.
The proposals concerning the projected multilateral Convention proved the most controversial part of the US-Soviet Agreement. As pointed out above, the two signatory powers were still unwilling to commit themselves unconditionally to the destruction of all their chemical weapon arsenals and chemical weapon production facilities. Consequently, those joining the Convention could not be certain that its ultimate goal - the complete destruction of chemical weapon stockpiles and production facilities by all states -- would ever be reached.\(^{73}\) Under such circumstances, many would hesitate to forswear the chemical weapon option, especially since the chemical weapon powers were to be accorded the privilege of veto at the envisaged special conference of the parties. After a joint initiative at the Brezhnev-Nixon summit of 1974, bilateral talks on chemical weapons between the United States and the Soviet Union were held from 1976 to 1980. They were suspended in 1980 as a result of deteriorating East-West relations. Some modest achievements were made in the later 1970s when the two countries expressed a common position on some issues. The results of the bilateral effort were recorded in two joint reports to the Conference of the Committee on Disarmament (CCD), in 1979, and in 1980.\(^{74}\) One of the most important agreements was the common view that the future Convention should be comprehensive in its scope, banning, the development, production and stockpiling of chemical weapons, and providing for their destruction. This seemed to put an end to tendencies to conclude a partial ban on CW as a first step,\(^{75}\) or as proposed in the Japanese draft (It was a framework for an agreement rather than a full fledged draft treaty for chemical weapons in 1974) to conclude a partial ban with certain provision for its expansion into a more comprehensive one.

**China in Chemical Talks**

China has sought to overtly or covertly undercut or defect from those regimes (policy towards international regimes) that threaten its political and strategic interests and

\(^{73}\) Ibid.


\(^{75}\) A partial ban means, for example, only a prohibition of super toxic lethal or other specific chemicals, or only a ban on selected activities such as production of CW.

\(^{76}\) Japan, Conference of Committee on Disarmament (CCD), CCD/420, 30 April 1974.
generally to adhere to those regimes that advance such interests. A well-known example of such Chinese behaviour can be found in the issue -- area of proliferation of weapons of mass destruction. Chinese policy has evolved greatly in this area. From an early posture that condemned western and Soviet-US arms control efforts as a form of "sham disarmament" designed to perpetuate Superpower dominance (thus leading to calls for widespread proliferation as a means of defeating such "Superpower hegemony"), China has now reached the conclusion that "high entropy" proliferation - meaning a highly proliferated world with few "rules of the nuclear road", would be prejudicial to its interests in principles. Thus, over the years, it has progressively joined international regimes such as the Biological Weapons Convention (BWC-1972) in 1985, the Nuclear Non-Proliferation Treaty (NPT-1968), in 1992, the Chemical Weapons Convention (CWC-1993) in 1993, and the Comprehensive Test Ban Treaty (CTBT-1996), in 1996, and has agreed to abide by the guidelines of the Missile Technology Control Regime (MTCR-1987) in 1991, though often with great reluctance and not without several attempts to water down the level of commitments imposed by such regimes. Although Beijing has now accepted its legal obligations under these regimes, its record at compliance, however, has in some instances been less than reassuring. In practice, it has assisted the WMD programs of some countries ally or near its periphery such as Iran and Pakistan. In effect, those countries deemed vital for the success of Chinese regional security policies have at times been partly "exempted" from the universal obligations Beijing has undertaken with respect to proliferation. Some Chinese assistance in this regard has been simply a product of poor domestic control over its military-industrial complex, but it has in other more egregious

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instances been a deliberate consequence of state sanctioned policy. In July 1994, China joined seventeen other countries in the first meeting of the Association of South East Asian Nations (ASEAN) countries on many international and regional issues of common concern and wants to work with them to develop regional dialogues on political, economic and security issues. The same is true with regard to efforts to develop security dialogues in Northeast Asia. All these undertakings may help enhance understanding and mutual trust among the countries in the region, and can certainly contribute to our collective search for ways to preserve regional peace and security. There are indications that China will gradually increase transparency of its defense capabilities. In sum, the Chinese WMD policy have a crucial bearing on India's WMD policy in the coming years, too.

Of the five declared nuclear-weapon states in the world, China is the only one in Asia, and it is keenly aware of its inescapable responsibility toward international arms control and disarmament. China identifies itself with other Asian nations in pursuit of common objectives of peace, stability and development in the region. It shares the major concern of the world over the danger of spread of weapons of mass destruction. Preventing the spread of nuclear, chemical, biological and other types of WMD has long been the goal of China's policy which, together its national defense efforts, serves the fundamental interest of its national security. As non-proliferation has evolved over the years to encompass a wide range of activities, China has become an important players in this field, and today it is widely regarded as an indispensable member in the United Nations disarmament effort to strengthen dialogue and cooperation worldwide for the common objective of peace and security. To fulfil its legitimate self-defence


needs, China develops and possesses nuclear weapons. Contrary to the fallacy of a "China nuclear threat", which is sometimes used by others to justify their own nuclear-weapon programs, China's nuclear arsenal is very small, and its technological sophistication is such that it is no comparison to those held by other nuclear-weapon states. According to one estimate, the nuclear inventories of Russia and the United States are each 20 times as large as China's. And even after START-II is fully implemented, the United States and Russia will each deploy about 10 times more nuclear weapons than China. 84

China is also different from the others in that it adopts a long standing no first use policy. On the very day it became a nuclear-weapon state in 1964, the Chinese Government declared that at no time and under no circumstances would China be the first to use nuclear weapons. It has also undertaken not to use or threaten to use nuclear weapons against non-nuclear-weapon states or nuclear-free zones. In keeping with this policy, China has signed and ratified the relevant additional protocols of the Treaty for the Prohibition of Nuclear Weapons in Latin America and the South Pacific Nuclear-Free-Zone Treaty. It formally acceded to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in March 1992. 85 China takes the most radical approach towards complete prohibition and thorough destruction of all weapons of mass destruction, something that not everyone may be aware of. Chinese Vice-Premier and Foreign Minister Qian Qichen proposed at the 1994 session of the UN General Assembly that a convention be concluded on the complete prohibition of nuclear weapons in the same way as the conventions banning all biological and chemical weapons. 86 We should notice one thing, in most of the WMD negotiations, the considerable amount of overlapping among chemical, biological and nuclear weapons could be seen. Sometimes, it provides a complex scenario in the Weapons of Mass Destruction (WMD) negotiations. Come to the 1994 UN Convention -- under this Convention all nuclear

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weapon states should undertake the obligation to destroy their nuclear weapons under effective international supervision. Hence, China believes that nuclear energy should be harnessed into the service of peace and development for the benefit of mankind.

In the context of a changing and unstable world situation, the Chinese leadership developed the strategic approach of emphasizing relations with China's neighbouring countries in the Asia-Pacific region. In his 1992 National People's Congress (NPC) reports, Prime Minister Li Peng emphasized that this approach is a major focal point of Chinese foreign policy. Past ripples in political leadership (leadership succession crisis) coincided with the Formosa Strait crisis of 1958, the 1969 Sino-Soviet border clash, the 1974 Paracels incident, and the Sino-Vietnamese War of 1979. Analyzing the national security scenario, the rationale behind China's strategy goes like this -- while the probability of an island grab in the South China Sea or a new confrontation with Taiwan is low, Beijing's policy options have increased dramatically in the past few years as its military forces have become slimmer and better trained for rapid-deployment operations. Now, in addition to the traditional diplomatic tools of international bargaining, the People Republic of China (PRC) is finally nearing a credible military posture to back up its foreign policy in the region. The government's perception of threats to China's security, especially identifying the major threat, is another fundamental issue in the leadership's security thinking and planning. For nearly four decades, from the founding of the PRC to the mid-1980s, there was no question as to who constituted China's major threat -- the United States in the 1950s and the USSR from the 1960s to the mid-1980s. Since the mid-1980s, however, this once clear, indisputable issue has become less clear and increasingly debatable, owing to changes in China's strategic outlook, its process of modernization and reform, and changes in Soviet internal and external policies, particularly the progress of Sino-Soviet rapprochement.

Beijing is believed to have an advanced chemical warfare program including research and development, production, and weaponization capabilities. China's chemical industry has the capability to produce many chemicals, some of which have been sought by states

87 See the NPC Reports, 21 March 1992.
trying to develop a chemical warfare capability. Foreign sales of such chemicals have been a source of foreign exchange for China. The Chinese government has imposed restrictions on the sale of some chemical precursors and its enforcement activities generally have yielded mixed results. While China claims it possesses no chemical agent inventory, it is believed to possess a moderate inventory of traditional agents. It has a wide variety of potential delivery systems for chemical agents, including common artillery, multiple rocket launchers, mortars, land mines, aerial bombs, SRBMs, and MRBMs. Chinese military forces most likely have a good understanding of chemical warfare doctrine, and its forces routinely conduct defensive chemical warfare training. Even though China has ratified the Chemical Weapons Convention (CWC), made its declaration, and subjected its declared chemical weapons facilities to inspection, we believe that Beijing has not acknowledged the full extent of its chemical weapons program. 89

China has taken an extremely prudent and sensitive approach to the matter of export controls on chemical, biological and nuclear weapons. Pertaining the matter of nuclear exports, China stands to the purpose of peaceful uses of nuclear energy. All potential recipient countries must comply with three conditions set forth by China: (1) a guaranteed use for peaceful purposes; (2) acceptance of IAEA safeguards; and (3) no transfer to third countries without China's permission under China's export control system, only specially designated Chinese companies are allowed to engage in exports of nuclear equipment and technology for peaceful uses, and export applications are reviewed on a case-by-case basis. Although China is not a member of the Nuclear Suppliers Group® or the Zangger Committee,** its nuclear exports review process

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89 These are the U.S. Department of Defense Estimate of Potential National Threats Involving Chemical Weapons. They have assessed countries such as China, India, Pakistan, Iran, Iraq, North Korea, Russia, Libya, Syria and Sudan. Source: Adapted by Anthony H. Cordesman from Office of the Secretary of Defense, Proliferation and Response (Washington, D.C.: U.S. Department of Defense, January 2001).

Nuclear Suppliers Group (NSG) is also known as the London Club and established in 1975, the NSG coordinates multilateral export controls on nuclear materials. In 1977 it agreed the Guidelines for Nuclear Transfers (London Guidelines, subsequently revised), which contain a 'trigger list' of materials that should trigger IAEA safeguards when exported for peaceful purposes to any non-nuclear weapon state. In 1992 the NSG agreed the guidelines for Transfers of Nuclear-Related Dual -- Use Equipment, Material and Related Technology (Warsaw Guidelines, subsequently revised). See, the list of members in SIPRI Yearbook, 2000.

Zangger Committee has established in 1971, the Nuclear Exporters Committee, called the Zangger Committee after its first Chairman, is a group of nuclear supplier countries that meets informally twice a year to coordinate export controls on nuclear materials.
seeks guidance by referring to the general international norms and practices embraced by such entities. Another control is Missile Technology Control regime. However, China does not export to non-nuclear states any equipment and technologies for reprocessing, heavy water production or enriched uranium. Another aspect of export control relates to chemical and biological weapons, which are also weapons of mass destruction. China opposes any use or proliferation of chemical weapons and signed the Chemical Weapons Convention in 1993. China is well on its way to ratifying the Convention and hopes the major CW countries in the world will do so expeditiously. China does not produce or possess chemical weapons, nor allow exports of chemicals, technologies and equipment formulated its export administration procedures in this area in 1990 on the basis of the chemicals control lists discussed during the negotiations on the Chemical Weapons Convention (CWC), and it has enforced the control very strictly. There have been occasions where China challenged charges made by other countries that it deliberately exported chemical weapon precursors, and it questioned the intelligence on which such charges were based. One recent case was the Yin He incident in July 1993. With regard to biological weapons, China consistently stands for the complete prohibition and thorough destruction of such weapons and upholds the policy of not developing, producing or storing such weapons. In 1984, China acceded to the Biological Weapons Convention (BWC). Since then, China has taken seriously its obligations in all aspects. China, on its part, shares the interest in preserving peace, security and stability in South Asia and supports any voluntary efforts by countries in South Asia toward denuclearization. Moreover, China states that its unconditional commitment not to use or threaten to use nuclear weapons against non-nuclear-weapon

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MTCR is an informal military related export control regime, established in 1987, which produced the guidelines for sensitive Missile-Relevant Transfers. Its goal is to limit the spread of weapons of mass destruction by controlling ballistic missile delivery systems.

\^\text{\textsuperscript{90}}
Wenguang Shao, n.\textsuperscript{47} p.139.

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In July 1993 the United States accused the Chinese cargo ship Yin He of carrying chemical weapon precursors, thiodiglycol and thionyl chloride, bound for Iran. After exhaustive inspections, including those conducted by the representatives of Saudi Arabia as the third party and participation by technical experts dispatched by the U.S. government, it was indisputably established that the ship did not carry the above-mentioned chemicals, to the great embarrassment of the U.S. government.

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There are major problems to overcome in the examination of the data concerning biological weapons proliferation. Much of the U.S. data concerning such proliferation is classified and not open to public or academic scrutiny. Moreover, different sources may not share the same definition of proliferation. Finally, the quality of the information regarding such proliferation may not be reliable. To know about Chinese WMD status, see, U.S. Senate Committee on Governmental Affairs, "Proliferation Threats of the 1990s", Committee Report, 24 February 1993.
states. Also, China has indicated that it would have no difficulty in participating in the proposed conference among China, Russia, the US, India and Pakistan on the nuclear issues of the region as long as the other parties agree to do so. It is in everyone's interest for such a conference to achieve its desired results, and China says it is prepared to make its own contributions to peace, security and stability in this region. While analyzing the WMD and security concerns in Asia, the China factor is so critical because its geographical size and sharing borders with as many as countries. Viewed in global perspective angle, China is an economic giant and potential military colossus bent on modernizing its maritime and air capabilities with potential regional power. Therefore, its rise and growing assertiveness have understandably heightened the concerns of the other great powers -- especially Russia, which shares with China a four-thousand mile indefensible border; Japan in the China Sea; and the United States colossus. We should not belittle China's global clout and security posture in the coming years.

India's security concerns of the WMD proliferation from China to Pakistan flows in the form of China's assistance to Pakistan's nuclear program. It has deep roots, going back at least to the 1980s. Western intelligence experts believe that the Chinese gave the Pakistanis a design for a twenty-five kiloton implosion device. China is believed to have given Pakistan enough weapons-grade uranium to fuel two nuclear weapons. In 1996, it was reported that China has sold 5,000 unsafeguarded ring magnets to Pakistan for suspected use in enriching uranium in gas centrifuges. In May 1996, just two months after China had test-fired missiles in waters near Taiwan and Washington responded by dispatching two aircraft carriers as a sign of its concern, the US State Department announced neither China nor Pakistan would be sanctioned for the ring magnets.

**India's Diplomacy on Chemical Weapons Ban: A Historical Perspective**

India's diplomacy on disarmament has been a continuous and consistent in the United Nations and other international conferences over decades. In 1948, India proposed

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limiting the use of atomic energy to peaceful purposes and elimination of atomic weapons. This was the stand taken by India on the report of the United Nations Atomic Energy Commission. In 1950 India suggested the creation of a United Nations Peace Fund by progressive reduction of armaments and diverting this amount to the said fund. India was the first country to give the idea of linking disarmament with development. In 1954 Jawaharlal Nehru made the historic appeal for a Standstill Agreement to suspend nuclear testing till such time that the use of nuclear bomb was prohibited. Nehru in his speech in Lok Sabha on 2nd April 1954 informed the members about India’s stand on disarmament. He said:

"We have maintained that nuclear (including thermonuclear) chemical and biological (bacteriological) knowledge and power should not be used to forge these weapons of mass destruction. We have advocated the prohibition of such weapons, by common consent and immediately by agreement amongst those concerned which later at present the only effective way to bring about their abandonment".⁹⁵

Nehru pointed out that India made repeated attempts at the United Nations for adoption of this viewpoint.

While India worked for the gradual reduction and eventual elimination of conventional weapons, India expressed its equal concern over the problem of chemical and bacteriological (biological) weapons. India was in favour of complete elimination of this category of weapons. The ban on Chemical Weapons stands squarely within a normative tradition:⁹⁶ As mentioned earlier, it is the latest expression of what is evidently an ancient sentiment widespread throughout many cultures, that fighting with poison is somehow reprehensible, immoral, wrong -- that to resort to chemical warfare is to violate a taboo of a peculiarly deep kind, a taboo that can nevertheless condone other categories of weapon, even ones capable of inflicting the most hideous injuries. This norm had previously found its fullest expression in the 1925 Geneva Protocol.

Vijayalakshmi Pandit, speaking before the United Nations General Assembly on 25

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⁹⁵ Speech by Jawaharlal Nehru in Lok Sabha, 2nd April 1954.


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September 1948, expressed India's concern over the fearful developments in the field of biological and chemical weapons. She said:

"It was obvious that the threat of war could not be banished from the world unless the present race for armaments was abandoned. As had been emphasized by the Secretary-General, almost as important as the elimination of atomic weapons was the outlawing of biological and chemical warfare, which was said to have been perfected to such an extent as to threaten the very existence of mankind. The General Assembly must devote serious attention to these matters."  

Speaking in March 1953, Krishna Menon expressed the view that small powers, instead of supporting either of the two camps, might act as "catalytic agents". He was in favour of exploiting even the modest progress achieved and suggested that the proposals for the numerical limitation of armed forces and those for their reduction by one-third could be combined in one proposal. He stated that India had always favoured the complete prohibition of atomic and all weapons of mass destruction. He desired the prohibition of chemical and bacteriological weapons and their use might leave indelible scars on the world. India viewed the opinion that biological and chemical warfare was fraught with dangerous consequences. Such warfare could threaten the very existence of mankind. There was urgent need to take steps for outlawing it. Speaking in the General Debate on 28 September 1953, Menon pleaded for a declaration by the General Assembly about the non-use of the weapons of mass destruction. Such a declaration, he said, was not without precedents. He referred, in that connection to the conventions relating to chemical (gas) or bacterial warfare. The prohibition of, or rather the agreement not to use, chemical weapons, he stated, went back to the time of the First World War, when a sizeable quantity of gas was used. He added that the Convention which came after the war proved a deterrent to the use of gas. Menon was not simplifying the issue or taking a very elementary view of things. He was well aware that a mere form of words could not and would not solve everything. He, however, believed that a declaration on the non-use of weapons of mass destruction for destructive purposes would "certainly bring an attitude of the non-use of these weapons". What was more, he pointed out, it would make people begin to realize that with the use of such weapons not only the enemy would be destroyed but the whole of humanity would

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7 United Nations General Assembly, 3rd Session, Plenary Meetings, 143rd meeting, 25 September 1948, p.112.

suffer annihilation. Voicing India's concern in the matter, Menon observed that the
use of such terrible weapons would operate not merely against combatants but against
the people as well. There would be no neutrals in this kind of war. There would
be no human beings, no life of any kind. The war would be waged against the whole
of creation. He also drew attention to various kinds of weapons, including napalm
bombs as a result of which "human beings are gradually tortured and burned to death".
He compared such weapons of modern warfare to the medieval methods of torture.
Whatever may be the differences between the two schools of thought on effective ways
of disarmament, Menon asserted: "Let us get an agreement that the banning of these
weapons, the placing of them outside the armoury of modern warfare is
desirable".

