Chemical and Biological Warfare: Medical Effects and Consequences

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The threat to mankind posed by chemical and biological weapons rivals that of nuclear weapons. However, sophisticated delivery systems are not essential to chemical warfare, and consequently, the threat of sabotage may be much greater than is the case with nuclear weapons. The author traces the development and incidence of synthetic chemical warfare from its roots in the fourth century B.C., through the nerve gases discovered after World War I, to the military use of psychochemicals. He then discusses biological or bacteriological warfare, especially the military use of microbial toxins and mycotoxins, the "Yellow Rain" issue, and defoliants such as "Agent Orange". In the author's opinion, the health care systems of developed nations would be virtually nonfunctional in the aftermath of a war fought with chemical or biological weapons. Developing countries would be affected even more seriously. The long term effects to survivors are far from clear, but enough is known that public concern and action, prompting legal control of such weapons, must be aroused before man's own technological sophistication leads to the destruction of himself and his world.

La menace pesant sur la race humaine à travers les armes chimiques et biologiques rivalise celle des armes nucléaires. Toutefois, les armes chimiques ne requérant pas d'appareillage sophistiqué, le danger de sabotage est beaucoup plus grand dans leur cas. L'auteur décrit l'évolution et l'impact de la guerre chimique et synthétique de ses débuts au 4e siècle av. J.-C., en passant par le développement des gaz de combat après la première guerre mondiale, jusqu'à l'utilisation de produits psychochimiques à des fins militaires. Il traite ensuite de la guerre biologique ou bactériologique en mettant l'accent sur l'utilisation à des fins militaires des toxines microbiennes et des mycotoxines, de la question de la "Pluie jaune" et des défoliants tels l'"Agent orange". Selon l'auteur, les systèmes de soins médicaux des pays développés seraient inefficaces après une guerre où des armes chimiques ou biologiques auraient été utilisées. Les pays en voie de développement seraient encore plus sérieusement affectés. Les effets à long terme sur les survivants sont loin d'être connus mais nous en savons assez pour réaliser l'urgence de mobiliser l'opinion publique afin d'accélérer le contrôle juridique de telles armes avant que le développement technologique de l'homme ne le conduise à sa propre destruction et à celle de son milieu.

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Synopsis

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In cataracts of fire, blood, & gall,
In whirlwinds of sulphurous smoke,
And enormous forms of energy,
All the seven deadly sins of the soul
In living creations appear'd,
In the flames of eternal fury.

— William Blake[1]

Introduction

Chemical and biological weapons pose a threat to large segments of mankind, including civilians, equal to that of nuclear war. Large scale, or even limited, use of modern toxic agents can kill hundreds of thousands of people in large cities within minutes, can cause illness that would completely overwhelm existing health resources even in the most economically developed country and can prompt unpredictable and long-lasting changes in our environment. If one survives the initial toxic effects, the long term effects may result in greatly increased chances for carcinogenesis, fetal malformation and mutations. Large scale use of defoliants — enviromental war — would threaten the ecology of the entire planet.

[1] *The First Book of Urizen*, ch. III, v. 2 (Boulder: Shambhala Publications, 1978) 47.

Chemical warfare differs from nuclear warfare in that sophisticated weaponry is not essential for delivery, and sabotage attacks, particularly with biological agents, can cause widespread death to man, animals and plants. Most of the agents cannot be tested before use, so the consequences cannot be predicted with any degree of accuracy. This paper reviews briefly the types of chemical agents that have been developed for military use and discusses biological weapons, including not only disease-producing organisms, but also microbial toxins, molecular cloning products and defoliants. Binary nerve gas bombs, Yellow Rain and Agent Orange have been much in the news and in debate in recent years, but a general understanding of the medical effects of chemical and biological warfare agents has yet to develop. In conclusion, discussion will centre on the impact of chemical warfare on health care systems. Public concern and action against this form of warfare should equal that sparked by nuclear weapons. The widespread use of chemical and biological weapons would decimate civilian populations and destroy the fabric of humanity. I do not purport to recommend any particular legal solutions to these crucial problems. Rather, it is my concern to alert the legal community to the dangers posed by chemical and biological weapons, and to urge my legal brethren to deal with these issues seriously and with haste.