India supported the United Nations General Assembly Resolution 715 (VIII), which
called for "the elimination and prohibition of atomic, hydrogen, bacterial, chemical and
all such other weapons, of war and mass destruction". In 1961, at the time of
establishment of the Eighteen Nation Disarmament Committee (ENDC), the United
States and the Soviet Union submitted a "Joint Statement of Agreed Principles for
Disarmament Negotiations". India welcomed the joint statement. The statement included
a programme for general and complete disarmament (GCD). The Soviet Union is
generally given the credit for putting forward (on 18 September 1959) a programme of
general and complete disarmament for the first time in the history of the United
Nations. It was, however, India which, "perhaps for ethical reasons" had earlier pressed
the position that the mere balanced reduction of arms -- "the popularly accepted
connotation of disarmament" -- was no longer sufficient. In his statement before the
Tenth anniversary meeting at San Francisco, Krishna Menon stated that disarmament
was only a step towards a warless world. What was required was the outlawing of war,
where nations would be able to live in a society where war would be no longer be an
instrument of settling disputes. The GCD contained the provisions for the elimination
of all stockpiles of nuclear, chemical, bacteriological and other weapons of mass

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100 Ibid.
destruction, and the cessation of the production of such weapons". India felt that the document, which contained the principles agreed upon between the two powers, was aimed at doing away with weapons of mass destruction after the achievement of disarmament. The emphasis in the document was heavily in favour of the complete elimination of such weapons. Speaking before the ENDC, Krishna Menon said: "The whole concept of that document was to end the weapons of mass destruction". The scientific and technological advance of the past few decades have increased the potential of chemical and bacteriological (biological) weapons to such an extent that one could conceive of the use causing casualties a scale far greater than what was caused during a conventional type of war.

In 1953, an Indian amendment moved to the resolution on disarmament was adopted by the United Nations General Assembly. One of the main items of the Indian resolution as adopted by the General Assembly was "an affirmation by the General Assembly of its earnest desire for the elimination and prohibition of atomic, hydrogen, bacterial, chemical and other weapons of war and mass destruction and for the attainment of these ends through effective means". On 25th July 1956, the Indian permanent representative to the United Nations sent the government's proposal before the Disarmament Commission of the United Nations. The main proposal was for cessation of all explosions of nuclear and other weapons of mass destruction. India along with eleven other nations presented a draft resolution on general and complete disarmament to the United Nations General Assembly on 15th November 1960. This resolution was unanimously adopted. This contained directive principles to achieve the objective. It suggested that the method of war should not be a means for solution of international problem; it called for elimination of all instruments of war. No step should be taken to give military superiority of one over another. This is a good principle which can remove the fear and suspicions of one or the other. The arms race goes on, as the one Superpower is always suspicious that the other has gone ahead. The Indian proposal is to maintain the balance of equality between the two Superpowers. One of the three

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102 See, paragraph 3(B) of the "Joint Statement of Agreed Principles for Disarmament Negotiations", 20 September 1961, the Eighteen Nation Disarmament Committee (ENDC).

103 Eighteen Nation Committee on Disarmament, Document No.ENDC/PV. 55, 13 June 1962, p.10.

important ideas put forward by India during the eighty Session of United Nations General Assembly related to the elimination of weapons of mass destruction. The amendments (A/C.1/L.74) suggested by India to the fourteen-power draft resolution (A/C.1/L.72), sponsored by the Western Powers sought to insert a clause affirming the earnest desire of the General Assembly, "...to eliminate altogether the use and power to use atomic, bacterial, chemical and all such other weapons of war and mass destruction" and to reach agreement, as early as possible on effective measures to achieve that end. Since it did not refer to international control or conventional armaments, the Western countries opposed it. India, therefore, revised the suggestion so as to add to it the phrase "...and on a comprehensive and coordinated plan under international control for the regulation, limitation and reduction of all armed forces and armaments".

Washington, however, still found the Indian phraseology unacceptable. To the US delegate the words used by India seems to isolate "one element of disarmament programme from other equally portions". According to US delegate opinion, the Indian proposal was well taken care of in the following formulation of the revised 14-Power draft resolution:

Recognizes the general wish and affirms earnest desire to eliminate altogether, as a part of comprehensive coordinated plans, under international control, for the regulation, limitation and balance reduction of all armed forces and armaments, the use of, and power to use all major weapons adaptable to mass destruction including atomic, hydrogen, bacterial and chemical weapons through reaching agreement as early as possible on effective measures to achieve this end.

The above formulation did not satisfy India. The use of the words "as a part of" and "balance" signified that it was very much weighed in favour of the Western Powers. India, therefore, insisted on its own phraseology. India further sought to strengthen it by laying emphasis on the "elimination and prohibition" of the weapons of mass destruction. India's earlier objective had been the elimination of "the use and the power to use" those weapons. The change, in fact, corresponded more closely to the position India had taken earlier in 1947-51 period in the matter. It was also more akin to the Soviet stand. The Indian formulation, as contained in the fourth revision of amendments, was accepted and embodied in the resolution finally adopted by the United Nations General Assembly. It became operative paragraph one of that resolution.

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Krishna Menon explained India's attitude on the question of the elimination and prohibition of the weapons of mass destruction. He stated that his delegation's position, in that regard, was that there should be some kind of affirmation by the United Nations General Assembly expressing the sentiments of mankind that the weapons of mass destruction, as a class, would not be used. The Indian delegation did not desire to move resolutions regarding the total, unconditional or unilateral prohibition of any armaments, but sought to create a climate for disarmament. In this regard, the Indian text called only for the affirmation of the desire in such a manner that it would be clear that the General Assembly was thinking in terms of the elimination of the weapons of mass destruction instead of their limited use.

The First Special Session of the UN General Assembly devoted to Disarmament (SSOD-I) which took place in 1978 started in its final document that a treaty on chemical weapons was one of the most urgent tasks for multilateral disarmament negotiations. SSOD II and SSOD III which were held in 1982 and 1988 respectively, were unable to reach consensus on any specific course of action as far as chemical weapons are concerned. However, SSOD III provided a platform for statements on national CW policies, and some proposals for strengthening the Geneva Protocol of 1925 were made. In April 1984, the United States tabled a draft convention for a comprehensive ban on chemical weapons. One of its main features was the approach to verification which was called "open invitation". This term referred to the possibility, provided for in Article X of the draft, to request on-site inspections in government facilities of any party. The two Super Powers expressed the belief that the parties to a multilateral convention should assume the obligation never to develop, produce, otherwise acquire, stockpile or retain super-toxic lethal, other lethal or other harmful chemicals, or precursors of such chemicals, unless these were intended for non-hostile purposes or the for military purposes not involving the use of chemical weapons and unless the types and quantities of the chemicals were consistent with such purposes. The prohibition was to apply as well to munitions and devices specifically designed to

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106 See, J.P. Jain, n.99, pp.41-42.
cause death or other harm through the toxic properties of chemicals released as a result of the employment of such munitions or devices. The US-Soviet reports during 1980s did not envisage the possibility of concluding a partial ban, as had been proposed by some. In April 1984, the United States proposed a draft convention for a comprehensive ban on chemical weapons.

The lack of progress in negotiations for a multilateral ban on chemical weapons at a time when these weapons were being used by Iraq in the 1980-88 Iraq-Iran war, and when Libya was suspected of constructing a clandestine plant for their production, induced the French government -- the depositary of the 1925 Geneva Protocol to convene a special conference in Paris. In the final declaration of the Paris Conference, adopted on 11 January 1989, the representatives of nearly 150 States expressed their determination to prevent any recourse to chemical weapons by completely eliminating them. They recognized the continuing validity of the 1925 Geneva Protocol and recalled their concern at violations of the Protocol, as established and condemned by the United Nations; they further reaffirmed the necessity of conducting at an early date, a Convention prohibiting the development, production, stockpiling and use of chemical weapons, and providing for their destruction, and emphasized that the Convention must be global, non-discriminatory, comprehensive, effectively verifiable and of unlimited duration.\textsuperscript{154} They also stated that they wished to strengthen UN procedures related to investigations of alleged violations of the Geneva Protocol. Some representatives of Arab countries at the Paris Conference intimated that, as long as Israel had not formally renounced nuclear weapons, its neighbouring countries could not be expected to renounce their chemical-weapon option. This linkage was interpreted by some countries as an excuse for refusing to join the planned convention, and found scant support among states outside the Middle East region. Although equally repulsive and inhumane, chemical weapons are not comparable to nuclear weapons in terms of destructiveness or perceived usefulness for deterrence against aggression.\textsuperscript{116} The Arab position did not prevent the Final Declaration from being adopted by consensus. However, the Paris Conference was an important political and diplomatic event in that it pointed out the risk of repeated use of chemical weapons as long as these weapons remained in stockpiles.

\textsuperscript{154} Josef Goldblat, no. 15, p. 102.

\textsuperscript{116} Ibid.
and proliferated to new countries. In practical terms, however, it had little impact on the negotiations for a comprehensive ban on chemical weapons.

Major proposals and diplomatic initiatives, intense, denser and protracted negotiations preceded the global ban on chemical weapons during 1989. But, do these negotiations hold much water towards a global ban on chemical weapons? For further understanding upon this the negotiations between the USA and Soviet Union are so crucial. At the end of the 1989 session of the CD, some progress on a bilateral level was made. The United States and the Soviet Union agreed to set of detailed procedures for on site inspections on challenge. The work was said to have drawn on experience with the 1987 intermediate nuclear force (INF) Treaty between the USA and Soviet Union. The US representative to the CD stated that the positions of the two countries on challenge inspections were "identical". The Soviet Union had mentioned, in July 1989, that a joint proposal on this subject might be submitted to the CD. Some results were achieved on the order of destruction of existing CW stockpiles. The US representative to the CD stated in a press interview that there was agreement on the "levelling out" of the stockpiles by the eighth year of the total ten year destruction period. During the last two years, each party concerned would destroy its remaining CW. It was mentioned that details remained to be worked out, but that the two sides had, in principle, agreed on a mathematical formula prescribing the amounts and types of CW to be destroyed.

On 25 September 1989, the US President George Bush, in a speech before the UN General Assembly put forward a three-point proposal. He proposed that the United States and the Soviet Union destroy more than 80 per cent of their CW stockpiles even before the CWC is concluded. This could begin at once if agreement on the verification of destruction is reached. 98 per cent of the stockpiles of the two countries would be destroyed within eight years after a multilateral Convention has entered into force, provided the Soviet Union joined the treaty. All CW stocks would be eliminated until the end of the tenth year if all States capable of producing CW have signed the

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The Soviet Union welcomed the US proposal but proposal to go further and accept the following obligations before the CWC is concluded: The two sides should stop the production of CW (the Soviet Union has done so, the United States not). This would be subject to international verification. They should, on a bilateral basis, reduce radically or destroy totally all CW stockpiles as a step towards a multilateral treaty. They should also renounce the use of CW under all circumstances. The latter would imply a withdrawal of reservations to the Geneva Protocol. The Soviet Union did not accept the US proposal to destroy the remaining 2 per cent of the stockpiles only if all CW-capable States have joined the multilateral treaty. The United States responded that it was against the total destruction of CW before the entry into force of a multilateral treaty because this would negatively affect the motivation of other States to join the Convention. It also refused to stop the production of Chemical Weapons. The high publicity accorded to the two proposals notwithstanding they offered nothing new. The United States is obliged to destroy around 80-90 per cent of its (older) stockpile of CW until 1997 according to a law passed by Congress. At the same time, it planned to continue the production of binary CW. These weapons are more efficient in a military sense than the older types of CW which will be destroyed. The Soviet Union proposed, in addition to the destruction of CW on a bilateral basis, the cessation of CW production, something it has unilaterally done since 1987. Moreover, the Soviet Union presently does not have a destruction facility for CW.

In mid-September 1989, the US administration reportedly decided to modify its position, held since 1984, and propose to permit the production of CW even after a multilateral treaty has entered into force. This challenged a long-standing consensus in the CD which is reflected in the rolling text. It holds that the production of CW is to be stopped.

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17 Section 1412 of the Department of Defence Authorization Act 1986 (Public Law 99-145). The phrase “making virtue out of necessity” was used by some observers.
immediately after the entry into force of the treaty. \footnote{The "rolling text" is the continuously updated version of the joint preliminary and non-binding draft Convention on Chemical Weapons which is being negotiated in the Ad Hoc Committee on Chemical Weapons. It reflects the preferences of delegations to the Conference on Disarmament at the end of each Session. It is included in the report of the Ad Hoc Committee to the CD, and in the report of the latter to the UN General Assembly. If there is consensus on the wording of a provision, it is included in the rolling text. If there is more than one proposal for a provision, or if a specific provision or objected to by one delegation or more, it may be included in brackets. In addition, reservations, objections, or clarifications are registered in footnotes.\textsuperscript{149} The production of CW is to be stopped immediately after the entry into force of the treaty -- this position, if formally taken by the United States in the CD, would revive the controversy over a French proposal submitted in 1987. France had proposed that each interested party be permitted to produce, during the ten year destruction period, a limited "security stockpile" of CW at a single facility subject to international verification. These CW would be stockpiled at undeclared locations and would be destroyed during the last two of the 10 years. The French proposal was withdrawn after having met with strong objections by almost all other delegations to the CD. It was therefore questionable whether a US proposal of this type would receive a more favourable response.}

The conditions which must pertain for states to engage in negotiations on arms control are the result of a complex interaction of domestic, regional and global interests. As far as an individual country is concerned, the "national interest" is paramount important. The success of those negotiations depends on the interplay of several related factors, including motivation, timing, commitment and stability of governments represented in the negotiations, degree of trust and tension between some or all of the parties, bargaining strategies, the diplomatic climate and level of public awareness and pressure.\footnote{Negotiation is the explicit, reciprocal, direct and designed process of}
communication between competitive parties seeking to reach agreement. The diplomatic kind of negotiation takes place internationally, with governments normally as the principal parties. During the course of the times, the complexion, colour, substance and style, both the international and domestic contexts of diplomacy have changed dramatically, and technological advances in communications and transportation have altered its modalities. Even so, its chief instrument, negotiation, has essentially remained much the same. Moreover, by focussing on the fundamental characteristics of negotiation, one can identify the elements of both continuity and change in the efforts that states have made throughout the modern period to deal with conflicting interests and to promote their mutual interests. In this respect, the CWC is a case in point. Most analyses of international legislation begin at the table and explore the determinants of and obstacles to agreement among the participants. More recently, however, analysts and practitioners alike have recognized the importance of investigating the conditions and processes that encourage the parties to consider negotiation. The process of getting to the table as "prenegotiation" or negotiation about negotiation. This process is essential and important for any negotiation. It gives a thorough, clear-cut, well thought-out and well-conceived idea towards formal negotiations. Most obviously, if prenegotiation does not succeed, it will have important consequences for negotiation at the table. Prenegotiation defines the boundaries, shapes agenda-setting and affects the outcome of negotiation. Finally, prenegotiation may have important consequences even if the participants do not get to the table. Significant learning process may occur during

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121 Of primary importance is each state’s specific interests, such as possession of the weapons under discussion, hostile or allied relationship with another state which possesses the weapons, regional considerations, commercial trade in the materials or technologies related to the weapons under discussion, and so on. The authority vested in the negotiating team by its government becomes crucial in the final stages of negotiations when deals may have to be struck with little time for haggling with competing interests back home. For an excellent analysis on diplomacy part those days, see Alan K. Henrikson, "The Global Foundations for a Diplomacy of Consensus" in Alan K. Henrikson (ed.), Negotiating World Order - The Artisanship and Architecture of Global Diplomacy (Wellington: Scholarly Resources Inc., 1986), p.231.

122 At times, moreover, parties may enter into a process of prenegotiation with the expectation that they will not get to the table but that participation in the process will bring important political benefits independent of the outcome. If we take the significance of prenegotiation, it is quite obvious that in the case of Superpowers and a few developed countries, they come to negotiating table with thorough preparations with different alternative options to convince their opposite sides. Their delegation may include several subject experts, think-tanks, scientists, academicians, technical and legal experts specially during prenegotiation stages. Countries such as India has been succeeded in some negotiations with career diplomats to a greater extent. The question is: Will generalists have an edge over specialists? A specialist who knows less and less about more and more. For a wide-ranging understanding on this dimension, see Gordon A. Craig and Alexander L. George, Force and Statecraft - Diplomatic Problems of Our Time (3rd edn.) (New York: Oxford University Press. 1995), p.164.
prenegotiation stages which permits the parties to reconceive their relationship. Sometimes, the relationship is critical, perhaps, the weakest links in the long chain of agenda-setting. Hence, the relationship shapes and shares the successes and failures in any negotiations. As the number of states participating in negotiations increases, so the variables multiply, complicating the process further. Multilateral negotiations are characterized by asymmetry of interests. Some states will participate because they no longer need the weapons or technologies under discussion, or because they fear that others will acquire them if they do not accept restrictions themselves. Others will have a broader ideological motive, such as the desire to see a class which they have eschewed put out of bounds for all interests may relate directly to security assessments or they may be indirect, such as economic and political gains. Diplomatic negotiation is bargaining between states. It sets the context and rules for international bargaining between non-governmental institutions and individuals. Diplomatic negotiation strives to bridge differences between the completing sovereignties of independent states. Often they choose to resolve their differences through dialogue and negotiation. The purpose of diplomatic negotiations is to obtain the acquiescence of another state (or states) in adjustments in relations that advance national interests and address national concerns. A refusal to negotiate is also a form of negotiation. It may prolong a relatively favourable status quo and delay concessions that will ultimately have to be made. It may permit the problem to be resolved by the evolution of other forces. It may induce the other side to improve its

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124 Ibid., pp.84-85.

125 Delay may allow a favourable shift in the balance of perceived power between the parties to emerge. It may gain an interval in which to make a show of resolve, gain allies, or prepare for war. Political interests include closer relations with certain states and enhanced prestige or influence within a region or alliance. A particular government or regime may identify certain international relations gains with consolidation of domestic power or electoral prospects. Some arms control negotiations reinforce the hegemony of the powerful, freezing a particular status quo or enabling those with greater capability to rationalize their forces. While some hope that international measures will result in a kind of equalization at zero, arms control is generally undertaken only where the dominant states perceive a reasonable prospect of maintaining the power balances at lower levels of hardware. For an overview, see Chas W. Freeman, Jr., Arts of Power, Statecraft and Diplomacy (Washington, D.C. United States Institute of Peace Press, 1997), p.87.

126 Ibid., pp.87-88.

127 Ibid., p.88.
offer. It may buy time to create facts or otherwise strengthen or consolidate a position of advantage.

In December 1989, during the US-Soviet summit off the coast of Malta, the US President reportedly stated that he would not seek permission of the continuation of CW production under the Convention if the Soviet Union accepted his proposal made in the UN General Assembly in September 1989. It was also reported that the US President had proposed to sign, at the next summer meeting which is to be held in June 1990, a bilateral accord on a 80 per cent reduction of US and Soviet CW stockpiles.\textsuperscript{128} This proposal was welcomed by the Soviet Union and the conclusion of a bilateral agreement on a 80 per cent reduction of CW stockpiles appears likely. However, the implementation of such a treaty would probably have to be delayed because the Soviet Union has, at present, no destruction facility. Help by the United States in this regard is not excluded. To facilitate progress on future multilateral negotiations, it is first necessary to understand how the interplay of factors affect the course of disarmament negotiations in the Conference on Disarmament. The CD, is constituted the multilateral negotiating forum on disarmament issues under UN auspices. As such the CD was intended to have a different function and purpose from forums such as the UN Disarmament Commission and the First Committee on Disarmament and International Security of the UN General Assembly, which discussed broader policy and inter-state relations. Aware of its shortcomings as an effective negotiating body, the CD has been attempting to update its agenda, structures and procedures. Reorganizing itself is proving a slow process, with no agreed solutions yet in sight. Negotiations in the CD utilize formal groupings of states which represented the political affiliations of nations during the Cold War: the Group of Western States, and others, the Group of East European States and others, and the G-21 Group of Non-Aligned States. As it became clear during the CTBT negotiations, the groups' usefulness in managing decision-making was limited because the level of nuclear development was a greater determinant of negotiating behaviour than membership of a particular group.\textsuperscript{129}

\begin{thebibliography}{9}
\bibitem{129} Rebecca Johnson, n.\textsuperscript{85}, p. 85.
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Pending the conclusion of a Chemical Weapons Convention, Australia initiated informal multilateral consultations aimed at curbing the proliferation of chemical weapons by restricting the export of precursors. The so-called Australia Group, patterned partly on the Nuclear Suppliers Group, agreed on a list of chemicals subject to export controls and on means to prevent circumvention of these controls by companies and individuals. In December 1992, the Australia Group also agreed to control exports of biological agents and toxins as well as the equipment that could be used in production of biological weapons. The obligations assumed by the members of the Group, although not legally binding, have raised the cost of acquiring chemical and biological means of warfare. In an agreement signed on 5 September 1991 at Mendoza (Argentina), Argentina, Brazil and Chile reaffirmed their unilateral statements on non-possession of chemical weapons. They also pledged not to develop, produce or acquire these weapons and expressed the intention to establish appropriate inspection mechanisms in their respective countries with regard to the precursors of chemical warfare agents. The Mendoza Agreement was acceded to by Bolivia, Ecuador, Paraguay and Uruguay. In December 1991, the countries of the Andean Group -- Bolivia, Colombia, Ecuador, Peru and Venezuela signed at Cartagena de Indias (Colombia) a declaration on the renunciation of weapons of mass destruction. They proclaimed a commitment not to possess, produce, develop, use, test or transfer nuclear, biological, toxin or chemical weapons, and to refrain from storing acquiring or holding such weapons in any circumstances. The Cartagena Declaration expressed the determination of its signatories to promote the transformation of Latin America and the Caribbean into an area free of weapons of mass destruction. In another development during those years, in a Joint Declaration signed at New Delhi on 19 August 1992, India and Pakistan undertook not to develop, produce or otherwise acquire chemical weapons, not to use these weapons, and not to assist, encourage or induce anyone to engage in such activities.

During the inter-sessional consultations and the 1990 session of the CD several questions came up. Will the Soviet Union agree to the destruction of 80 per cent of US
and Soviet stockpiles while the United States continues production of binary CW? Would the 80 per cent reduction take place before the CWC enters into force, or would be conclusion of a multilateral treaty be possible during the implementation of the bilateral accord? Regarding the lack of a destruction capacity in the Soviet Union, but also the sheer size of existing stockpiles on both sides, an 80 per cent destruction would not be completed until the mid 1990s. Most countries agree that a delay of the multilateral treaty until that time is not desirable. With a view to the comment, referred to above, that the US binary programme might be terminated before the CWC enters into force, a delay of the multilateral treaty until the mid-1990s might be considered by some countries as a deliberate strategy designed to permit the completion of the programme for binary CW. Other questions are: What does 80 per cent mean? Many observers assumed that this referred to 80 per cent of the current US stockpile. The United States, however, has not yet declared the size of its stockpile. How would compliance with the bilateral agreement be verified? If the procedures provided for in the rolling text were applied for this purpose, this could be a useful test of their practicability. How to formalize the proposal that the remaining 2 per cent of CW stockpiles (probably around 500-800 agent tons) would be destroyed only if all CW capable States have joined the treaty? Could a "pause" be written into the CWC itself, into a separate protocol...? How to define CW capable States?

Ultimately, in May 1991, the United States retreated from its position that it must be allowed to keep a chemical weapon stockpile of 500 tons until all chemical weapon capable states had joined the projected multilateral Convention. It was thus really to commit itself unconditionally to the destruction of all its chemical weapon stocks and chemical-weapon production facilities. It stated that once the convention became effective it would give up the right to retaliate with chemical weapons. This US renunciation of the postulates put forward in the US-Soviet 1990 Chemical Weapons

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155 An exchange of destruction technology between the United States and the Soviet Union to facilitate faster destruction of CW in the USSR is conceivable. In August 1987, speeches by Soviet Foreign Minister Eduard Shevardnadze and his ambassador in Geneva opened up the Soviet negotiating position, announced Glasnost in the Soviet military chemical programmes, and accepted the proposal for mandatory challenge inspection and other intrusive verification measures which the United States had put forward in its 1984 draft Convention. See, Conference on Disarmament (CD) document, CD/PV.428, 6 August 1987, pp.10-11; Conference on Disarmament, document no.CD/PV.429, 11 August 1987, pp.2-7.

154 Binary chemical weapon is a shell or other device filled with two chemicals of relatively low toxicity which mix and react with each other while the device is being delivered to the target, the reaction product being a super-toxic chemical warfare agent, such as nerve gas. See, Thomas Bernaner, n.10, pp.31-32.
Agreement narrowed the gap between the positions of the chemical weapon 'haves' and 'havenots'. It was welcomed by the Soviet Union and many other states, and gave a new impulse to the multilateral talks. In September 1992, the Conference on Disarmament finalized the text of a Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction. This text -- which includes the Annex on Chemicals, the Annex on Implementation and Verification (Verification Annex) and the Annex on the Protection of Confidential Information (Confidentiality Annex) -- was forwarded to the UN General Assembly, which endorsed it. In January 1993, the Chemical Weapons Convention (CWC)\textsuperscript{135} was opened for signature.

\textbf{Chemical Weapons Terrorism and National Security Concerns}

National Security requirements have traditionally been associated with the need to defend a country with the force of arms. National security implies the defence of a country and the activities involved in protecting against any attack, danger, etc. This is the first and foremost concern as far as an individual country is concerned. Political declarations of good intentions are not considered sufficient guarantees against aggression, which the United Nations has defined as the use of armed force by a state against the sovereignty, territorial integrity or political independence of another state. There are two ways of achieving security without reliance on a build-up of arms. One is through arms control agreements, the other through collective international security arrangements. The two are closely intertwined: Progress in one field facilitates progress...

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\textsuperscript{135} In August 1992 France confirmed its earlier invitation to host a signatory conference in Paris at the beginning of 1993. The United Nations General Assembly under Resolution A/47/39 on 30 November 1992 at the 74th plenary meeting adopted the report of the First Committee on Chemical and Bacteriological (Biological) Weapons including the draft resolution on the Convention, see United Nations General Assembly Official Records (GAOR), Plenary, 74th meeting. UN Doc.A/47/690, 25 November, 1992, pp.6-8. Under paragraph 2 the Secretary-General, as Depository of the Convention was requested to open it for signature in Paris on 13 January 1993. See also, the Text on the CWC in 32 International Legal Materials (1993), pp.804-873.

According to modern diplomatic usage, the term 'treaty' is confined to the more important international agreements and those of lesser or subordinate importance have been called Conventions, agreements, pacts, exchange of notes, protocols, agreed minute or memorandum of understanding and declarations, but they are undoubtedly international agreements subject to the Law of Treaties. The great variety of the designations used for describing international agreements praises the question of the justification for that diversity and of the possibility -- or desirability -- of keeping it within reasonable bounds. In most cases there is no apparent reason for the variation in the terms used. They often create the impression that they were dependent upon a factor no more decisive than the mood of the draftsman. See, Lok Sabha Secretariat, Parliament and International Treaties (New Delhi: Lok Sabha Secretariat, 1976), p.2.
in the other.\textsuperscript{136} Functions of arms control may do the following:\textsuperscript{137} (a) reduce the risk of war started by accident; (b) slow down global and regional arms races; (c) increase predictability in the relations between opposing states and reduce fears of the intentions of a potential adversary; (d) minimize the disparities between heavily and lightly armed states and thus remove an important source of instability; (e) encourage states to resort to peaceful means in solving their disputes; (f) save resources needed for economic and social development; (g) mitigate the destruction and suffering in armed conflicts which may break out despite negotiated arms limitations; (h) diminish the dangers to the environment; and (i) promote trust and better understanding among nations.

Arms control negotiations are an essential component of international diplomacy. Obviously, certain conflicts -- such as those provoked by revolutionary or national liberation movements -- cannot be directly affected by inter-state arms control agreements. However, international controls over the spread of weapons, weapon technologies and weapon-usable materials may circumscribe the scope and effects of such conflicts as well. Normally, arms control is not a matter for negotiation among friendly nations. It is needed, above all, where relations among states are characterized by enmity. However, a modicum of sanguine expectation from negotiations is indispensable. Apart from such extreme cases, and short of a complete breakdown of communication between states embarked on a collision course, there are few situations that could justify abandoning efforts to control armaments by States claiming not to harbour aggressive designs.\textsuperscript{136}

The national security of individual states will be well served in a number of ways. They will face a diminished threat of chemical warfare from potential aggressors.\textsuperscript{137} They

\begin{itemize}
    \item \textsuperscript{136} For a detailed discussion, see Josef Goldblatt, Arms Control - A Guide to Negotiations and Agreements (London: SAGE Publications, 1994), p.91.
    \item \textsuperscript{137} Ibid.
    \item \textsuperscript{138} Ibid., pp.5-6.
    \item \textsuperscript{139} To the extent that arms control is meant to serve the security and other interests of all parties participating in negotiations, it cannot be treated as a favour rendered by one state to another or as a reward for international 'good behaviour'. Linking of arms control with the domestic policies of the negotiating partners is also risky: It may impede progress in arms control, without necessarily promoting the solution of other issues. Even when the negotiating climate is not propitious for achieving early results, the mere fact of maintaining a continuous inter-governmental communication channel to deal with matters of (continued...)}
will have at their disposal an instrument that increases their understanding of the military capabilities of potential opponents. They will be able to invoke the assistance of the international community in dealing with noncompliant neighbours. The proliferation of WMD or the already existing presence of WMD and their impact on security perceptions, cannot be examined strictly by region. For example, in South Asia, the circles of concern of India and Pakistan intersect. India's circle of concern intersects with China's. China circle in turn, interacts with Russia, and for that matter, with the USA. Unless arms control initiatives take cognizance of such interrelations, they will not succeed. In other words, security consists of freedom from aggression or undue interference from others; first in the physical (military) and political sphere; and second, in the material and economic sphere. Status or prestige could also be a manifestation of a drive for worth self-image. Hence, the concerns of any country are security or status or some mix of the two.

The proliferation of WMD -- nuclear, chemical and biological -- and the means for their delivery at longer ranges has emerged as a leading issue in the post-Cold War debate about international security. The greatest concern, however, is related to their use. There is no doubt about the use of WMD and its proliferation is the major international security issue. Pertaining to international system, one should focus on three issues: First, the structure of the system; second, the processes that take place within it; and third, the rules and norms that seek to regulate the actors' behaviour in the system. The structure of international system tells one first, how the component units (states) of the system are related to each other (hierarchy versus anarchy); and second, how power is distributed within the system (polarity). The processes tell
one how the units interact with one another. The rules and norms function as guidance devises for states. Structure, processes, and norms and rules define the overall character of the system. One principal lacunae associated with the above-mentioned international system, international politics, is mainly about struggle for power by realist school envisaged by Morgenthau. This school of thought corroborates power is the final determinant in international politics.

The new threat of international security might also be well served in a number of ways. The Chemical Weapons Convention (CWC) will dampen the pressures for Chemical Weapons (CW) proliferation. This could have a ripple effect in dampening pressures for the proliferation of other weapons, especially weapons offering the kind of strategic leverage sometimes ascribed to chemical weapons. Despite the tendency common among western arms controllers to separate analytically chemical, biological, nuclear, and missile technologies and capabilities, the pattern of proliferation suggests that they are somehow connected, although exact connections obviously must differ in specific instances. Nonetheless, it can be hoped that the CWC will dampen the proliferation of weapons of high strategic leverage, especially those most closely associated with chemical weapons -- biological ones. There might be other international security benefits: the CWC might remove chemical weapons from the arsenals of states known to sponsor terrorism and may thus be useful in reducing the vulnerability of all states to such acts. Because arms control is an instrument of national security strategy, its objectives are integrally linked to those of a nation's overall defense priorities.

For planning purposes, defense priorities are developed and applied on at least two levels: the grand strategy level, representing general security aspirations, and the operational level, where the broadly stated objectives of grand strategy are translated into more specific goals to guide actual military operations. The same is true for arms control, where objectives have been articulated at the grand strategy and operational

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145 Ibid., pp.2-3.
146 Ibid., pp.2-3.
147 Ibid., p.19.

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levels as well. Military writings often refer to a third level of abstraction, the tactical level. In arms control terms, tactical objectives would be those applied in the context of specific negotiations or treaties.

The basic grand strategic objectives of arms control as an instrument of national security remain virtually unchanged, at least in general terms. U.S. national security interests at the highest level of abstraction are essentially the same as during the Cold War: to protect and preserve the fundamental freedoms and institutions of the United States by deterring or preventing attack on US national interests at home and abroad. New threats, nonetheless, have necessitated reordering the priorities among traditional US national security objectives. Deterring nuclear attack is now less urgent than preventing or countering proliferation of weapons of mass destruction, for example. The founding premise of traditional arms control theory -- that arms control can be an important adjunct to national security strategy -- has not always been obvious nor consistently observed in practice because arms control is inherently a counter intuitive approach to enhancing security. Consider the following:\textsuperscript{148} Arms control makes national security dependent to some degree on the cooperation of prospective adversaries. It often involves setting lower levels of arms than would otherwise appear prudent based on a strict threat assessment. It mandates establishing a more or less interactive relationship with putative opponents and, in the case of mutual intrusive verification and data exchanges, exposing sensitive national security information and facilities to scrutiny by foreign powers. It requires seeking and institutionalizing areas of common ground where the potential for conflicts of interest seemingly far outweigh objectives in common. Arms control is fundamentally a high-stakes gamble, mortgaging national survival against little more than the collateral of trust and anticipated reciprocal restraint, often in a geopolitical context fraught with political hostility and tension. It is, in fact, a voluntary (and not always reversible) delimitation of national sovereignty. Viewed from this perspective, arms control is not obviously better than its alternative -- unilaterally providing for one's own security.\textsuperscript{149} What compels the United States and other nations, then, to structure so much of their national security posture on an approach that seemingly contradicts a country's natural instincts toward self-sufficiency and self-

\textsuperscript{148} Ibid., pp.20-21.
\textsuperscript{149} Ibid., p.21.
preservation? The answer to this apparent paradox is that the theory of arms control as developed in the late 1950s and early 1960s -- if conceptually valid and faithfully implemented -- allows us to anticipate than an otherwise equivalent degree of security may be established by negotiation at weapons levels lower than would be the case if these levels were determined unilaterally.

Today's threat of chemical and biological weapons comes from rogue states -- states that refuse to join the CWC or BWC, or that join and cheat - and from non-state terrorist groups. American think-tanks and brain thrusts call these states as "rogue states", "axis of evil", for some "countries of particular concern" and so on and so forth. Few notions within the US national security and defense communities get as much attention as does the growing anxiety over a chemical or biological weapons attack on American citizens.\textsuperscript{150} Many foreign policy experts, both in and out of government, argue that the question is no longer "if", "but" but "when" a chemical or biological weapons of mass destruction will be used against the United States or its allies. The Secretary of Defense has stated that a "race is on between our preparations and those of our adversaries".\textsuperscript{151}

International cooperation between states, and the effective implementation of international agreements, are problems which loom large in the field of terrorism. A dozen international treaties and protocols, as well as seven regional conventions on terrorism, currently exist.\textsuperscript{152} However, there is no internationally agreed definition


\textsuperscript{151} For a detailed discussion, see, William S. Cohen, "Preparing for a Grave New World", Washington Post, 26 July 1999.

as to what "terrorism" is, and the majority of actors in the field of terrorism are non-state actors. The term "terrorism" has often been taken to imply attacks by small groups or independent organizations, rather than attacks by well-organized, non-state actors or asymmetric warfare by States. This problem is compared by the fact that federal agencies use different definitions of terrorism: The State Department of the USA uses a statutory definition of terrorism: "Premeditated, politically motivated violence against non-combatant targets by subnational groups or clandestine agents, usually intended to influence an audience". The Federal Bureau of Investigation (FBI) defines terrorism more broadly: "the unlawful use of violence, committed by a group of two or more individuals against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives". The FBI's definition of terrorism is broader than the State's definition, in that the terrorist act can be done by a group of two or more individuals for social as well as political objectives. Because of this broader definition, the FBI includes in its annual reports on terrorism in the United States acts such as bombings, arson, kidnapping, assaults and hijacking committed by persons who may be suspected of associating with militia groups, animal rights groups, and others. Federal agencies also use different terms to describe their programs and activities for combating terrorism. For example, the FBI uses "counter-terrorism" to refer to the full range of its activities directed against terrorism, including preventive and crisis management efforts. On the other hand, Department of Defense (DOD) uses the term "counter terrorism" to refer

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to offensive measures to prevent, deter, and respond to terrorist attack and "anti-terrorism" to cover defensive measures to reduce the vulnerability of individuals and property to terrorist acts. The US-based Federal Emergency Management Agency (FEMA) defines terrorism as: "Terrorism is the use of force or violence against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion, or ransom. Terrorists often use threats to create fear among the public, to try to convince citizens that their government is powerless to prevent terrorism, and to get immediate publicity for their causes." The General Accounting Office (GAO) used the term "combat terrorism" to refer to the full range of federal programs and activities applied against terrorism, domestically and abroad, regardless of the same or motive. The Rand Corporation definition of terrorism is: "Terrorism is violence, or the threat of violence, through acts designed to coerce others into actions they otherwise would not undertake or into refraining from actions that they desired to take. All terrorist acts are crimes. Many would also be violations of the rules of war, if a state of war existed". These definitions have to be viewed from the purely Western perspective. By and large, the concept "terrorism" lacks a conclusive, consensual and universal definition. Effective implementation of international treaties implies that States have a monopoly on violence that many weak states, and states in transition, in reality do not possess. Even developed democracies find it hard to control transnational organized crime groups, militant anti-immigration parties, and religious cultures on their territory.

War with WMD among the major powers seems unlikely for six reasons. First, there are not currently strong causes that can justify a resort to arms. Second, major

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165 What is the relevance of the arguments to the use of WMD? Since there is not an agreement about the relationship between polarity and stability, what conclusions can be drawn regarding the use of WMD? What are the conditions that determine the use or the non-use of WMD in a multipolar world? Do these conditions apply exclusively to a multipolar system or can they be equally applied to a bipolar one? To arrive to some conclusions, one should focus on the war participants. In this context, three types of warfare can be identified. First, war between the major powers of the system; second, war between the major powers on the one side, and the powers of the periphery and semi-periphery on the other; and third, war among the powers of the periphery and semi-periphery. See <http://www.fema.gov/library/terror.htm>.


167 Ibid., pp.117-118.
powers are armed with significant numbers of WMD that provide credible deterrence. Third, power disparities between the great powers themselves prevent the weaker of them from hurting the more powerful ones, while the latter are conscious that any effort to dominate the system would most certainly attract the combined reaction of the other great powers. Fourth, great powers have established crisis prevention and crisis management mechanisms that reduce the possibility of inadvertent or accidental wars. Fifth, increasing interdependence and globalization brings major powers closer to each other. And sixth, it is difficult for a state, even if it is a major power, to commit a breach of international law by using WMD; especially when it has enough conventional power in its disposition. The only possibility for a major power to resort to the use of WMD is when it evaluates that this use is imperative for achieving its goals and that the benefits it obtains from it are not outweighed by the costs.

There are terrorism related with weapons of mass destruction such as chemical terrorism, biological terrorism and nuclear terrorism. These are the great concerns to global, regional, human security for individual countries. From a functional perspective, however, ignoring the risk of asymmetric warfare does not encourage objective planning and analysis. Neither does using definitions of "terrorism" that include virtually any out of violence other than one committed in the context of a declared war and involving the overt use of a properly identified military weapons system in full compliance with the most stringent interpretation of the Geneva Convention. In the 1990s terrorism became a major security concern and several international cooperative efforts to combat it were launched.\footnote{The United Nations General Assembly adopted the International Convention for the Suppression of Terrorist Bombings on 9 Jan.1998. A proposal to create a NATO Centre for Weapons of Mass Destruction was also made in 1998. These and other international initiatives are discussed in Zanders, J.P., French, E.M. and Pauwels, N., "Chemical and Biological Weapon Developments and Arms Control", \textit{SIPRI Yearbook 1999: Armament, Disarmament and International Security} (Oxford: Oxford University Press, 1999), pp.593-95, and in Chapter 9 in this volume.} Since the Aum Shinrikyo - the Japanese religious cult, sarin attack on the Tokyo subway in March 1995, there has been rising apprehension about the existence of a new form of terrorism that does not shy away from using WMD. With the 1994 and 1995 releases of the nerve agent sarin by Aum Shinrikyo terrorism made a qualitative leap: for the first time, a terrorist organization had discharged a so-called
weapon of mass destruction. Half a decade later, these fears have not been realized -- world have not seen nuclear, radiological or chemical attacks or in other words chemical, biological, radiological and nuclear (CBRN) attacks by non-State terrorists. However, international community have witnessed in the aftermath of the tragic attacks on the World Trade Centre (WTC) in New York and the Pentagon in Washington, D.C., US, on 11 September 2001, a biological attack in the form of letters containing Anthrax spores.