I. Chemical Weapons

Although chemical warfare has been reported often in recorded history, it is only in the twentieth century that potent chemical agents derived from industrial chemistry were utilized in military actions.[2] The early agents can be classified under four groups: smokes which obscure vision; gases and toxic chemicals which affect vital physiological functions; flame agents and incendiaries which maim through skin and flesh burns; and riot-control chemicals.

A. *Early History of Chemical Warfare*

Suffocating gases from burning pitch, resins and sulfur were used in the Peloponnesian War between Sparta and Athens in the fourth century B.C.

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[2]The most complete monograph on the history of militarily important chemicals is Stockholm International Peace Research Institute [SIPRI], *The Problem of Chemical and Biological Warfare* [:] *A study of the historical, technical, military, legal and political aspects of CBW, and possible disarmament measures* (1971-82) vols 1-13. For several informative books of a less technical nature, see J. Rothschild, *Tomorrow's Weapons, Chemical and Biological* (1964); S. Hersh, *Chemical and Biological Warfare* [:] *America's Hidden Arsenal* (1968); R. Harris & J. Paxman, *A Higher Form of Killing* [:] *The Secret Story of Gas and Germ Warfare* (1982); and Bertrand Russell Peace Foundation, *The Threat of Chemical Weapons* (1982).

Combustible chemical mixtures, known as Greek Fire, were used as incendiaries in land and sea battles into the Middle Ages. American Indians used incendiary arrows. King Charles XII of Sweden used smoke from burning damp straw while crossing the Dvina River in the war against the Polish-Saxon army in 1700. The large scale burning of sulfur was proposed at the siege of Sevastopol in the Crimean War in 1855, but the British Government would not permit it. During the United States Civil War, the use of chlorine in artillery shells by the Union forces was proposed in 1862 but rejected by the Government.[3]

Diatomic chlorine gas, with its powerful asphyxiating and lung irritant action, was used as a weapon, with devastating effect, in the spring of 1915 by the Germans in their surprise attack on the British and French lines in the Ypres salient, Belgium.[4] This attack ushered in the modern era of chemical weaponry and gas warfare. Triggered by initial success and by the rapid improvements in methods of protection against chlorine which soon followed, a range of new, far more toxic, agents were synthesized and brought into military use. Mustard gas,[5] a powerful blistering agent, was used in the battlefields of Flanders in 1917 followed by phosgene and the arsenical vesicants Lewisite and ethyldichlorarsine.[6] Many other agents had been developed by 1919 and plans made by both allied and axis powers for their use in artillery attacks. In March 1918, mustard gas casualties in the Ypres-San Quentin area of France totalled over 7,000, although there were less than 100 deaths. Statistics for the entire period of the war showed that 12,000 tons of

[3] For other examples, see R. Clarke, *We all Fall Down; The Prospect of Biological and Chemical Warfare* (1968); and "Chemical Warfare" in *Encyclopedia Britannica* (1959), vol. 5, 353-8 and references therein.

[4] The LD_{50} (dose causing a fifty *per cent* death rate) for mice by inhalation of chlorine is 137 parts *per* million. Inhaled by man at a concentration of 1 part in 10,000 by volume, it can cause fatal pulmonary edema in minutes. Actually, the French used tear-gas grenades in August 1914 and the Germans in October 1914 and January 1915 used the eye irritants dianisidine chlorsulfonate and xylyl bromide but these military actions were not successful.

[5] 2,2'-dichlorodiethyl sulfide, also called Kampfstoff "Lost" or Ypérite.

[6] Useful chemical and toxicological information on these chemicals and many others mentioned *infra* can be found in M. Windholz, ed., *Merck Index* [:] *An Encyclopedia of Chemicals and Drugs*, 9th ed. (1976). For an important account of the biochemical toxicity of arsenicals see Dixon & Needham, *Biochemical Research on Chemical Warfare Agents* (1946) 158 Nature 432. The Chemical Agent symbol for sulfur mustard is HD. A mixture of HD with 1,2-bis(2-chloroethylthio)ethane is HQ and with 2-bis(2-chloroethylthio)ether is HT. HQ and HT are more toxic, more vesicant, have a lower melting point, and are more persistent than HD. Nitrogen mustard gas analogues were not synthesized until 1935 by K. Ward. See Ward, *The Chlorinated Ethylamines — A New Type of Vesicant* (1935) 57 J. Am. Chem. Soc. 914. They were tested in World War II. The Chemical Agent names are HN3, tris(2-chloroethyl)amine; HN2, N-methyl-2,2'-dichlorodiethylamine; HN1, 2,2'-dichlorotriethylamine.

mustard gas caused 400,000 casualties.[7] Concentrations of the gas on the ground can cause long-lasting contact hazards. Sulphur mustards, like their counterparts the nitrogen mustards, react covalently with the DNA of the cell and can induce serious genetic mutation. No effective antidote is available for mustard gases.[8]

It is useful to review briefly some of the medical effects of the chemical agents available in large quantities by the end of the First World War. The asphyxiants or choking gases, of which phosgene and diphosgene, which smell like new-mown hay, are the most lethal, irritate the respiratory system causing coughing, difficulty in breathing, feelings of suffocation, and severe chest pain. The duration of hazard is short because the gas combines rapidly with water to form carbon dioxide and hydrochloric acid. In severe exposures, the acid in the lungs causes rapid constriction of the bronchioles and acute lung inflammation follows leading to pulmonary edema and death. Victims drown in the fluid that gushes into the lungs. Blister gases, or vesicants, in liquid or vapor form are absorbed by the skin, particularly when moist, and by the mucous membranes causing inflammation, burns, blisters, and skin destruction. These compounds are broken down by water only gradually and because they persist up to two weeks on the ground, on vegetation and equipment, they pose long-lasting contact hazards. Severe exposure can cause lung inflammation, bronchospasm and death. Sneeze gases, tear gases and vomiting gases are in the class of short term incapacitants and harasssing agents which can be used by the military and by police in cluster bombs and bomblet dispensers. They have a temporary action rarely

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[7] These figures do not indicate deficiencies in toxicity of mustard gas, but rather inefficiency in distribution of the vapor which is 5.5 times heavier than air. See L. Fieser & M. Fieser, *Organic Chemistry* (1944) 68-70. Figures given for the total gas casualties range from 800,000 to 1,300,000.

[8] It is worth mentioning that the brilliant biochemist, the late Sir Rudolf Peters, working as a young man with the team at the Chemical Defence Experimental Establishment at Porton on the Salisbury Plain in Britain, became concerned in 1917 with the horrible effects of gas warfare and particularly of the arsenicals. He was to return to the "arsenic problem" at the start of World War II, and soon afterwards he discovered that 2,3-dimercaptopropanol BAL, Dimercaprol, British Anti-lewisite could remove arsenic groups from thiols and could reverse the toxic action of Lewisite on the pyruvate oxidase system in the brain. These results were soon extended to human treatment. The research on BAL was one of the best kept secrets of World War II. It was the first antidote conceived on logical biochemical grounds, and its discovery was a classic in the relatively new field of biochemical pharmacology. For details of the BAL story which came in the open literature after the war, see Peters, Stocken & Thompson, *British Anti-Lewisite (BAL)* (1945) 156 Nature 616; Waters & Stock, *BAL (British Anti-Lewisite)* (1945) 102 Science 601; R. Peters, *Biochemical Lesions and Lethal Synthesis* (1963); and Peters, *The Biochemical Lesion and its Historical Development* (1969) 25 Brit. Med. Bull. 223.

causing death.[9] Systemic poisons like hydrogen cyanide and the fumigant cyanogen chloride have extremely rapid paralyzing effects but have little value as warfare agents because of their low density relative to air and their volatility.