The growing concerns of international terrorism, types of WMD attack, threat assessment, prioritization and homeland security assume much attention. Pertaining to types of attacks he illustrated a list of possible attack scenarios from a wide range of highly lethal CBRN attacks are practical, although most would now require an attacker to at least have access to the level of technology available only to governments. Second, it shows has dangerous it is to assume that attacks have to follow any rules or be carried out in a predictable way. Third, it shows that many attacks can defeat "first response" as well as avoid early US efforts at detection or containment and/or can be tailored to bypass or counter many of the measures the United States is currently exploring for homeland defense. Fourth, it illustrates the fact that attackers can use more than one means of attack at the same time. Finally, it illustrate: the dangers of leaving any gap in homeland defense between responding to overt warfare like missile attacks and to relatively limited attacks by terrorists. The reasons why the Aum Shinrikyo sarin attacks produced relatively few casualties, why the cult was unable to produce a viable biological warfare agent or why such events did not occur earlier are currently not or only unsatisfactorily explained. Terrorism is a complex social

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156 Ibid.

157 While some analysts had predicted this development, the reasons why terrorist organizations should resort to chemical and biological weapons (CBW) remain unclear. Most studies focus on the potential consequences of such an attack. Relatively small amounts of chemical or biological (CB) warfare agents are claimed to be able to produce huge number of casualties -- according to some estimates hundreds of thousands. Because of the immensity of the envisaged consequences of the political motives for such (continued...)
phenomenon because its causative factors, nature and goals and the identify of the perpetrators vary depending on the epoch or society under consideration. Terrorism is an extra-legal activity that uses or threatens to use premeditated violence to instil chronic fear in a victim in pursuit of strategic goals specified by the perpetrator. The types of terrorism vary depending on motive, function, effect, nature of the violence and mode of combat or strategy. On the surface, it appears that the Rajneesh and Aum Shinrikyo cults resorted to CB terrorism to thwart attempts by law enforcement officials to interfere with their activities. However, the deeper motivations and intended outcomes were fundamentally dissimilar, which contributed to important differences in their preparations for CB terrorism and agent selection. Such differences are significant when assessing the threat and consequences of CB terrorism. While speaking about terrorism and WMD, both have to be differentiated. Of the different types of agents that can also be used as WMD, the radiological and chemical weapons are probably the easiest to acquire by terrorists. Chemical agents are often duration dual-use substances: that is, they and most of their precursors can be used to both commercial and military purposes. This is not, however, the case with classical chemical warfare substances like tabun, sarin or VX. Most studies have so far concentrated on how vulnerable open urban societies are to the use of WMD by terrorists organizations, rather than on how to realistically assess the threat. There is no denying that these types of weapons can cause huge catastrophes if they are used, to their fullest potential. Theoretically, a teaspoonful of sarin can kill 5,000 persons. Yet, in practice, it would take something like 1,000 kilograms to kill 5,000 people.

outdoors. In theory, botulinum toxin (a biological agent, rather than a chemical one) is some 10,000 times deadlier than sarin, but in outdoor dissemination, it degrades in the environment, and so is no deadlier than sarin.\textsuperscript{166}

**Chemical Terrorism**

What is chemical terrorism? Clearly, not all offensive uses of chemical substances are terrorist in nature. Tear gas, for example is a non-lethal chemical agent. However, as outlawed instruments of warfare, chemical weapons, by their nature and the memories of their deployment in the First World War, inspire fear. The enhanced fear factor makes them terrifying. All WMD inspire terror—that is their purpose. But, not everything terrifying is also "terroristic."\textsuperscript{167} What is terroristic? There is still no agreed definition of "terrorism" in international law. The existing conventions outlaw specific acts—bombings, hijackings, hostage taking, etc.—but do not address the strategic goals and the political intent of the terrorists. Not everything a "terrorist" does is automatically "terroristic". Some activities of groups labelled "terrorist" might be legal, other might be non-violent, yet still others might constitute guerilla warfare tactics. Only one element of their violent actions might be terroristic, in the sense that they are intended to intimidate a target group, to blackmail a government, or to serve the purpose of impressing a public. The issue of assessing "intent" is a difficult one. Intent is hard to establish, since intent requires knowing the motivation. For example, Article II of the Chemical Weapons Convention\textsuperscript{168} deals with definitions and criteria of chemical weapons. For the purposes of this Convention:

\textbf{Art.II (1)}

1. "Chemical weapons" means the following, together or separately:

\begin{enumerate}
  \item Toxic chemicals and their precursors, except where intended for purposes not prohibited under this Convention, as long as the types and quantities are consistent with such purposes;
\end{enumerate}


Munitions and devices, specifically designed to cause death or other harm through the toxic properties of those toxic chemicals specified in subparagraph (a), which would be released as a result of the employment of such munitions and devices;

Any equipment specifically designed for use directly in connection with the employment of munitions and devices specified in sub-paragraph (b).

2. "Toxic Chemical" means:

Any chemical which through its chemical action on life processes can cause death temporary incapacitation or permanent harm to humans or animals. This includes all such chemicals, regardless of their origin or of their method of production, and regardless of whether they are produced in facilities, in munitions or elsewhere.

(For the purpose of implementing this Convention, toxic chemicals which have been identified for the application of verification measures are listed in Schedules contained in the Annex on Chemicals).

3. "Precursor" means:

Any chemical reactant which takes part at any stage in the production by whatever method of a toxic chemical. This includes any key component of a binary or multi-component chemical system.

(For the purpose of implementing this Convention, precursors which have been identified for the application of verification measures are listed in Schedules contained in the Annex on Chemicals).

4. "Key Components of Binary or Multi component Chemical Systems" (hereinafter referred to as "key component") means:

The precursor which plays the most important role in determining the toxic properties of the final product and reacts rapidly with other chemicals in the binary or multi-component system.

5. "Old Chemical Weapons" means:

(a) Chemical Weapons which were produced before 1925; or

(b) Chemical weapons produced in the period between 1925 and 1946 that have deteriorated to such extent that they can no longer be used as chemical weapons.

6. "Abandoned Chemical Weapons" means:

Chemical weapons, including old chemical weapons, abandoned by a State after 1 January 1925 on the territory of another State without the consent of the latter.

These above-mentioned definitions and categorizations, too, raise the problem of assessing "intent". Intentions can change easily, especially if the chemical agents are already there. While there are many toxic chemical agents, those that have been weaponised are of special concern to us here; they are classified by their main effects.
on the human body. They include blister agents, pulmonary agents, blood agents, choking agents, tearing and incapacitating agents, nerve agents, and psychopharmacological agents. Each has the effect indicated by its name. For terrorist use, weaponisation, however, crude, of any of the agents is required. This includes the design, production or acquisition, stabilization, and storage of the agent, and its transportation and delivery to the target population through mechanical, pneumatic, thermal or explosive means. The most effective, but also the most difficult, form of distribution is through aerosol generators. An aerosol disperses the toxic agent in tiny droplets that float above the ground, or they are blown through an air conditioning system until they come into contact with a target. For these nature and characteristics, chemical terrorism can be defined as the intimidation, blackmailing, or propagandisation of a target audience through the threat or use of weaponised toxic chemical agents against non-combatants.170

In India, the Prevention of Terrorism Ordinance (POTO) was promulgated by the President in exercise of his powers conferred by Article 123(1) of the Constitution of India on 24 October 2001. The POTO specifically aims to deal with all aspects of terrorism. An ordinance, once promulgated, has the same effect and force as any other law for the time being in force in India. An Ordinance has to be approved by the Parliament after due consideration, will be the comprehensive piece of legislation specifically to tackle terrorism. The POTO has 61 Sections and is divided into six chapters. It has a territorial as well as extra-territorial application. Pertaining to the WMD aspect, Section 3(1) of the Ordinance is relevant here. It defines "terrorist acts" as acts done with the intent to threaten the unity to integrity of India or to strike terror in any section of the people by using weapons and explosive substance or other methods (chemical, biological etc.) in a manner as to cause or likely to cause death or injuries to any person or persons or loss or damage to property or disruption of essential supplies and services etc.

Since the sarin attacks in the Tokyo underground system, much attention has been paid to a subset of CB materials: The chemical and biological warfare agents. These weapons are toxic chemicals or pathogens designed, developed and selected by the military to

170 Alex P. Schmid, no.167, p.415.
support certain missions established in the military doctrine of a state. Chemical warfare agents represent a compromise in terms of military utility:

1. A presumptive agent must not only be highly toxic, but also "suitably highly toxic" so that it is not too difficult to handle.
2. It must be possible to store the substance in containers for long periods without degradation and without corroding the packaging material.
3. Such an agent must be relatively resistant to atmospheric water and oxygen so that it does not lose its effect when dispersed.
4. It must also withstand the shearing forces created by the explosion and heat when it is dispersed.\textsuperscript{171}

In the past the military have had several types of chemical warfare agent at their disposal and an agent appropriate to the mission has been selected on the basis of volatility versus persistency, and lethality versus incapacitation. Candidate biological warfare agents have similarly been selected on the basis of a compromise between pathogenicity, survivability of the agent after release and controllability. Military biological warfare programmes have included lethal, incapacitating and anti-crop agents. This mission-oriented selection process has shaped the direct goal - instrument relationship. The compromise with respect to the selection of the agents in terms of their military utility may have made CB warfare agents less attractive to terrorists. Some potential CB warfare agents (Sarin, VX, anthrax, botulinum, toxin, and so on) are among the most lethal substances that exist. Central to the catastrophic CB terrorism scenarios resulting in mass casualties is the focus on toxicity or pathogenicity. However, the manufacture of large batches of such agents poses technological and organizational problems. Terrorists would also have to overcome difficulties in the weaponization (i.e., preparing the agent to be delivered as a weapon) and dissemination of these agents.\textsuperscript{172}

In order to judge the likelihood of terrorist attacks with CBW it is necessary to have a clear understanding of the weapon acquisition process from the perspective of the demand side: the terrorist organization. Using the assimilation model, a heuristic device designed for studying CBW armament programmes in countries for which limited information is available on decision-making processes and the structure of armament programmes, it is possible to identify and assess the key parameters in a CBW


\textsuperscript{172} Jean Pascal Zanders et. al., n.1 \textsuperscript{171} p.540.
programme set up by a terrorist organization. There are three main sets of parameters to consider: the material base of the terrorist organization, the tension between norms and threats, and the group strategy and structure. The material base of a terrorist organization is a key determinant of whether or not it will be able to develop and produce CBW domestically. The material base consists of the organization's physical base and its internal characteristics. The physical base comprises elements that determine whether the organization will be able to acquire chemical and biological weapons. A terrorist organization has little influence over certain elements. For example, the organization's geographical location and the type of culture in which it is embedded will have a direct bearing on the nature of the organization and its appeal. The second component of the material base consists of the internal characteristics of the terrorist organization. The organization can relatively easily exploit, manipulate or develop certain of these characteristics to achieve its goals. Its culture may be based on social ideology, apocalyptic or millenariary vision racial superiority, ethnic nationalism, religious fanaticism, and so on. In the quest to acquire CBW the level of education and training of the members, as well as the science and technology base that they are to establish, become important factors. Norms -- influence the willingness of the terrorist organization to pursue CBW. However, they form a complex aspect of social interaction and often do not manifest themselves in an absolute form. The application of a norm hinges on the recognition of the other party as an equal partner. The rules, norms and values which apply to members of the faith do not apply to non-members. As evidenced by Nazi Germany and the Japanese biological weapon (CW) experiments in World War II, sentiments of racial and cultural superiority can affect the formulation and application of norms. Several of the terrorist organizations profiled here display similar traits. This has a double implication for

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173 Zanders, J.P., "Tackling the Demand Side of Chemical and Biological Weapon Proliferation", ed., D. Schroeder, Technology Transfer (London, Ashgate Publishing, 1999), forthcoming. Regarding the adaptation of the assimilation model for the study of terrorist organizations, see Zanders, J.P., "Assessing the Risk of Chemical and Biological Weapons Proliferation to Terrorists", Non-Proliferation Review, vol.6, no.4 (Fall 1999), pp.17-34. The model is also explained with graphics in the Internet Educational Module on CBW Non-Proliferation, created by the SIPRI CBW Project, the Centre for Peace and Security Studies of the Free University of Brussels and the International Relations and Security Network (ISN), Zurich, URL <http://cbw.sipri.sc>.

174 Jean Pascal Zanders, n.162, pp.545-46.

175 Ibid., pp.546-47.
terrorist organizations. First, the norms maintained by the group may differ significantly from those of the broader society. Internal or external constraints that could raise the threshold for acquiring CBW may therefore be non-existent, and the success of the armament dynamic may depend entirely on factors in the material base.

Second, because of their convictions the group members may differentiate themselves from the rest of the society to such an extent that the elimination of non-members -- even on a large scale -- can be easily justified. This world view may remove any moral objection against CBW use. The strength of norms is also directly linked to the nature of the threat. This raises the question of whether an existential threat to a terrorist organization (e.g., a threat which is gradually building and which the group feels it cannot manage) contributes to the erosion of the group's norms. Pertaining to the third element i.e., group strategy and structure, if the leadership of a terrorist organization decides to initiate a CBW armament programmes it must make decisions regarding the allocation of its resources. These decisions, and the nature of the programme, will depend on the organization's goals and the way it is structured. A state actor enjoys freedom from prosecution, can buy technologies abroad and hire foreign specialists. In contrast, a terrorist organization must work in secrecy because of the threat that law enforcement officials may raid its facilities. This makes it impossible for the organization to hire an outside specialist or technician for a limited time to solve a particular problem. Instead the organization must recruit and convince such an individual of the justness of its cause. The degree of dependency on external skills and technologies is also a function of the complexity of the weapon system which the leaders of the group have decided to acquire.

While there has been some use of chemical weapons by State actors in recent years, what is the situation with regard to non-State actors and, in particular, with regard to terrorists? One of the most extensive databases in the public domain, prepared by the Monterey Institute for International Studies' Center for Nonproliferation Studies,

176 Ibid., p.547.
177 A loosely structured, amorphous group with little central guidance or any organization structured in small cells for maximum security (e.g., patriot organizations, animal rights groups and loners) will find it harder to set up a CBW armament programme than a vertically structured, highly integrated and ideologically uniform group, such as Aum Shinrikyo or the Rajneesh cult. On the other hand, any organization will be constrained by its material base and will have to import many of the components and technologies necessary for a CBW armament programme. For a terrorist organization this can be a formidable challenge. Ibid., pp.547-48.
included 560 known cases of the attempted acquisition or use of chemical and biological weapons. Since 1975, it has noted 154 fatalities from "chemical terrorism", but has also indicated that in 60 per cent of incidents no one was killed or injured. The database of the United Nations Terrorism Prevention Branch lists, for the period since 1945, about 100 events involving the use of chemical or biological agents. Examples of these are in the form of hoaxes, acquisitions, aborted attempts and uses of chemical weapons partly successful or not. Analyzing the national security concerns of individual countries and chemical terrorism, further line of argument goes like this in one sense, it was not a surprise that the first terrorist attack with potential WMD agents was a chemical, rather than a nuclear or biological, attack.

The key chemical weapons can broadly be categorized into eight. They are mainly known such as nerve agents, blister agents, choking agents, blood agents, toxins, developmental weapons, control agents, and incapacitating agents. Nerve agents that quickly disrupt the nervous system by binding to enzymes critical to nerve functions, causing convulsions and or paralysis. It must be ingested, inhaled, and absorbed through the skin. The most toxic nerve agents kill with a dosage of only 10 milligrams per minute per cubic meter, versus 400 for less-lethal gases. The main nerve agents are Tabun (GA), Sarin (GB) -- nearly as volatile as water and delivered by air, Soman (GD), GF, VR-55 (improved Sorman), VK/VX. Blister agents are other varieties of chemical weapons constitute cell poisons that destroy skin and tissue, cause blindness upon contact with the eyes, and which can result in fatal respiratory damage. It can be colourless or black oily droplets and absorbed through inhalation or skin contact. Blister agents are Sulfur Mustard (H or HD), distilled mustard (DM), Nitrogen Mustard (HN), Lewisite (L), Phosgene Oxim (CX), Mustard Lewisite (HL). Another variety choking agents that cause the blood vessels in the lungs to hemorrhage, and fluid to build up, until the victim chokes or drowns in his or her own fluids (pulmonary edema). The

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181 Ibid., p.115.
main choking agents are phosgene (CG) -- had widely been used in World War II, Diphosgene (DA), PS Chloropicrin, Chlorine Gas. Next variety of chemical weapons - blood agents. It kills through inhalation and provides little warning except for headache, nausea, and vertigo and interferes with use of oxygen at the cellular level. Most gas masks have severe problems in providing effective protection against blood agents. Main blood agents are Hydrogen Cyanide (AC), Cyanogen Chloride (CK). Toxins are biological poisons causing neuromuscular paralysis after exposure of hours or days. The main toxins -- Botulin toxin (A) -- six distinct types, of which four are known to be fatal to man. A new generation of chemical weapons is under development may be classified into "Developmental Weapons". The only publicized agent is perfluoroisobutene (PFIB), which is an extremely toxic, odourless, and invisible substance produced when PFIB (Teflon) is subjected to extreme heat under special conditions some sources refer to "third" and "fourth" generation nerve gases, but no technical literature seems to be available control agents which produce temporary irritating or disabling effects when in contact with the eyes or inhaled. The main control agents consist of tear (gas), chlororacetophenone (CN), O-Chlorobenzyl-malononitrile (CS), Adamsite (DM), and Staphylococcus. Next, incapacitating agents which normally cause short term illness, psychoactive effects (delirium and hallucinations). These agents mainly involve BZ, LSD, LSD Based BZ, Mescaline, Psilocybin, and Benzilates. Pertaining to national security component of diplomacy, chemical terrorism, perhaps, the greatest challenge of international community. One "wild card" that might change this situation is the potential existence of the so-called fourth generation chemical weapons. According to some reports, Russia developed for more lethal chemical weapons during the Cold War and brought them to production readiness. At least some experts believe that it is possible that four more lethal chemical weapons exist than are listed in unclassified studies. It is unclear that advanced chemical or biological weapons really exist and there is no way to assess what states or terrorist/extremist movements might acquire them.

With respect to methods of delivery of chemical weapons, they are not easy to handle or deliver and even nerve gas would have to be used in large amounts to achieve high
levels of coverage and lethality. Obtaining suitable delivery systems can be a real problem, although covert attacks can be conducted from fixed locations in an urban area. Suitable dual-use delivery systems are readily available in the form of crop duster aircraft and simple spray generators that can be readily adapted for the delivery of a variety of agents. At the same time, the quantities of chemical agent required to conduct low-level attacks are relatively small when compared to industrial production of similar commercial chemicals, which pose problems for detection. Terrorists could employ chemical weapons agents in a variety of means utilizing simple containers such as glass bottles. The lethality of any given chemical weapon would also increase strikingly if it was used in a closed environment like an office building with a forced air system, or disseminated under ideal conditions in an urban environment. Lethality may also be only one consideration in choosing the means of delivery for a covert or chemical terrorist attack. Much would depend on the perceptions of the attacker of the full range of post-attack impacts of using a chemical weapon. It is far from clear, for example, that civilians would ever accept a building as safe where persistent chemical agents had been used, regardless of the success of contamination efforts. The Persian Gulf War syndrome and Agent Orange are one thing in the context of US military serving overseas; chemical attacks are quite another in the context of civilians living in America. For the Matsumoto attack in 1994 the cult manufactured 5-10 litres of purer sarin. In that attack evaporation was accelerated because the agent was dropped on to an electric heater and released outdoors. However, the process may also partially have decomposed the agent into less toxic compounds. In both attacks the amount of pure sarin that was actually airborne was less than the liquid amount. Evaporation is a slow process that is further influenced by the surface area of the liquid, agent purity temperature and air turbulence. Sarin is a liquid that evaporates at a rate similar to that of water. The total evaporation time for sarin spilled indoors is estimated to be

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several hours. So this is situation in which the lethality of sarin -- one of the most used chemical weapons in chemical attacks.