Efficient incendiary bombs, flame throwers and flame land mines containing Napalm were not developed until 1942, but were used towards the end of World War II, in the Korean conflict, and particularly in the gruesome actions of the Vietnam War.[10] The name derives from the mixture of aluminum soaps of *na*phthenic acid and *palm*itic acid, from coconut oil, used for the preparation of extraordinarily inflammable gasoline gels. The Napalm B used in Vietnam contains, instead of the fatty acids, polystyrene — which makes it stick to the skin as it burns. White phosphorus has been used since World War I as an effective casualty agent and as a screening smoke. Bombs and grenades loaded with phosphorus, when exploded, spread burning fragments which, on contact with human skin, cause painful flesh burns that continue to burn under water and are very slow to heal.

B. *Nerve Gases: the 1930s to the Big Eye Bomb*

After World War I, chemical warfare research and the development of chemical warfare agents, as well as defence measures against them, continued unabated by all the major world powers. The increasing political uncertainties, unrest and conflicts throughout the world — in China, Ethiopia, Spain, and Germany — in the 1930s stimulated the formation of teams to discover new and "secret" gases. Stimulated by the research presented in a paper by Lange and von Krueger in 1932[11] on the synthesis of alkyl-fluorophosphonates in which it was noted that inhalation of the vapors

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[9] Examples are diphenylchloroarsine (Clark I), diphenylcyanoarsine (Clark II), 10-chloro-5,10 dihydrophenarsazine (DM, adamsite), chloracetophenone (CN), o-chlorobenzylidenemalononitrile (CS), α-bromobenzylcyanide and xylyl bromide. Agent CS2 is CS treated with a silicone water repellent and can persist for up to forty-five days. For further details, see World Health Organization [WHO], *Health Aspects of Chemical and Biological Weapons* (1970) 51-5. Phosgene and related gases are today not considered important CW agents. See also T. Puro, E. Magaha, *et al.*, "Chemical Warfare" in Kirk-Othmer, *Encyclopedia of Chemical Technology*, 2d ed. (1964), vol. 4, 869; and B. Harris, F. Shanty & W. Wiseman, "Chemicals in War" in Kirk-Othmer, *Encyclopedia of Chemical Technology*, 3d ed. (1979), vol. 5, 393.

[10] For a medical analysis of the effects of Napalm, see Reich & Sidel, *Current Concepts* [:] *Napalm* (1967) 277 New Eng. J. Med. 86. Harvard chemists headed by L.F. Fieser synthesized Napalm. See Fieser, *Napalm* (1946) 38 Indus. & Eng. Chem. 768.

[11] W. Lange & G. v. Krueger, *Uber Ester der Monofluorphosphorsäure* (1932) 65 Ber. Deutsch. Chem. Ges. 1598.

led to difficulty in breathing, disturbance of vision and even loss of consciousness, a British research team was set up during World War II under McCombie and Saunders. They synthesized DFP [12] and tested its toxicity on small laboratory animals. The results were startling and alarming. Although exposed to vapors in the order of one part *per* million for only short periods, animals were dead within ten minutes. Human volunteers exposed to trace doses as a vapor in testing chambers developed long-lasting constriction of the pupils. The experimental studies initiated then by Adrian, Feldberg and Kilby, published in 1947, showed that these fluorophosphonates inhibited certain chemical processes at specific nerve cell junctions, thus blocking neurotransmission at those junctions throughout the body.[13] Such interruptions at these junctions can cause, amongst other symptoms, widespread paralysis or loss of muscle tone. Another Cambridge group, under Mackworth and Webb, showed in 1948 that DFP inhibition of neurotransmission was progressive and irreversible.[14] Because of their selective high toxicity to the nervous system, these compounds became known as "nerve gases".