What is worrying about chemical agents is their strong dual-use element, and the fact that there are so many professional chemical factories in the world. In 1993, for instance, there were almost 20,000 chemical manufacturing plants in the United States alone, accounting for almost one-third of the world's total chemical production capacity. Such facilities are, if unprotected, sitting ducks for chemical terrorists. A recently disclosed study by the United States Army Surgeon General concluded that as many as 2.4 million people could be killed or injured in a terrorist attack against a United States toxic chemical plant in a densely populated area. While this represents a worst case scenario, even middle-range casualty estimates from an explosion of a toxic chemical manufacturing plant or a chemical weapons attack are as high as 903,400 people, according to this United States study. The study found that at least 123 United States plants each keep amounts of toxic chemicals that, if released, could form deadly vapour clouds that would endanger more than 1 million people. The study ranked the threat of attacks against chemical plants second only to the widespread use of biological weapons (such as smallpox) which could generate as many as 4.18 million casualties. This is one example. Pertaining to globalization and its offshoots -- technological advancement, impinges on the great concern with chemical terrorists. In broader terms, globalization means integration of national economy into international economy. Globalization refers to a process where "people, activities, norms, ideas, goods, services, and currencies are decreasingly confined to a particular geographic space and its local and established practices".\(^\text{156}\) As a result of this process, politics, economics, culture and ideology are interwoven. During this globalization era, the establishment of the World Trade Organization (WTO) paved the way for new international trade regime. This is a quite significant development. Manifestations of the globalization process the interpenetration of industries across borders, the spread of financial markets, and an emerging worldwide preference for democracy. Globalization is rendering boundaries and identity with landless salient and encompasses the expansion of production, trade, and investments beyond their prior locales.

problems in developing effective interception, defense, and response measures can be compounded by using more than one group of attackers and by mixing agents that require different kinds of protection and decontamination. Furthermore, it is far from clear whether the detection and sensor systems necessary to cover entire urban areas and provide detection and characterization of an attack will be cost-effective. These are the facts about detection and interception about chemical weapons.

Pertaining to acquisition of chemical weapons at the wrong hands, many experts believe that most attackers will find it difficult to obtain the necessary chemical weapons, in the necessary amounts, and to develop an effective delivery system or device. Acquiring chemical agents would not be a problem for most governments, but the ease with which most domestic or foreign terrorists can obtain or manufacture such weapons has sometimes been exaggerated. Acquisition of chemical weapons becomes more critical issue for international community. The December 1999 report by the Gilmore Commission makes the following points:

It has sometimes been claimed that producing sarin and other nerve agents is a relatively easy process, to the extent, according to one authority that "ball-point pen ink is only one chemical step removed." While sarin may be less complicated to synthesize than other nerve agents, the expertise required to produce it should not, however, be underestimated. The safety challenges involved would, at a minimum, require skill, training, and special equipment to overcome. For this reason, the level of competency required for producing sophisticated chemical nerve agents, including sarin, will likely be on the order of a graduate degree in organic chemistry and/or actual experience as an organic chemist -- not simply a knowledge of college-level chemistry, as is sometimes alleged.

Furthermore, the U.S. General Accounting Office's (GAO) analysis found that -- experts from the scientific, intelligence, and law enforcement communities we spoke with agreed that toxic industrial chemicals can cause mass casualties and require little, if any, expertise or sophisticated methods. Generally, toxic industrial chemicals


can be sought on the commercial market or stolen thus avoiding the need to manufacture them. Chlorine, phosgene, and hydrogen cyanide are examples of toxic industrial chemicals. U.S. Department of Defense (DOD) classified further details concerning the use of toxic industrial chemicals. Experts believe that unlike toxic industrial chemicals, for various reasons, most G and V chemical nerve agents are technically challenging for terrorists to acquire, manufacture, and produce. Examples of the G-series nerve agents are tabun (GA), Sarin (GB), and Soman (GD). VX is an example of a V-series nerve agent. According to chemical experts, developing nerve agents requires synthesis of multiple precursor chemicals. Production of sarin, soman, and VX requires the use of high temperatures and generates corrosive and dangerous by-products. According to experts, terrorists could disseminate chemical agents using simple containers such as glass bottles with commercial sprayers attached to them or fire extinguishers. These experts agree that disseminating a chemical agent in a closed environment would be the best way to produce mass casualties. Weather affects exterior dissemination, particularly sunlight, moisture, and wind. Some chemical agents can be easily evaporated by sunlight or diluted by water. The experts stated that it is also difficult to target an agent with any precision or certainly to kill a specific percentage of individuals outdoors. For example, wind could transport a chemical agent away from the designated target area. …The 1995 attack by Aum Shinrikyo, an apocalyptic religious sect, in the Tokyo subway using the chemical nerve agent sarin elevated concerns about chemical and biological terrorism. Twelve people were killed and many more were injured as a result of that incident. Some experts have noted that despite substantial financial assets, well-equipped laboratories, and educated scientists working in the laboratories, Aum Shinrikyo did not cause more deaths because of the poor quality of the chemical agent and the dissemination technique used.167 What all these invariably suggest is that the acquisition and manufacturing of chemical weapons are easy, at the same time it is highly complicated and non-efficacious.

It must consider the risk that chemical attacks can produce much larger levels of damage and virtually any use of such weapons will have a far different psychological impact. Chemical weapons are weapons of terror and intimidation as well as a means of producing casualties and physical destruction. There are a wide range of countries

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167 Ibid., p.12.
involved in the development of chemical weapons. India, Pakistan and China, not
America will decide the future of weapons of mass destruction programs in South Asia.
Optimally, these decisions will derive from deliberate, far-sighted calculations of
national, regional and global interests. America can cajole and facilitate disarmament
process by providing analyses of the various regional and global interests
and affect the local national and regional calculations of interest by providing incentives
for considering broader global interests. Among these interests are the avoidance of
escalation-prone conflict, the non-diversion of resources which could otherwise enhance
economic development, and the strengthening of democracy and economic reforms in
India and Pakistan. Satisfying each of these global interests clearly augments the
national interests of India, Pakistan and China. Ultimately, it all depends upon situations
and circumstances of these countries from time to time. It should be unquestioned that
these three countries will retain ultimate sovereignty over nuclear decision making. Yet,
often, India, Pakistan and less so Chinese elites feel that their sovereignty over these
matters is questioned by the United States and other powers, implicitly if not explicitly.
America has been widely proclaimed sole remaining Superpower has its own decision-
making for the protection of their global interests. Complex, psychological, cultural and
political factors make these relationships unusually demanding for all parties. These
relational impediments must be recognized and overcome.

Although the realists’ arguments about the essential properties of international politics
are persuasive, their contentions and conclusions were frequently at odds and even
contradictory.

"... critics... noted a lack of precision and even contradiction in the way
classical realists use such concepts as "power", "national interest", and
"balance of power". They also see possible contradictions between the
central descriptive and prescriptive elements of classical realism. On the
one hand, as Hans Morgenthau put it, nations and their leaders "think
and act in terms of interests defined as power", but, on the other,
statesmen are urged to exercise prudence and restraint, as well as to
recognize the legitimate national interests of other nations. Obviously,
then, power plays a central role in classical realism. But the correlation
between the relative power balance and political outcomes is often less
one hand, as Hans Morgenthau put it, nations and their leaders "think and act in terms of interests defined as power", but, on the other, statesmen are urged to exercise prudence and restraint, as well as to recognize the legitimate national interests of other nations. Obviously, then, power plays a central role in classical realism. But the correlation between the relative power balance and political outcomes is often less than compelling, suggesting the need to enrich analyses with other variables".195

Thus, once analysis moved beyond the belief that people are wicked and the rhetoric requiring that foreign policy serve the national interest, important questions remained:196 What policies best serve the national interest? Do alliances encourage peace or instability? Do arms promote national security or provoke costly arms races and war? Are states more prone to act aggressively when they are strong or weak? Are the interests of states better served through competition or through cooperation? If humankind is unchanging, then how do we explain the observable evolution and transformation of the international system? Indeed, how do we explain the growth of collaborative multilateral institutions, economic expansion, and states' observable willingness to abide by ethical principles and agreements rather than to exploit others ruthlessly when the opportunity arises? These questions are empirically verifiable and answering them requires real-world evidence and rigorous analysis.

As during the Cold War, armed conflict between a major power and a lesser power is difficult but not impossible.197 Arguably, the most enduring contributions of the CWC to international security are as yet little understood.198 But reference to these earlier arms control experiences suggest that it will be influential in changing

196 For a brilliant analysis, see Charles W. Kegley Jr., and Eugene R. Wittkopf, p.30.
197 In case of such conflict, WMD are more likely to be used by the lesser power in order to outweigh the advantages that the conventional superiority gives to the great power. Whether the lesser power will use WMD depends on the specific strategic conditions and costs associated with the expected reaction of the international community and more importantly on the response of the major power that will be hurt. Indeed, if WMD were used against it, the major power might find it less difficult to initiate a retaliatory attack with similar weapons. Such an attack, however, is subject to two conditions: first, whether enough conventional power is available to defeat the opponent; and second, whether the benefits of this retaliatory strike are higher than the costs associated with the expected reaction of the international community. Despite realism's shortcomings, much of the world continues to think about world politics in its terms, especially in times of global tension. This happened, for example, in early 1980s when the Cold War competition between the United States and the Soviet Union embittered new phase and their arms race accelerated. Because realism provides great insight into the drive for national security through military means. For more details, see Yannis A. Stivachtis, n.98, p.118.
perceptions about the problems with which it grapples: national ambitions, the purposes of armaments, the nature of security and conflict, and the promise and limits of international cooperation. Because of decades(s) ahead will witness a shift of international discourse from the former East-West agenda to an agenda more dominated by North-South and South-South issues, it seems reasonable to conclude that the CWC will be important in shaping the politics of international security along these dimensions.

The new menace of terrorism pertaining to the WMD specially the threat chemical terrorism receives much high priority since 11 September 2001 World Trade Centre (WTC) attacks. Related to the implementation aspects, the challenge of terrorism assumes significance. The provisions of the CWC which apply to the danger of the terrorist use of chemical weapons (CW), with a view to identifying what role the implementation of the Convention has in the global struggle against terrorism. The terrorism dimension has already been mentioned in previous chapters. There is a realization that the CWC aims to completely rule out the possibility of the use of chemical weapons. The Convention not only establishes legal norms for its States Parties but also requires them to enact prohibitions for any of their individual citizens who, anywhere in the world, engage in activities prohibited to States Parties under the Convention. In fact, the Convention requires making the development, production, acquisition, stockpiling, transfer and use of chemical weapons a criminal offence in all States Parties, and for all citizens of all States Parties, irrespective of where the offence may have been committed. The same applies to assistance, encouragement or inducement to engage in such prohibited activities. There is, accordingly, no doubt that the Convention constitutes a solid legal basis for actions to prevent and prosecute chemical terrorism. In this respect, the provisions of the CWC that apply to all States Parties, should identify and the following areas in which action should be considered:

- The completion of the legislative and regulatory work required of all Member States under Article VII of the Convention, in order to ensure

199 For a detailed discussion, see OPCW Technical Secretariat, "The OPCW and the Global Struggle against Terrorism" in Rodrigo Yepes Enriquez Lisa Tabassi, n.3, pp.429-440, particularly pp.429-30. See also, the Note by the Director-General on the OPCW and the Global Struggle Against Terrorism, OPCW doc.EC-XXVII/DG.3 (1 November, 2001), and Corr. 1 (27 November 2001), together with the Note by the Secretariat or OPCW Capabilities Relevant to the Global Struggle Against Terrorism, OPCW doc.S/294/2002 (6 February 2002).
that terrorist activities involving chemical weapons can be effectively investigated and prosecuted;

- The active promotion of universal adherence to the Convention, in order to broaden the geographical scope of such prohibitions;

- Enhanced cooperation amongst Member States in the enforcement of the Convention's prohibitions;

- The full implementation of the provisions of Article VI, with the objective of increasing the level of difficulty and risk which will be confronted by terrorists trying to acquire the capability to employ toxic chemicals as a means of terrorist attack; and,

- The increased readiness to deliver, under Article X, effective and timely assistance to victims of chemical weapons use, in order to save human lives and to reduce human suffering, while striving to minimize the impact of terrorist chemical attacks.

The following areas of possible action are identified:

- Increasing physical security at locations containing chemical weapons, as well as for sensitive equipment, in order to prevent diversion or theft by terrorist organizations; and,

- Full implementation of all requirements related to destruction operations, with a view to shortening the period of time during which chemical weapons and sensitive equipment remain potentially vulnerable to theft or attack.

The terrorist attacks against the United States of America on 11 September 2001 have changed global priorities. The international community of nations finds itself in a new historical situation, in which not only States or national entities, but also organized terrorist groups, have the power capacity to threaten international peace and security, to destabilize governments, and to foment regional, inter-regional, and global divisions, unrest, and instability. The threat of the use of weapons of mass destruction by terrorists is real and continuing. Concerns have been raised at the highest level about the possibility of terrorists, inter alia attempting to utilize chemical, biological, and nuclear materials. That terrorists will not be deterred from using chemical weapons was clearly demonstrated by the use of sarin in the Tokyo subway in 1995.

The CWC is founded on the premise that the States Parties are "determined for the sake of all mankind, to exclude completely the use of chemical weapons,"

180 Article VI of the CWC deals with "activities not prohibited under the Convention". Article VI, Para 1 says, "Each State Party has the right, subject to the provisions of this Convention, to develop, produce, otherwise acquire, retain, transfer and use toxic chemicals and their precursors for purposes not prohibited under this Convention".

181 Article X of the CWC relates to "assistance and protection against chemical weapons".

182 OPCW Technical Secretariat, n.199, p.430.

183 For a detailed discussion, see OPCW Technical Secretariat in Yepes-Enriquez and Lisa Tabassi, p.430.
through the implementation of the provision of this Convention, thereby completing the obligations assumed under the Geneva Protocol of 1925..." From this, and from the requirements of Article VII of the Convention in relation to legislative action, including the enactment of penal legislation and the affording of international legal cooperation, it follows that the Convention does indeed contain provisions that are relevant to the struggle against terrorism. Global adherence to the Convention, and its comprehensive implementation, will facilitate more effective global action against chemical terrorism and will reduce risks associated with it. While the OPCW's mandate has not changed since 11 September 2001, the new level of threat posed by the possible use of chemical weapons by terrorists requires a reevaluation of how the OPCW has been implementing its mandate. This re-evaluation must also encompass a consideration of whether Convention-related implemented practices, as well as the provisions of the Convention itself, respond adequately to this new level of threat. Accordingly, the attempts to identify and analyze the relevant provisions of the CWC that have a direct bearing on the struggle against terrorism, in relation to actions by both the Member States and the Organization at large. Promoting universal adherence to the CWC contributes tangibly to the struggle against terrorism by enlarging the area of the world in which chemical weapons are banned, and in which measures against terrorist activities involving chemical weapons have a longer reach and much greater legal force than would be the case without the Convention. Universal adherence to the Convention has been an OPCW priority of overriding importance ever since the entry into force of the Convention.\footnote{Report by the Director-General: Report on the Implementation of the Recommendation of the Conference of the States Parties at its Fifth Session on Ensuring the Universality of the Chemical Weapons Convention, \textit{OPCW doc. C-V/DG.7} (15 May 2001).} The activities undertaken by the Member States, the Director-General and the Secretariat to attract further ratification and accessions were most recently detailed in the report by the Director General to the OPCW Conference of the States Parties ("Conference") at its Sixth Session.\footnote{See OPCW Conference of the States Parties decisions taken at the Second, Third, Fourth, Fifth and Sixth sessions, \textit{OPCW docs. C-II/DEC.11} (5 December 1997), C-III/DEC.9 (20 November 1998), C-IV/DEC.22 (2 July 1999), C-V/DEC.21 (19 May 2000), and C-VI/DEC.11 (17 May 2001).}

The CWC stipulates, \textit{inter alia}, each State Party \textit{shall} undertake never under any circumstances to assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under the Convention (Article I, subparagraph 1(d)).
It also requires States Parties to prohibit natural and legal persons anywhere on their territory or in any other place under their jurisdiction as recognized by international law from undertaking any activity prohibited to a State Party, including enacting penal legislation with respect to such activity (subparagraph 1(a) of Article VII); not to permit, in any place under their control, any activity prohibited to a State Party by the Convention (Article VII, subparagraph 1(b)); to extend their penal legislation to any activity prohibited to a State Party undertaken anywhere by natural persons, possessing their nationality, in conformity with international law (subparagraph 1(c) of Article VII); and to afford the appropriate form of legal assistance to other State Parties, to facilitate the implementation of the obligations under paragraph 1 of Article VII (Article VII, paragraph 2). These general obligations, which are further amplified by the provisions of Article VI, clearly established the responsibility of each Member State to actively prevent acts of terrorism involving chemical weapons, or preparations for them, and to cooperate with other Member States in the investigation and prosecution of crimes related to violations of the Convention.

The Convention defines chemical weapons in Article II, paragraph 1. From this provision, as well as from the provisions of paragraphs 2 and 3 of Article II, and from Section B of the Annex on Chemicals, it is evident that the definition of "chemical weapons" is not limited to the chemicals listed in the Schedules of the Annex on Chemicals, but extends to all toxic chemicals and their precursors, except when they are intended for purposes not prohibited under the Convention, and as long as their types and quantities are consistent with such purposes. While most of the verification measures applied under the Convention relate to chemicals listed in the Schedules, the legislative, regulatory, administrative and law enforcement measures adopted by the
Member States could be expected to extend to other relevant chemicals, and must be firmly based on the definition of the term "chemical weapon" contained in the Convention. Many chemicals which are in circulation for legitimate applications would pose a considerable threat if they were used as chemical weapons by terrorists. It is prudent not to assume that terrorists will restrict themselves solely to the use of chemicals listed in the Convention's Annex on Chemicals. This is an important consideration to bear in mind when addressing the applicability of the CWC's provisions to the international struggle against chemical terrorism.

Provisions Affecting All Member States, in relation to Articles VI and VII (Development and Enactment) of Legislation

Article VI, paragraph 2, requires each State Party to adopt the measures necessary to ensure that toxic chemicals and their precursors are only developed, produced, otherwise acquired, retained, transferred, or used within its territory or is any other place under its jurisdiction or control for purposes not prohibited under the Convention. Paragraphs 3-9 of Article VI stipulate the regime of declarations, verification through data monitoring and on-site inspections, and other measures applying to facilities and activities of States Parties in relation to activities not prohibited under the Convention. These provisions have to be seen in conjunction with the relevant provisions of Article VII on national implementation measures.

The full implementation of these already existing requirements by all Member States would contribute substantially to:

- Denying terrorists access to chemicals that could be used as chemical weapons;
- Deterring the potential supply to terrorists of knowledge, equipment and chemicals;
- Ensuring that any involvement with chemical weapons could, and would, be effectively prosecuted; and
- Increasing the effectiveness of legal action against terrorist involved in activities prohibited to States Parties under the Convention, no matter where the terrorists are found, and irrespective of where the illegal activities have been conducted.