At the end of the war, interrogation officers visiting Germany found that a great deal of research on new insecticides had been carried out by Gerhard Schrader since 1934 in the research laboratories of the I.G. Farben Industries Group in Leverkusen. About 2,000 compounds were made, many of them having potent insecticidal activity. One compound, first named Bladan, contained as the active constituent, TEPP,[15] which was particularly effective against aphids but also highly lethal to mammals in microgram doses. The reports published in the now-famous documents of the British Intelligence Objectives Committee, and Schrader's own account, contain an astonishing number of compounds, three of which had such extreme toxicity to mammals that, in Germany towards the end of the war, plants capable of producing one hundred tons or more a month for nerve gas warfare were built.[16] In the

[12] Diisopropylfluorophosphonate, Isofluorophate. For a general review, see B. Saunders, *Some Aspects of the Chemistry and Toxic Action of Organic Compounds Containing Phosphorus and Fluorine* (1957). The first open report was McCombie & Saunders, *Alkyl Fluorophosphonates: Preparation and Physiological Properties* (1946) 157 Nature 287.

[13] Adrian, Feldberg & Kilby, *The Cholinesterase Inhibiting Action of Fluorophosphonates* (1947) 2 Brit. J. Pharmacol. 56.

[14] Mackworth & Webb, *The Inhibition of Serum Cholinesterase by Alkyl Fluorophosphonates* (1948) 42 Biochem. J. 91.

[15] Tetraethylpyrophosphate, Nifost. The LD_{50}, orally in rats is 1.1 mg/kg. Another compound, p-nitrophenyl diethylthophosphate (E.605, Parathion) was more stable and less toxic to mammals than its analogue p-nitrophenyl diethyl phenyl phosphate (E.600, Paraoxon) and was useful against insects resistant to DDT. Parathion is converted into Paraoxon by liver enzymes.

[16] See British Intelligence Objectives Sub-Committee, *The Development of New Insecticides* (1947) 714 (Final Report); British Intelligence Objectives Sub-Committee, *The Development of Methods and Materials for the Control of Plant Pests and Diseases in Germany* (1946) 1095 (Final Report). For further information on the chemistry and toxicology of more recent

postwar years, defence research organizations all over the world continued chemical syntheses of these toxic substances later known as G-agents.[17] A new series of compounds, the V-agents, were developed after the war and were given code names V.E., V.M. and V.X.[18] V.X. was developed in 1955 during the manufacture of the insecticide Amiton. This compound is probably the most lethal synthetic chemical, both to man and animals, discovered to date. Much of the information regarding the chemistry and toxicology of the V-agents is classified.[19] Plans exist in the United States for the development of so-called binary nerve gas weapons and binary artillery shells or "Big Eye Bombs". Indeed, limited production may already have begun. These weapons make use of non-lethal chemicals stored in casings with two separate compartments divided by a membrane before delivery. When combined on activation within the bomb, they produce clouds of lethal nerve gases.[20] This is obviously a direct application of the principles of nuclear detonation to chemical warfare. Facilities for the manufacture and storage of these weapons in the United States have been reported to exist at Pine Bluff Arsenal, Arkansas; at Toole Army Base and the Dugway Proving Grounds, Utah; and at the Rocky Mountain Arsenal near Denver, Colorado.

All the nerve gases are potent irreversible inhibitors of the enzyme acetylcholinesterase. This results in the accumulation of acetycholine in the central nervous system, and elsewhere. As a consequence, exposure causes a

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compounds, see E. Spencer, ed., *Guide to Chemicals Used in Crop Protection*, 7th ed. (1982) (Canadian Government Publishing Centre, Supply and Services Canada).