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1. See Article VI, paragraph 2 of the CWC. It says: "Detailed procedures for the implementation of this Article are set forth in the Verification Annex".
2. For a detailed discussion, see OPCW Technical Secretariat in Rodrigo Yepes-Enriquez Lisa Tabassi, n.174 pp.432-33.
The following practical measures by Member States may be considered as having a direct bearing on the struggle against terrorism (with respect to terrorist activities involving chemical weapons): 2

(a) Prohibitions, including the enactment of penal legislation, which would contain penalties sufficiently severe to deter a potential violator;

(b) Extending prohibitions extraterritorially to natural persons possessing the State’s nationality, for activities undertaken anywhere in the world;

(c) Establishing the instruments or arrangements necessary to enable full and effective legal cooperation with all other Member States;

(d) The designation or establishment of National Authorities, to enable the Member States to fulfill their obligations under the Convention;

(e) Regular reporting to the OPCW on progress in the development of national implementing legislation and related enforcement measures including, if required, seeking the OPCW’s assistance (from both the Secretariat and Member States) in the preparation of such laws, regulations and measures;

(f) Subjecting Schedule I chemicals to the prohibitions specified in Part VI of the Verification Annex, including those on production, acquisition, retention, transfer and use, except as provided for in paragraph 2 of Part VI of the Verification Annex, and the prohibitions on transfers and retransfers contained in Section B of that part;

(g) Subjecting Schedule 1 facilities and chemicals to systematic verification and other measures in accordance with Part VI of the Verification Annex;

(h) Considering measures to be adopted in relation to facilities that handle (store or consume) Schedule I Chemicals, with a view to enhancing security and accountability;

(i) Subjecting Schedule 2 and Schedule 3 chemicals and facilities to the measures stipulated in Parts VII and VIII, respectively, of the Verification Annex, amongst other things in relation to identifying declarable facilities and activities, and to the provisions on exports and imports vis-a-vis States not party to the Convention.

(j) Considering which chemicals from Schedules 2 and 3, as well as other chemicals that are being manufactured, stored, transported or traded in their territory, may pose a particular danger if used by terrorists and may accordingly require additional measures to be taken including, as necessary, by the OPCW; and,

(k) Reviewing the measures implemented to provide physical protection against terrorist attacks on chemical plants and storage facilities holding toxic chemicals, in order to minimize the probability of releases of toxic materials as a result of such attacks and instituting such improvements as may be necessary.

1993 Chemical Weapons Convention: An Evaluation

The Chemical Weapons Convention represents a total ban on chemical weapons. The definition is very complete: all toxic chemicals are considered to be a chemical weapon
unless they are intended for a purpose not prohibited.\textsuperscript{216} Even the empty munitions, devices and equipment, if specifically designed for use in dispersal of toxic chemicals for harm to humans or animals, are banned.\textsuperscript{217} The Preamble of CWC requires the States Parties to the CWC "determined to act with a view to achieving effective progress towards general and complete disarmament under strict and effective international control, including the prohibition and elimination of all types of weapons of mass destruction". The CWC Preamble desires to contribute to the realization of the purposes of the Charter of the United Nations. The Preamble also reaffirms the principles and objectives of and obligations under the Geneva Protocol of 1925. It should be borne in mind that Article IX of the Biological Weapons Convention which mainly states that the effective measures for the prohibition of chemical weapons, their development and stockpiling and for their destruction and the production or use of chemical agents for weapons purposes. The CWC Preamble recognizes the relevant principles of international law, of the use of herbicides as a method of warfare. Moreover, it considers the achievements in the field of chemistry should be used exclusively for the benefit of mankind and the promotion of free trade in chemicals and exchange of scientific and technical information not prohibited in order to enhance the economic and technological development. Besides its disarmament purpose, the Convention establishes a regime for non-proliferation as well through the device of trade restrictions, States Parties are under the obligation to control, in varying degrees, the toxic chemicals and their precursors. Transfers of such chemicals to States not Party to the Convention is banned (for the chemicals of most serious concern) or is only possible under strict conditions. The 1993 CWC\textsuperscript{212} consists of the Preamble, twenty-four Articles, annex on chemicals, verification annex and confidentiality annex. The annexes

\textsuperscript{216} Article 11(I) of the Convention of the CWC.

\textsuperscript{217} Article 11(I) (b) and (c) of the Convention of the CWC.

\textsuperscript{212} The 1993 CWC text, n.1. For a detailed discussion on important articles and annexes, see United Nations Yearbook 1992, vol.17 (New York: Department of Political Affairs, 1993), pp.29-35.
are part and parcel of the CWC. In its Article I, the Chemical Weapons Convention, provides:

1. Each Party to this Convention undertakes never under any circumstances:
   (a) To develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone;
   (b) To use chemical weapons;
   (c) To engage in any military preparations to use chemical weapons;
   (d) To assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Convention.

Article II of the CWC consists of definitions and criteria such as the meaning of chemical weapons, toxic chemical, precursor, key component of binary or multicomponent chemical systems, old chemical weapons, abandoned chemical weapons, riot control agent, chemical weapons production facility, purposes not prohibited under this Convention, and production capacity. Article III, on the other hand, stipulates on "declarations" with respect to chemical weapons, old and abandoned chemical weapons, chemical weapons production facilities and other facilities whereas Article IV is concerned with the chemical weapons and its detailed procedure for its implementation shall apply to all chemical weapons owned or possessed by a State Party, and jurisdiction. And Article V deals with chemical weapons production

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The Chemical Weapons Convention, Article I (General Obligations) provides:

1. Each State Party to this Convention undertakes never under any circumstances:
   (a) To develop, produce, otherwise acquire, stockpile or retain chemical weapons, or transfer, directly or indirectly, chemical weapons to anyone;
   (b) To use chemical weapons;
   (c) To engage in any military preparations to use chemical weapons;
   (d) To assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under this Convention.

2. Each State Party undertakes to destroy chemical weapons its own or possesses, or that are located in any place under its jurisdiction or control, in accordance with the provisions of this Convention.

3. Each State Party undertakes to destroy all chemical weapons it abandoned on the territory of another State Party, in accordance with the provisions of this Convention.

4. Each State Party undertakes to destroy any chemical weapons production facilities it owns or possesses, or that are located in any place under its jurisdiction or control, in accordance with the provisions of this Convention.

facilities. Article VI of the CWC is extremely relevant which explains the activities not prohibited under the CWC.

Related to national implementation measures under the CWC (Article VII) requires State Parties the general undertakings, relations between the State Party and the organization (the establishment of a National Authority to serve as the national focal point). The Organization for the Prohibition of Chemical Weapons is to achieve the object and purpose of the CWC, which has elaborately mentioned the general provisions, the Conference of the State Parties -- powers and functions, the Executive Council, the Technical Secretariat and provisions of privileges and immunities of the OPCW. Article IX of the CWC, which broadly covers the "consultations, cooperation and fact-finding" through the OPCW and in accordance with its Charter. This Article clearly lays down the procedures for challenge inspections. Article X of the CWC explains the "assistance and protection against chemical weapons".

Article XI of the CWC is important which mainly covers the "economic and technological development" is reflected in the Preamble of the CWC. Article XII of the CWC states that the measures to redress a situation and to ensure compliance, including sanctions -- whereas Article XIII is so crucial which covers "relation to other International Agreements". The settlement of disputes between two or more State Parties under the CWC has laid down in Article XIV. Article XV proposes "amendments" to this Convention. Any State Party may also propose changes, as specified in paragraph 4, to the Annexes of this Convention (Article XV, para.1).

The words "never under any circumstances" mean that the Convention applies during peace and during armed conflict, be that international or internal. No reservations are permitted to the Articles of the Convention.214

The question of eliminating chemical weapons through international treaty has been on the agenda of the world's principal disarmament negotiating body for the past 12 years. Concrete results are evidently some way into the future still, but a fuller understanding has been attained of the political, military, legal and other technical problems that must be surmounted in order to achieve such a treaty. These problems have engaged the

214 Article XXII of the Convention.
attention and research resources of Stockholm International Peace Research Institute (SIPRI) since 1968. With a view both to stimulating progress and to increasing the amount of pertinent information and analysis readily available, SIPRI has published numerous technical studies of chemical disarmament matters.  

A symposium on chemical weapons convened for the purpose by SIPRI during June 1979. Most of the participants were members of the Pugwash Chemical Warfare Study Group. The Symposium reflected the state of the inter-governmental talks on chemical weapons as early 1979. The primary focus of the Symposium was problems of destruction and conversion. The Pugwash literature has been a reasonably homogeneous one that can stand on its own as a contribution to the current international debate on the prevention of chemical warfare. Several reviews are available which describe the course of the intergovernmental chemical-warfare (CW) talks thus far.

For a complete understanding and exhaustive list of literature of chemical weapons disarmament, involves the principal SIPRI publication in the field has been The Problem of Chemical and Biological Warfare (Stockholm: Almqvist and Wiksell) published in six volumes during 1971-75. Parts of this in draft form had previously been distributed in a mimeographed "provisional edition" (February 1970) to Geneva delegations and foreign ministries. The 1968/69 and 1969/70 editions of SIPRI Yearbook of World Armaments and Disarmament (Stockholm: Almqvist and Wiksell) had contained chapters on, respectively, chemical/biological warfare technology and CW disarmament. The 1972, 1973, 1974 and 1975 editions of World Armaments and Disarmament: SIPRI Yearbook (Stockholm: Almqvist and Wiksell) contained chapters reviewing the course of the previous years' chemical talks, thereby updating volume 4 of the main study. Since then SIPRI has arranged for the publication of studies in the field commissioned from outside experts or visiting scholars, and has convened or assisted in the organization of a number of symposia, publishing volumes based on their proceedings.


This is a group of scientists organized via the Pugwash Council from a still growing number of countries, now 22, each of its members having a particular interest or specialization in aspects of chemical-warfare (CW) defence or arms limitation. Established in 1973, the Study Group has organized a succession of international round-table conferences and workshops on CW matters, of which the latest -- the 7th Workshop -- was held concurrently with the SIPRI Symposium. For the final report of this Workshop, and for a listing of the participants and the papers presented, see Pugwash Newsletter, vol.17, no.1-2 (July-October 1979), pp.40-48.

For a documented account of the beginnings of the present series of talks, and on prior talks back to 1920, see SIPRI, CB Disarmament Negotiations, 1920-1970, volume 4 in the series, The Problem of Chemical and Biological Warfare (Stockholm: Almqvist and Wiksell, 1971). As noted above, the talks during 1970-74 are reviewed in the SIPRI Yearbooks for the years in question. The United Nations Secretariat has also published documented reviews covering at the time of writing, the period up to 1977 inclusive (UN, 1970, 1976, 1977, 1978). For the period up to mid-1979, see Compilation of material on chemical warfare from (continued...)

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CWC Implementation: A Broader Perspective

Among the large number of proposals submitted by delegations during the 1970s pertaining to the Chemical Weapons at different forums, three draft Conventions drew particular attention. They were submitted by the Group of Socialist countries, Japan, and the United Kingdom. The Group of Socialist Countries presented a draft treaty in 1972.\(^{217}\) It was modelled after the Biological Weapons Convention and was comprehensive in scope. It included a ban on the development, production and stockpiling of chemical weapons, and provided for the destruction of existing stockpiles. It did, however, not contain any provisions on international verification measures except for a last resort mechanism involving the UN Security Council and consultations among the parties. This lack of specific international verification of compliance was unacceptable to most Western countries. There are a number of factors in the equation for effective enforcement: national implementing legislation, the modalities of international cooperation and assistance, overcoming problems that can arise politically or constitutionally in trying to put the modalities into practice, as well as actual situations that are faced in the field in trying to prosecute offenders in an international context. When specifically considering the enforcement of the ban on chemical weapons, one underlying thread should be kept clearly in mind: which norm is being enforced? The conventional norm has gone through several evolutions, each one formulating a stricter norm and each one gaining a greater number of parties. The number of parties to the Chemical Weapons Convention poses a good question for legal scholars to consider now: What is the content of the customary norm?

Pertaining to implementing measures, customary practices, norms and regimes play a key role. In the North Sea Continental Shelf cases (1969 ICJ Reports 3) the International Court of Justice first recognized the co-existence of identical rules in treaty law and customary law. As it later stated in the Case Concerning Military and Paramilitary Activities in and against Nicaragua, "To a large extent (the North Sea

\(^{217}\)...continued)

the Conference of the Committee on Disarmament and the Committee on Disarmament Working Papers and Statements, 1972-1979 (Prepared by the Secretariat at the request of the Committee on Disarmament.

\(^{218}\) CCD/361. The Eighteen-Nation Committee on Disarmament (ENDC). The most substantial part of multilateral negotiations since the Second World War has taken place in the Conference on Disarmament in Geneva. Earlier, this forum was named the ENDC, Conference of the Committee on Disarmament (CCD), and Committee on Disarmament.
Continental Shelf cases] turned on the question whether a rule enshrined in a treaty also existed as a customary rule, either because the treaty had merely codified the custom, or caused it to 'crystalize', or because it had influenced its subsequent adoption". (1986 ICJ Reports 14, at para 177). Examining treaty and customary law again in the Nicaragua case, the Court rejected the argument that customary principles are subsumed or supervened by treaty law and went on to recognize that parallel treaty and customary obligations could be identified or different. Since states are separately bound by the rule under customary international law, the question then arises: What is the content of the customary norm today? There is no doubt that the prohibition of use of chemical weapons exists as a principle of customary law. The value of identifying the rule, distinct from the treaty obligation, is twofold: First, it is applicable to all States even those which have not become party to the treaty. Second, parties to the treaty may not opt out of adhering to the rule by withdrawing from the treaty or by exercising their right to terminate or suspend the operation of the treaty on the ground of the violation by another party of a "provision essential to the accomplishment of the object or purpose of the treaty".

Identifying the scope and content of the customary rule thus warrants significant attention. This is not a simple task since, as seen above, the rule evolved and expanded over time as it was interwoven through successive treaties that crystallized it and developed it further. "Custom" has been described as "an authentic expression of the needs and values of the community at any given time...It reflects the consensus approach to decision-making with the ability of the majority to create new law binding upon all..." The Geneva Protocol has long been considered to be declarative of


250 For a detailed discussion, see Malcom N. Shaw, International Law (4th edn), (Cambridge: Cambridge University Press, in association with a Groutious Publication, 1997), pp.57-58; The two elements of international custom, as reflected in Article 38(b) of the Statute of the International Court of Justice ("general practice accepted as law") are state practice and opinio juris. Opinio juris constitutes the psychological element by which States in carrying out their practice, do so not out of courtesy or morality but because they believe such practice is consistent with law. As indicated in the 1925 Geneva Protocol, the use in war of asphyxiating, poisonous or other gases, and all analogous liquid materials or devices, has been justly condemned by the general opinion of the civilized world.
customary international law. The language of the Geneva Protocol was confirmed in the most recent multilateral statement of the content of customary international law in respect of the prohibition of chemical weapons, i.e., the Statute of the International Criminal Court (ICC), was adopted by the United Nations Diplomatic Conference of Plenipotentiaries (with delegations from 160 States participating).

International law prohibits the use of chemical weapons: The 1925 Geneva Protocol banned the use of chemical weapons in warfare, and the Chemical Weapons Convention (CWC) signed by 164 countries by January 1993 required the destruction of existing stocks. Nevertheless, legal constraints do not assure the States will forgo them. Iran and Iraq’s use of gas in warfare demonstrated this, as did Egypt’s use of chemical gas weapons in Yemen in the mid 1960s. Iraq even used chemical weapons in 1989 against its own Kurdish people. Thus the firebreak has already been breached.

Both arms control and disarmament measures may be applied with respect to any type of weapons and/or military activities. States attempting to negotiate such measures, however, must first agree on just what kind of arms and/or activities to limit. Since countries tend to have different preferences as to what precisely ought to be subject to limitations -- usually preferring to limit those arms and activities in which others have an advantage -- this decision is hardly trivial or straightforward. Prior to the Second World War arms limitations were primarily related to rules of war and

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224 In 1969 a majority of the UN General Assembly adopted the Resolution 2603A (XXIV) expressing the view that the Protocol embodied the generally recognized rules of international law prohibiting the use in international armed conflicts of all biological and chemical methods of warfare, regardless of any technical developments. In particular, the resolution declared as contrary to the rules of international law the use in international armed conflicts of: (a) any chemical agents of warfare -- chemical substances, whether gaseous, liquid or solid -- which might be employed because of their direct toxic effects on man animals or plants. See, J. Goldblat, Arms Control: A Guide to Negotiations and Agreements (London: SAGE Publications, 1994).


228 Disarmament measures seek to reduce the level of national military capabilities or to ban altogether certain categories of weapons already deployed. The disarmament approach to arms limitations is premised on the assumption that armaments in and of themselves are the main source of tension and war. For more details, see Steve Tulliu and Thomas Schmalberger, Coming to Terms with Security: A Lexicon for Arms Control, Disarmament and Confidence-Building (Geneva: United Nations Institute for Disarmament Research, 2001), p.9.
reductions in aggregate military capabilities. Since then, however, arms limitations have been addressed mostly in terms of weapon categories.

All meaningful benefits which might be obtained from the CWC -- namely, a ban of chemical weapons -- can be achieved another way, without the odious costs. That is, chemical weapons can be banned by amending the 1925 Geneva Protocol. This solution would avoid the principal problems of the CWC, which are that it:\textsuperscript{226}

- is not verifiable;
- is extremely expensive -- for the international community, the United States and selected other governments, and for the chemical companies;
- Could lead to loss of proprietary and national security information;
- Could cause the violation of the rights of citizens under the individual countries' constitution;
- Creates false confidence.

No chemical weapons ban is verifiable. Any nation or sub-national group that wishes to produce or retain chemical weapons secretly can do so with very little likelihood of detection. The problem of non-verifiability is exacerbated by the fact that only small quantities of chemical agent may be militarily significant in many scenarios. Many defenders of the CWC readily admit that it is not totally verifiable, but claim that it is sufficiently so. They may even assign a value to its verifiability, such as 50 or 75 per cent. However, there is no credible methodology to derive or percentage of verifiability. If there were, it would probably indicate that the percentage is less than ten. According to the provisions of the CWC, a state party must not develop, produce, acquire (or assist others in acquiring), transfer, stockpile, retain, or use chemical weapons. A party must also destroy its chemical weapons and production facilities.\textsuperscript{227}

Unfortunately, there are very few technologies which can be used to detect cheating in any of these activities.


\textsuperscript{227} Article 1 of the CWC deals with "General Obligations". Art.1 (2) says, "Each State Party undertakes to destroy chemical weapons it owns or possesses, or that are located in any place under its jurisdiction or control, in accordance with the provisions of this Convention". For the complete text of CWC sources include, Conference on Disarmament Document CD/1194, 5 April 1993; Text in 32 International Legal Materials (1993), pp.804-873. Text as corrected and changed, available at <http://www.opcw.org>.
TABLE 1.1: Little or No Detection Possible

- Development of chemical weapons or production capability
- Production of nonclassical (novel) agents
- Production of agent or precursors in a clandestine facility
- Diversion of scheduled chemicals or precursors from declared facilities
- Transfer or receipt of weapons, technology, or materials
- Secret stockpile of weapons, agent, or precursors

TABLE 2.2: Some Likelihood of Detection Possible

- Production of classical agent in declared facilities
- Non-destruction of declared stockpiles or facilities
- Use of chemical weapons

Both tables divided cheating activities into two categories: those for which there is little or no likelihood of detection, and those for which there is some likelihood of detection. The detectability of each "cheating activity" will briefly be discussed below.²²⁷

Development of Weapons or Capability

First, a State Party could cheat by developing chemical agents or weapons, an activity for which there currently are no technical means of detection. Development of weapons or capability can include a host of activities: drawing-board design of chemical compounds; the actual construction, but not use, of chemical weapons facilities; the testing of delivery systems; and even the production of agent itself. For example, the current text of Convention allows up to one ton of any agent to be manufactured to accommodate research on protective equipment. Such a provision could easily be abused. Furthermore, if a nation does not want its weapons-design activities to be observed by others, it can easily hide them. Unless there is a human leak of information about a covert program, no one "outside" will be aware of what is being done to develop chemical weapons capability. However, of all of the ways in which a party to the CWC might cheat, this is the least threatening because it produces no actual weapon or agent. If a state party moves from the planning stages to the actual production of agent, the threat is obviously significantly increased. Thus, the ability to detect such

cheating is particularly important. It is here that the Convention's verification scheme\textsuperscript{129} falls seriously short.

**Production of Nonclassical Agents**

Only substances which appear on the Convention's schedule of chemicals are subject to inspection. This schedule includes only those agents which are considered best for deployment, such as phosgene or hydrogen cyanide, and the key compounds which are used to make them. Mostly World War I vintage, these scheduled agents are also known as "classical agents". Thus, a state party could also cheat by manufacturing "nonclassical" agents. For instance, a cheater could invent a new agent manufactured from chemicals which do not appear on the Convention's schedule.\textsuperscript{230} Alternatively, a cheater could choose to make an agent which has been previously identified, but which has traditionally been rejected due to problems such as inadequate shelf-life or deployment difficulties. The cheater could even choose to weaponize deadly chemicals not usually thought of as "weapons". Inspectors responsible for verifying the CWC regime will have neither the mandate nor the ability to look for unscheduled chemicals.

**Production in a Clandestine Facility**

Even if a cheater prefers to make a classical agent (i.e., one which involves scheduled chemicals), it can do so in a clandestine facility with little chance of being caught. Some people believe that national technical means such as satellite photography, communications intercepts, or air sampling will be able to identify such facilities so that they can be challenge inspected. However, the facts do not support this belief. If a state plans carefully, its clandestine sites and operations will possess neither telltale features which could be revealed in photographs, nor communications which could be intercepted. Furthermore, aerial sampling can pinpoint only those plant sites which happen to be nearby and in operation. Thus even if aerial sampling is permitted by a

\textsuperscript{129} Verification and compliance are essential tools for implementation of arms control and disarmament agreements. Once an arms control or disarmament agreement enters into force, the States Parties are formally bound to comply with its provisions. For the excellent analyses on verification, see Altman, J. and Rotblat, J. (eds.), *Verification of Arms Reductions: Nuclear, Conventional and Chemical* (Berlin: Springer Verlag, 1989); Thomas Schmalberger, n23 pp.191-232. See also, Barnaby, F., *A Handbook of Verification Procedures* (London: Macmillan, 1990).

nation, and such a permission is highly unlikely, its effectiveness is questionable. The reason many people believe that technical means can pinpoint clandestine sites is because of the publicity which surrounded the United States' use of satellite photography to support its claims that Libya's Rabta facility was used for chemical weapons. The fact that photography and other technical means cannot be used to identify chemical weapons facilities was clearly demonstrated by Operation Desert Storm. Despite intensive intelligence gathering the US was unable to ascertain whether it had identified all Iraqi chemical weapons production and storage sites or whether Iraq possessed a chemical warhead for its Scud missiles. It was later discovered that Iraq indeed had such warheads.231 Underground production of chemical weapons may even be safer in some ways than above-ground production. For instance, any accident that might occur would be contained, making discovery less likely and preventing the spread of chemical agent to surrounding areas. Moreover, although the danger to workers in the event of an accident would be high within an underground facility, it would also be high if the facility were above-ground, particularly in countries like Iraq that have low regard for health and safety standards.

**Diversion of Chemicals for Weapons**

The diversion of scheduled chemicals and/or precursors is another major cheating activity for which there is no practical means of detection. During the earlier stages of the CWC negotiations, it was generally believed that accounting procedures could be used to track and measure the feedstocks going into and the products going out of a given facility.232 It was thought that by comparing feedstocks with products, one could determine whether undeclared amounts were being produced or illicit products were being manufactured. However, it is now recognized that accounting is an extremely unreliable means of detecting cheating.

A primary problem with using accounting as a tool of verification is that too much error is introduced by factors such as evaporation, spillage, mismeasurement, and inventory control. For instance, companies with a large throughput of chemical feedstocks and product output can have errors of up to ten percent. And ten per cent of the thousands

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232 For a background information, see *The Chemical Industry and the Projected Chemical Weapons Convention*, SIPRI, no.4 in the CBW Studies Series, 1986.
of tons of key precursors or chemicals which a large plant can handle annually can be a militarily significant amount. Moreover, chemicals made and consumed in secondary products within a given plant would not necessarily appear on lists of feedstocks or products. Another problem with accounting is that it is so easy to manipulate. For instance, let us imagine that a country decides to divert 500 tons of hydrogen cyanide for weapons purposes. Hydrogen cyanide is a common industrial chemical which is also usable as a weapon. The problem of detecting diversion is also complicated by the fact that precursors could be diverted and stockpiled for subsequent use in making agent. For example, Tabun (GA) is made from commodity chemicals produced in vast quantities in many countries, including less developed ones that do not participate in export controls. Of the feedstocks for Tabun, only one, phosphorous oxychloride, is a scheduled chemical.  

**Transfer of Receipt of Illicit Items**

Another cheating activity for which there is little or no likelihood of detection may occur in the transfer or receipt of weapons, technology, or materials. Chemicals bombs, shells, or artillery look just like nonchemical ones, and a country may or may not mark them to tell them apart. For instance, Iraq did not label, number, or color differently its chemical munitions; it relied instead on officers accompanying the weapons from their manufacture to deployment. There are technologies under development that may be able to determine whether a weapon has liquid fill and, possibly, what its composition is. To use such technology, however, one would have to intercept or gain access to the weapons physically.

The flow of technology and materials from one state to another is even harder to detect than the transfer of weaponry.  

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235 It appears in Schedule 3 of the CWC, the list of chemicals that are most common and difficult to monitor. Any country could make phosphorous oxychloride and then, if its stocks of the chemical were found by a challenge inspection, claim that the chemical stockpile was produced because of a bookkeeping error for legitimate manufacturing purposes. Because no actual agent had been made, such a violation would probably cause no repercussions. For an exhaustive list of toxic chemicals and precursors, see Text of the CWC, Schedule 3. Source for text, see no.11.

there is also no way to discern how a delivery of chemicals across state lines will be used. For instance, a recipient may declare that such a delivery is for commercial purposes and then divert the chemicals once in hand. Likewise, a country may purchase some of the thousands of pieces of used chemical production equipment for seemingly legitimate purposes, and then use it for illicit chemical manufacture.

**Keeping Undeclared Stockpiles**

A country could also cheat by maintaining undeclared stockpiles. For example, a country may decide to join the CWC, but to declare only part of its chemical weapons stockpile -- that part which is old, leaky, and non-deliverable. By doing so, it will bolster the confidence of observer nations, who have little or no way of knowing if the quantities of chemical weapons declared are correct. The cheating country might then place its smaller-sized stockpiles in secret locations, or amidst conventional munitions, and plan how it will move the weapons rapidly if a challenge inspection is somehow triggered by a human leak of intelligence. Recent events in the Persian Gulf show how hard secret stockpiles of agent are to find. UN inspectors implementing UN Security Council Resolution 687 -- the verification and destruction of Iraq's weapons of mass destruction and missile delivery capabilities -- were not able to determine whether all Iraqi chemical agent had been declared. They had to be led by an Iraqi to several canisters of chemical agent buried in the sand. One of the inspectors observed later:

"We never would have found them [the canisters] had we not been shown them. It is quite possible that large quantities of mustard agent, which is high enough quality to store well, have been similarly hidden in the desert."  

**Production in Declared Facilities**

Most of the effort to formulate a verification regime for the Chemical Weapons Convention has been focused on the three types of cheating listed in the above-mentioned tables. Whether the first type of cheating -- production of classical agent in

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Interview of UN Inspector by Kathleen C. Bailey (staff of the Director of Lawrence Livermore National Laboratory and a member of the LLNL Center for Technical and Security Studies), March 1992.
declared facilities -- can be detected with any degree of certainly will depend largely on answers to questions still under negotiation, such as:\textsuperscript{236}

- How intrusive will inspections be?
- How sophisticated will detection equipment be, and to what level of sensitivity can it be set?
- How extensive can sampling be?
- How free will inspectors be to open pipes, or to take gaskets or other items?

If these questions are resolved in a manner that gives inspectors maximum access with the highest level of sensitive equipment, there will be a higher degree of confidence in the verification regime. However, problems will remain that will seriously degrade that confidence level.

One of the most serious problems is that there are too many facilities to inspect in too many countries.\textsuperscript{237} Without having to change equipment, piping, or structure, literally thousands of chemical plants will be able to produce classical chemicals or precursors -- particularly when such facilities ordinarily produce organo-phosphorous pesticides. Inspecting them even one time -- let alone on a regular basis -- is impractical. Even if one were to undertake the monumental task of such widespread inspection, two further complications may interfere. A multinational body would probably only be able to reach a guilty verdict based on technical evidence which is not merely strong but overwhelming.\textsuperscript{238}

The ease of using commercial facilities to produce agent without detection can be shown by a hypothetical scenario. Let us say that a European country has decided to produce several tons of Sarin (GB) nerve agent. This country would have access to all feedstocks, as would any industrialized nation. It decides to produce the agent in a

\textsuperscript{236} For a detailed discussion and analysis, see Kathleen C. Bailey, n.234, pp.23-24.

\textsuperscript{237} Ibid., p.24.

\textsuperscript{238} First, detection equipment and international inspectors can easily be deceived. For example, equipments will probably not be able to pick up evidence of illicit activity which ended days or even hours before the detection attempt in instances which involve chemicals similar to those ordinarily produced at the facility, or which entail "designer" decontamination. Likewise, if international inspectors enter a cheating plant, they might be unable to locate the area of illicit production, especially if production and subsequent decontamination have already been completed. Second, even technical readings that indicate illicit activity will not be conclusive enough to prove noncompliance. Detection equipment may pick up "background noise" from the presence of agent-related compounds in a cheating plant, thus, any readings indicating disallowed chemical production will be debatable, and not of "forensic quality". A cheating nation may claim that such readings are faulty regardless of the seeming dependability of the detection equipment and procedures. Ibid.
pesticide facility, one which ordinarily makes a variety of organophosphate products based on PCI3 and P4S10. This facility will use the German Salt Process, which is simple, efficient, and described in unclassified literature.\textsuperscript{259} This process requires no high temperatures, special equipment, or extraordinary conditions for its chemical reactions. Few people and little time will be required to produce a militarily significant quantity of Sarin.

\textit{Nondestruction of Declared Items}

The second type of cheating for which there is some likelihood of detection is in the nondestruction of declared weapons, agent, and facilities. This, however, is the least likely cheating scenario. A nation is unlikely to declare the chemical weapons or agent that it intends to deploy or use. Furthermore, the destruction process is a very transparent operation. One can achieve high-confidence verification of destruction without significant expenditure of resources.\textsuperscript{240c}

\textit{Use of Chemical Weapons}

Verifying the use of chemical agent depends on politics, timing, and technology. First, political issues may determine access to a battlefield or to victims; it will, most likely, be harder to gain access to a battlefield. For example, Iraq would not allow inspectors to enter to investigate charges that chemical agent had been used against Iranian soldiers on Iraqi soil. However, Iran made its victims available to international representatives, primarily because Iran would benefit if Iraq was found to have used chemical weapons. Second, timing is important because agent -- particularly that which is non-persistent -- can dissipate within a few hours. Evidence of death or injury as a result of chemical use also diminishes with time. Third, analytical technology also presents problems in verifying agent use; current technologies that are used to determine cause of death can be inconclusive.\textsuperscript{241} For example, autopsies performed on cadavers believed to have been victims of Iraqi chemical weapons were unable to determine cause of death. Even if a test is developed to identify whether a death is the result of classical chemical agents, such a test may be useless in cases where nonclassical agent is used. However,

\textsuperscript{259} For a detailed and complete list of chemical composition and processes, scientific understanding and analyses, see Peter M. Zapf, "Appendix A: The Chemistry of Organophosphate Nerve Agents" in Benoit Morel and Kyle Olson, (ed.), \textit{pp.279-305.}

\textsuperscript{240c} Kathleen C. Bailey, \textit{n.234p.25.}

\textsuperscript{241} Ibid., p.26.
despite the obstacles to verifying chemical weapons use, it is fairly likely that such use can be detected, particularly if it occurs repeatedly over time. Any nation which decides to use chemical weapons has probably already decided to accept any repercussions of its actions; such was the case of Iraq. Nevertheless, verifcation technologies are needed to provide conclusive evidence of chemical weapons use. If the problems of politics and timing can be overcome, chemical weapons use is probably the most detectable cheating of all. These are major problems connected with the Chemical Weapons Convention. While addressing the implementation measures, these problems have to be taken into consideration. The unprecedented proliferation of the WMD is the major issue throughout the analysis.

The dynamics of the decision-making pertaining to implementation process receives more focus and attention. It involves considerable diplomatic leverage of diplomacy. The nature of the process is rarely clear-cut, and it does not unfold very precisely. The chance of success related to arms control depends on continued high-level attention and a supportive organizational infrastructure. As the decision-making process moves from planning to deciding, organizational and bureaucratic issues can become predominant.242

**CWC's Unprecedented Verification Protocol**

The CWC's verification provisions are built upon a rank ordering of chemicals that placed them on three lists, or schedules, according to their toxicity and military and commercial utility. Schedule One contains 12 military agents and supertoxic chemicals with very limited commercial use.243 Schedule Two lists 14 chemicals that have low to moderate utility in the commercial sector but are considered high risk because they can be used as chemical weapons or precursors to the production of chemical agents. Commercial industry uses large quantities of Schedule Three's 17 chemicals, which have also served as chemical weapons or precursors. A fourth, more generic, category captures "other chemical production facilities", notably those that use discrete organic


243 Two basic types of chemical agents exist. Blister agents, such as mustard gas, attack the Skin, respiratory system, and eyes, causing blistering, blindness and death. Exposure to even minute quantities of nerve agents such as GB or VX can cause vomiting, loss of bladder control, convulsions, coma and death. For a comprehensive appraisal, see Edward M. Spiers, Chemical Weaponry: A Continuing Challenge (New York: St. Martin’s Press, 1989).
chemicals containing phosphorous, sulfur, or fluorine, which are the building blocks of all chemical agents. The existence of this final category acknowledges that with the appropriate modifications, chemical agents, can be manufactured at virtually any commercial facility. The treaty sets mandatory reporting thresholds for the production, processing, consumption, acquisition, import, and export of scheduled chemicals.

With the exception of the monitored use of small amounts of Schedule One chemicals for permitted research, medical, pharmaceutical, and protective purposes, Schedule One chemicals -- the weapons -- are to be destroyed within 10 years after entry force. Use of Schedule Two, Three, and other chemicals will continue within the commercial sector and will be subject to routine inspections, conducted on short notice. The number of routine inspections conducted annually worldwide and within each state will depend on the number of governmental and commercial facilities declared. Routine inspections will initially center on chemical weapon storage and production facilities, but as disarmament progresses the emphasis will gradually shift toward industrial sites. Routine inspections will confirm the consistency of facility operations with the inspected site's data declarations, the absence of Schedule One chemicals, and the non-diversion of scheduled chemicals for prohibited, military purposes. Ostensibly, all areas of a facility are open to the inspection team, but in practice inspections will focus on the areas of a facility where declared activities occur. A standard inspection will include interviewing personnel at the facility, reviewing documentation, photographing items of interest or concern, and sampling from reactor vessels, effluent streams, or bulk storage tanks. A gas chromatograph -- mass spectrometer and other analytical equipment will enable on-site sample analysis, but samples can be sealed, tagged, and transferred to approved laboratories if additional analysis is required.

Manufacture of chemical agents at a commercial facility would entail risks to the health of workers and the public, especially if the appropriate pollution abatement and safety equipment were not employed. Use of such equipment and the presence of unusual levels of security are some of the telltale signs of possible illicit chemical weapons production. See Technologies Underlying Weapons of Mass Destruction (Washington, D.C.: U.S. Office of Technology Assessment, U.S. Government Printing Office, December 1993), pp.15-70.

For example, production of as little as 100 grams of a Schedule One material must be reported, whereas the threshold for reporting production of Schedule Three chemicals is 30 metric tons. See, the Text of the CWC related to "Annex on Chemicals", "Verification Annex" and "Confidentiality Annex".

Treaty parties are allowed to produce 1 metric ton of Schedule One chemicals annually for activities such as the development of vaccines and antidotes against chemical agents and the testing of protective equipment, like gas masks. See the text of the CWC relating to "Annex on Chemicals".
Although data declarations and routine inspections are important, the linchpin of the verification regime is undoubtedly challenge inspections. Any treaty party that suspects another state party of violating the CWC can request a challenge inspection of the suspect site. All treaty parties undertake the explicit obligation to accept challenge inspections. Given no less than 12 hours’ notice before an inspection team arrives, the challenged state must transport the inspectors to the perimeter of the suspect site within 36 hours of their arrival, allowing access inside the perimeter within 108 hours after the team’s arrival in country. Challenge inspections will be guided by a concept known as managed access, which, in principle, allows inspectors enough access to determine whether the site is involved in prohibited activity while also permitting the inspected facility to protect sensitive information that is unrelated to the CWC. The extent of access and the exact nature of inspection activities are subject to negotiation. To safeguard sensitive information, host officials can log off computers, shroud items, limit the number of inspectors entering an area, and restrict the screening of samples to the presence or absence of Schedule One, Two, or Three Chemicals and their degradation products. In particularly sensitive situations, access can be limited to a percentage of buildings and random areas within those buildings. When compiling their report, inspectors will take into account the caliber of the cooperation encountered during the inspection.

Despite such extensive provisions, challenge inspections are not a guarantee that all troubling situations will be quickly resolved. Inspectors may emerge from an inspection with the smoking gum of proof, but, far more often, uncertainties will remain after challenge and routine inspections. High confidence verification of declared CW activities should be readily attainable; for instance, verification mechanisms should be able to confirm that declared CW facilities and stockpiles are destroyed. With increasingly sophisticated analytic techniques, the combination of on-site inspections and continuous instrument monitoring should be able to detect, with fairly high confidence, the use of precursor chemicals in declared civilian chemical industry facilities. By contrast, the likelihood of detecting undeclared CW stockpiles or undeclared illegal

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244 The director of the international inspectorate must initiate the challenge inspection without delay, but a 41-member international governing body will have 12 hours to review and reject the challenge inspection request by a three-quarters vote if it is deemed frivolous, abusive, or beyond the scope of the CWC.

245 For more details, see Marie Isabelle Chevrier and Any E. Smithson in Jeffrey A. Larsen and Gregory B. Smith (eds.), Arms Control Toward 21st Century (London: Lynne Rienner, 1996), pp. 204-205.

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production of CW agent is considerably lower. How much lower would depend on many details: the magnitude of such activities and their ease of concealment; the technical care taken to avoid detection; the possibility of operational mistakes, which might range from undetected spills to failures to clean up evidence of violation; the likelihood of detecting CW weaponization as opposed to production of agent; the modalities of eventual challenge inspection procedures under a CW ban; and, not least, the availability of national human intelligence. Overall, a potential cheater could not totally discount the risk of detection. Despite having considerable time to cover up, violators do make mistakes which challenge inspections eventually expose.

As far as diplomacy is concerned, the issue of verification how can be relevant and significant while addressing implementation measures and related issues. For that matter, to achieve verification objectives, three means are required: (i) detection; (ii) deterrence; and (iii) confidence-building. The three means need a substantial degree of diplomacy and negotiations. It involves trained manpower such as career diplomats, scientists, technicians and legal experts; leadership and decision-making processes so and so forth. Although already pointed out the above-mentioned aspects in detail earlier, some more elaboration is needed. A verification system aims to detect non-compliance. The detection capabilities of a verification system depend on the capabilities of the monitoring means and the speed and skill with which data from such means and other sources can be collected and analyzed. The effectiveness of such elements depends partly on how much the treaty parties are prepared to pay. It also depends on the level of intrusiveness of the detection methods that the parties agree on. Usually in arms control and disarmament agreements there is a rule of reciprocity: While each party wants the maximum intrusiveness into other parties’ affairs, it must accept that this is only likely to occur if it accepts equal intrusiveness.

The degree of certainty of detection that a system aims for will depend on how dangerous non-compliance is considered to be. For most treaties dealing with arms and armed forces, serious non-compliance will be regarded as a threat to national security. Detection must therefore not only be relatively certain but must occur early enough to

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249 For a detailed description, see Lewis A. Dunn, "Making a Global Chemical Weapons Ban Work" in Renoit Morel and Kyle Olson (eds.), pp. 73-94.

250 Ibid., pp. 2-4.
allow for a response, either individually or collectively, by the other treaty parties. Ideally, warning signs of potential non-compliance should be detected before an act of non-compliance has occurred. However, even detection of non-compliance after the event is essential and can be helpful in mounting a response. Monitoring is a crucial part of verification: It is the means by which information is obtained for verification purposes. Monitoring may be done by technical devices and/or by human inspectors. It may seek to obtain a particular type of information, as in the case of seismic monitoring for detecting underground nuclear tests, or, as in the case of remote on-site video cameras, it may seek to detect any activity that is potentially non-compliant. It may be done remotely or on-site, continuously or periodically depending on the requirements of the particular treaty.

The manner in which NTMs are utilized to perform monitoring depends on the nature of the objects and/or activities to be surveyed and on the provisions of the agreement. Certain arms control agreements explicitly identify NTMs as the means by which compliance is to be verified. In this case, an accompanying clause stipulating that the parties are not to interfere with each other's use of NTMs is typically included. This officially sanctioned use of NTMs greatly enhances their capacity to gather pertinent information. Nevertheless, because NTMs generally operate at great distances from the areas of interest, their utility in performing monitoring tasks, is inherently limited. Moreover, within the context of multilateral agreements, worries have been expressed that parties possessing disproportionate NTMs capabilities can have an undue advantage if monitoring is to be performed exclusively by such means. To address these concerns, States have devised so-called cooperating monitoring practices.

Compliance processes for multilateral arms control and disarmament treaties normally proceed through a series of steps of increasing political seriousness. Minor or "technical" infringements may be raised directly with the party by officials from the technical secretariat. More serious questions about non-compliance, drawing on information from the multilateral verification system, may be raised by the head of the verification organization, either directly with the party or through the executive body. In other cases, it is only a State Party that may raise such concerns, either on the basis of information from the multilateral system, the State's own national technical means (NTMs) or a combination of both. NTMs refer to nationally owned instruments for surveying a party's compliance with agreement obligations, without intruding onto its territory, airspace, or national waters. Typically NTMs comprise a wide range of remote sensing devices such as reconnaissance satellites, reconnaissance aircraft, electronic intelligence, radar, seismic stations, hydro-acoustic stations, and infra-sound stations. These sensors detect agreement -- limited objects and/or activities at a distance thereby allowing parties to observe relevant information without intruding, and hence without relying on the collaboration of those being observed. For a comprehensive overview on this, see Steve Tulliu and Thomas Schmalberger, Coming to Terms with Security: A Lexicon for Arms Control, Disarmament and Confidence-Building (Geneva: United Nations Institute for Disarmament Research, 2001), pp.191-232.
The multilateral treaties tend to encourage, in the first instance, direct dialogue to resolve compliance issues. This may be done directly through meetings between the accusing and accused parties, through the good offices of the head of the verification organization, or using treaty forums. The aim is to resolve matters cooperatively and amicably and in the least threatening and intrusive way. If the issue is not resolved, an investigation might be undertaken, either in cooperation with, or independently of, the party concerned. Many treaties provide for an on-site inspection (OSIs) as a last resort, if the non-compliance issues cannot be resolved by other means. OSIs refer to inspections carried out by designated inspectors to verify that particular activities prohibited by an arms limitation agreement are not performed, to check that particular activities prescribed by an arms limitation agreement are implemented, or to examine the nature of a suspicious event. OSIs can be divided into three main categories: Ad hoc inspections, non-challenge inspections and challenge inspections. Continuous monitoring carried out by personnel may also be classified as OSIs. Continuous monitoring is a technique employed to supervise activities at facilities designated by an arms control or disarmament agreement as subject to permanent observation. Continuous monitoring can be carried out by sensors and/or personnel. Sensor is a device that converts emitted or reflected energy into a signal that can be further processed. The energy can take different forms such as nuclear, seismic or electromagnetic radiation ranging over a broad spectrum of wavelengths including radar, radio, infra-red, visible light, ultraviolet, X-rays, and gamma rays, or ground

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Ad Hoc inspections" can be used in different ways for various agreements. In some cases, it refers to a form of on-site inspections conducted on an unpredictable basis. Such inspections are typically applied in combination with routine inspections. Their aim is to enhance the capacity of a verification regime to detect non-compliance with treaty obligations by subjecting declared facilities to the possibility of unexpected (i.e., non-routine) inspection. In other cases, such as under the International Atomic Energy Agency safeguards system, ad hoc inspections are carried out in the initial period of a treaty’s application, prior to further negotiations on detailed implementation approaches at specific facilities. Non-challenge inspections are type of on-site inspections carried out as part of the normal course of monitoring compliance with agreement provisions. Non-challenge inspections are conducted at regular intervals and possibly also on an ad hoc basis, and carry no implications of alleged misconduct. They are the most common type of on-site inspections, and are typically applied in combination with data declarations, and possibly challenge inspections. The most common type of non-challenge inspections are routine inspections which conduct periodically. Challenge inspections is conducted at very short notice. Challenge inspections are carried out upon request by a State Party or an institution responsible for the implementation of monitoring tasks. Typically challenge inspections are applied in combination with routine inspections and possibly ad hoc inspections. Depending on the provisions of the agreement, the party on whose territory the inspection is to take place may or may not have the right to refuse the request. Challenge inspections are included in the verification provisions of a number of treaties. (Source: Steve Tulliu and Thomas Schmalberger, n. 255, pp.213-52).
vibrations, sound, heat and so on. Sensors can be either attended or unattended, and can be fitted to a wide variety of air, ground, and sea platforms. In more technical language sensors are sometimes referred to as transducers.

When carried out by personnel, continuous monitoring is considered to be a form of on-site inspection. A typical example of continuous monitoring is portal monitoring which means a technique employed as part of continuous monitoring whereby all vehicles and rail cars that enter and exit the main gate of a designated production facility are subject to continuous surveillance. Provisions for continuous monitoring are included in the Intermediate Range Nuclear Forces (INF) treaty and the Strategic Arms Reduction Treaty (START I) both of which provide for the application of portal monitoring at specified production facilities. The IAEA also uses continuous monitoring as part of its safeguards system. OSIs are often used to supplement data declarations/exchanges which are information reports released by States Parties on matters relevant to the provisions of a treaty. Typical data declarations report on the location, number, characteristics and status of treaty-limited equipment, and the schedule and details of restricted activities. Data declarations can be exchanged either directly by individual parties or through an international organization. They are part of several bilateral and multilateral treaties including the Strategic Arms Limitation Treaty (SALT-II), the Intermediate range Nuclear Forces (INF) Treaty, the Conventional Forces in Europe (CFE) Treaty, the Strategic Arms Reduction Treaty (START-I), and the Chemical Weapons Convention (CWC). Together, the continuous monitoring and data declarations form the main instruments of cooperation monitoring.

The application of OSIs requires the mutual consent of all parties. In case of the CWC, OSIs are the care of the verification system. Although irreplaceable, their contribution to the verifiability of the CWC has limits. OSIs are very poor instruments of first detection of a circumvention. The world of chemical manufacturing is so vast that the probability of an OSI accidentally detecting a treaty violation is negligible. On the other hand, OSIs, are irreplaceable when it comes to establishing beyond a reasonable doubt whether a suspicion is justified. OSIs, can also act as a deterrent: the threat of a random inspection could discourage potential violators. Generally OSIs are

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\(^{254}\) Ibid., p.215.

\(^{255}\) For a detailed understanding, See Benoit Morel, n.24, p.220-22.
considered to be one of the most intrusive instruments of verification, and hence tend to be among the most contentious measures to negotiate, and, as demonstrated by the experience of the United Nations Special Committee (UNSCOM), to implement.\textsuperscript{256} OSIs are problematic because they must have a very low probability of missing a violation (reporting a "false negative") \textit{without} being too intrusive. The demand for a low false negative seems to require that inspectors be granted adequate access. But OSIs are also the main interface between the convention and the real world. Their degree of intrusiveness is a source of concern. They can become a means of exposing or leaking valuable confidential information irrelevant to the Convention. OSIs could become a legitimate source of suspicion and may make the CWC a costly threat to manufacturing secrets. To be conclusive, OSI do not necessarily need \textit{unlimited} access.\textsuperscript{257} There is not a linear relation between degree of intrusiveness and quality of conclusion. Above a certain level of intrusiveness, there is a diminishing return, together with an accelerating increase in cost.

Monitoring techniques involving National Technical Means (NTMs) and cooperative measures are not mutually exclusive. In some cases, the implementation of cooperative monitoring actually relies to a great extent on the use of NTMs. Sometimes, as part of cooperative monitoring, the parties may even agree to facilitate the use of NTMs by openly displaying treaty -- limited equipment for observation.\textsuperscript{258} In addition, certain verification arrangements stipulate that data obtained through the authorized use of NTMs be made available to all the parties upon request, while others rely in past on data gathered through NTMs for the conduct of cooperative analysis. Monitoring collects information with respect to the implementation of agreement provisions by the Parties. The information obtained from monitoring is then analyzed and used to determine whether non-compliance has occurred. As with monitoring, depending on the

\textsuperscript{256} For a detailed discussion on verification issues at the UN level, see, United Nations, \textit{Verification in All its Aspects: Study on the Role of the United Nations in the Field of Verification} (UN Document A/45/372, 28 August 1990); United Nations, \textit{Verification in All its Aspects, including the Role of the United Nations in the field of Verification} (UN Document A/50/377, 22 September 1995).


\textsuperscript{257} See Beno\^ir Morel, n.96, p.221.

\textsuperscript{258} Chemistry is a research-intensive area, and new compounds are being discovered every day. So far only very few have been weaponized, but in the future new compounds may be of concern for the Convention. NTMs employed as part of cooperative monitoring are either decided upon on an ad hoc basis through consultations between the inspecting and inspected parties just prior to the carrying out of the inspection, or are specified a priori in the verification clauses of the agreement. For an overview and discussion, see Steve Tulliu and Thomas Schmalberger, n.225, p.195.
provisions of the accord, data analysis may be carried out either unilaterally or multilaterally. Typically international organizations responsible for implementing cooperative monitoring, will also perform the requisite analysis. In any event, irrespective of the actual modalities for analyzing the data, the determination of non-compliance is the prerogative of the Parties. If after a process of monitoring and analysis a Party is deemed to be in breach of its agreement obligations, the matter may be referred to a compliance mechanism. Some agreements provide for consultation procedures which allow the parties to confer with a view to resolving differences by reaching mutually acceptable solutions about how to rectify causes of concern. Others refer: disputes over compliance to a designated international authority such as the United Nations Security Council (UNSC) or the International Court of Justice (ICJ), for arbitration. When a suitable international arbitrator is not available, an alternative course of action is for the Parties to act to attempt to reverse non-compliance. As a last recourse, the Parties may suspend or even abrogate their participation in the agreement.

Chemical Weapons Convention (CWC): An Appraisal

The major developments that led to finalization of the CWC are as follows: The end of the Cold War increased mutual trust and confidence among States; the positive factors which included changes in the US negotiating position; the collapse of the Soviet Union; the outcome of the 1991 Persian Gulf War (which clearly demonstrated that Chemical Weapons are no longer politically desirable), and not least the clear political will of the majority of States to totally prohibit Chemical Weapons. The CWC is an historic agreement, banning all Chemical Weapons worldwide, imposing a wide spectrum of inspections to verify the ban, outlawing any use of these weapons (a goal previously established by the 1925 Geneva Protocol) and imposing a strict ban on all activities to develop new chemical weapons. The CWC is a major disarmament and arms control achievement constructed as a balance between the rights and obligations of States Parties and between benefits and costs. It is also a multilateral agreement where States Parties will benefit from a better security environment and from sharing the cost for facilitating compliance monitoring and verification activities. Looking to the

\(^{259}\) ibid., pp.195-96.

future, one can envisage a host of new arms control measures within regions, ranging from confidence-building measures to the kind of elaborate mechanisms that characterized the late phases of Superpower negotiation.\textsuperscript{261}

According to the last Chairman of the \textit{Ad hoc} Committee on Chemical Weapons, Ambassador Adolf Ritter von Wagner of Germany,\textsuperscript{262} the achievements of the CWC are the following: First, a non-discriminatory approach has been achieved by applying the general obligations to each State Party on equal basis. The Preamble and General Obligations (Article 1) of the CWC outline the total ban on chemical weapons and all of the activities which are prohibited by the CWC. Second, the CWC balances substantial verification, by the use of provisions providing sufficient deterrence against any potential violator, with protection of national security interests, by application of a mechanism which allows suspicions to be transformed from a bilateral concern to multilateral verification undertaking. Third, the rights of individual States Parties are also balanced against multilateral Convention obligations by applying verification procedures in such a way that they do not interfere with national security concerns unrelated to the CWC. Fourth, there is a balance between the interests of industrialized and less developed States, which have expressed interest in promoting increased cooperation under the CWC, by the obligation that States Parties review any restrictive measures, including export controls, in the field of chemical industry with the aim of removing such restrictions for States Parties which are in full compliance with their Convention obligations. Fifth, the difficult problem of membership on the Executive Council was solved by allocating seats to different regional groups. There was awareness that the majority of States Parties will be less developed countries. The interests of the industrialized countries were served by introducing the approach of so-called industrial seats (i.e., in each group countries with the most significant national chemical industries will be given special consideration). Sixth, the CWC also addresses the difference between Chemical Weapons (CW)-possessor states and non-possessor states by limiting the destruction period to ten years (in exceptional cases an extension may be granted). Possessor states are obliged to share destruction and verification costs.

\textsuperscript{261} See for example, Shelley A. Stahl and Geoffrey Kemp (eds.), \textit{Arms Control and Weapons Proliferation in the Middle East and South Asia} (Washington, D.C.: Carnegie Endowment for International Peace, 1992).

\textsuperscript{262} Ambassador von Wagner was appointed by the Conference on Disarmament (CD) as Chairman of the \textit{Ad hoc} Committee on Chemical Weapons at its Plenary meeting on 21 January 1992 and served as its last Chairman. The Committee held 32 meetings from 24 January to 26 August 1992.
Any extension of the destruction period must be compensated by greater openness and an increased number of inspections.

Further, multilateral mechanisms intended to be more global in scope are difficult to envision, as there is today no single class of weapons likely to lend itself to global consensus on deep cuts or elimination. The CWC could have an important effect on future arms control measures. That effect might be evolutionary, reflecting the accretion of experience and of new challenges. But it might be revolutionary, reflecting a complete rethinking of the ingredients of effective control. The decades-long pursuit of Chemical Weapons (CW) disarmament has shaped a strong political consensus on the need for a total and complete elimination of chemical weapons by concluding a global Convention. This consensus is unique: there exists no similar agreement on any other type of modern weaponry. As far as nuclear weapons are concerned, the countries possessing such weapons seem to favour their retention, at least as part of a minimum deterrence posture, and, therefore, only reductions -- albeit increasingly deep and innovative ones -- have been and are under discussion. Talks on conventional armaments have seriously dealt only with the limitation on such weapons at a regional level, particularly in Europe. The most important contribution to the consensus in favour of total elimination of chemical weapons, prior to the actual signing of the CWC, was made by the Conference Against Chemical Weapons held in Paris in 1989. This unprecedented forum attended by 149 states not only reaffirmed "the continued validity" of the 1925 Geneva Protocol, but also unanimously recognized the need for concluding, at the earliest date, a Convention on the prohibition of the development, production, stockpiling and use of all chemical weapons, and on their destruction. The Paris Conference also codified the main parameters of the future Convention: it should be global, comprehensive, effectively verifiable, and of indefinite duration.

As far as the CWC, four possible implications stand out. The first relates to verification. The monitoring activities of The Hague-based Organization for the Prohibition of Chemical Weapons (OPCW) are significant and far-reaching than those

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For a detailed discussion, see, Brad Roberts, "The Chemical Weapons Convention and World Order" in Benoit Moel and Kyle Olson (ed.), n.264, pp.4-8.
of the Vienna-based International Atomic Energy Agency (IAEA) and could have some positive effective in accustoming these states to openness about activities with potential military aspects. More significantly, the challenge inspection provision of the Convention could have a decisive effect on the willingness of states to either broaden or narrow such rights under future treaties. The CWC does not solve all of the problems related to verification, improvement of future international cooperation and exchange of chemical products, technology and know-how. The consensus which was ultimately achieved involved compromise on the part of many States. The second implication relates to treaty compliance mechanisms. The CWC has elaborated a set of mechanisms that carves out new ground beyond existing mechanisms in the current set of multilateral global treaties. The Geneva Protocol of 1925 relies solely upon the authority and skill of the United Nations Secretary General to determine and enforce compliance. The Biological Weapons Convention (BWC) vests such authority in the Security Council. The Nuclear Non-Proliferation Treaty (NPT) has a more far-reaching set of mechanisms, including the IAEA inspectorate, a United Nations Security Council resolution to enforce compliance reinforces such measures. The third implication relates to the role of industry in arms control. Arms control of the 1960s, 1970s, and 1980s addressed standing nuclear or conventional forces. Both the NPT and the Biological Weapons Convention addressed industrial capabilities beyond weapons programs but, because the former focussed quite narrowly on a few critical facilities and because the latter lacks any inspection provisions, neither had significant implications for the relevant industry. With the Intermediate Range Nuclear Forces (INF) and the Strategic Arms Reduction Treaty (START) agreements, commercial production facilities began to fall within the purview of arms control. The CWC is the most far-reaching agreement to date in terms of its implications for a virtually global industry. The final implication of the CWC for the future of arms control relates to the flexibility of the treaty itself. Those States who have participated actively in the negotiations have made decisions about their national interests as they relate to specific provisions of the treaty with an eye toward the larger world; for example, tough verification has been seen as necessary to deal with the Soviet threat and universal adherence as necessary to deal with the proliferation threat. But because the world is changing so rapidly and fundamentally, some rethinking of the national interests and provisions should be seen as likely.
The CWC takes an approach to balancing national and multinational costs and benefits which is unique in the history of disarmament. On the one hand, individual States Parties must provide declarations, adopt general measures for disclosure, open their chemical industry, accept the rules for challenge inspections and pay costs related the CWC. On the other hand, they benefit by increased security, confidence and international behaviour. The complete range of the CWC working covers the following aspects: the problems and implementation issues of the CWC; the chemical weapons ban; the long-term future of the CWC; the perspective of the Western chemical industry vis-a-vis rest of the world and issues relating to chemical industry; implementation measures of individual countries in accordance with the constitutional norms; the future of US approach towards the CWC; verifiability, enforceability and on-site inspections; the issue of sanction; the organizational structure; verification regime; the working of Preparatory Commission and entry into force procedures; and the CWC and world order in the post-Cold War scenario in relating to international security. There are other benefits including better prospects for trade in chemical products and technology, specific protection against chemical weapons and a provision for international assistance.

The Hague-based Organization for the Prohibition on Chemical Weapons (OPCW) which oversees and supervises all aspects of implementation of the CWC. The Preparatory Commission is responsible for the organization of the Convention and also assumes major tasks and responsibilities for developing all of the procedures for the OPCW. States Parties which are still uncertain about joining the CWC may be influenced by the desirability of participation in the early organization of this process.

The CWC is a security agreement, a form of collective protection against a particular type of threat. The CWC clearly reflects the ways states have assessed that threat -- how they judged the military and political usefulness of toxic weapons both to themselves and to potential adversaries. The course of the negotiation is likewise explicable in terms of how those assessments varied from state to state over the quarter-century of intergovernmental talks. The long-term success or failure of the CWC is connected to a set of issues that extend well beyond the existing regime itself.