[17] G-agents are alkyl esters of methylphosphonofluoridic acid (Saran GB, Soman GD) or ethyl N-methylphosphoramidocyanidate (Tabun GA). The code, G-agents, derives from the markings found on captured German containers of Tabun. Detailed accounts of G-agents and V-agents can be found in United States Dep't of the Army, Field Manual 3-9; United States Dep't of the Air Force, Field Manual 355-7; United States Government, *Military Chemistry and Chemical Compounds* (1975) (U.S. Government Printing Office); and R. Sterlin, V. Yemel'yanov & V. Zimin, *Chemical Weapons and Defense Against Them* [1975] Khim. Oruzhiye i Zashchita ot Nego. For an excellent early account of the pharmacology of Tabun and related compounds, see Holmstedt, *Synthesis and Pharmacology of Dimethyl Amidoethoxy-phosphorylcyanide (Tabun) Together With a Description of Some Allied Anticholinesterase Compounds Containing the N-P Bond* (1951) 25 Acta Physiol. Scand. 1 (Supp. 90).

[18] Agent V.X. is S-dimethylaminoethylmethylphosphonothiolate.

[19] See *supra*, note 17.

[20] The Big Eye bomb is the binary version of the existing premixed V.X. Weteye bomb. Accounts of the binary nerve gas production programme can be found in Carter, *Approval Sought for Nerve Gas Pilot Plant* (1979) 206 Science 1164; Holden, *Binary Nerve Gas Production Plans Debated* (1982) 216 Science 495. The United States Army wanted approval for a plant to make binary nerve gas projectiles. See General Accounting Office, *Chemical Warfare: Many Unanswered Questions* (1983) (GAO/IPE-83-6 monograph); and Smith, *Congress Questions Binary Weapons Plan* (1983) 220 Science 802. Thousands of sheep died downwind from nerve gas field tests at the U.S. Army's Proving Grounds, Skull Valley, Utah. See Boffey, *Nerve Gas: Dugway Accident Linked to Utah Sheep Kill* (1968) 162 Science 1460.

wide variety of initial symptoms which lead to paralysis, convulsions, coma, and death. Lethal doses in man can be as low as 0.05 mg/kg or less although little human data are available. The toxicity values available indicate that, depending on the route through which it enters the body, 0.1 to 2.0 milligrams can be fatal to a seventy kilogram man. A concentration on the ground of 0.5 to 5.0 mg/sq metre may have the same effect. The hazards of the use of agent V.X. are staggering because it is absorbed by any body surface, is more resistant to hydrolysis by water and can persist a long time on the ground, on vegetation, on buildings, and on vehicles. Symptoms produced by any of these agents immediately on exposure are nausea, vomiting, diarrhea, urination, blurred vision, salivation, sweating, lachrymation, pallor, headache followed by muscle twitching, weakness, heart arrythmias, and pulmonary edema, all of which within fifteen minutes lead to paralysis, fall of blood pressure, convulsions, coma, cyanosis, and death. Certain oxime derivatives can reactivate the acetylcholinesterase, thus serving as an antidote, but these compounds are poisonous in their own right. Survivors can develop persistent paralysis due to the destruction of nerve sheaths.[21]

In concluding this Part, mention should be made of a group of chemicals called psychochemicals or psychomimetics. There is much evidence that these agents have been used for military purposes to produce serious psychological disturbances and incapacitation of the enemy. LSD is one such substance, first synthesized by chemists of the Swiss drug company, Sandoz, in 1943, but in the fifties produced in considerable quantities by American drug companies such as Eli Lilly.[22] Oral ingestion of tiny amounts of this antagonist of the brain neurotransmitter, serotonin, can cause complete mental disorganization for periods of up to twelve hours. Visual hallucinations, alterations of perception of shape, colours and space, synesthesiae (alteration in perception of the senses), disturbances of time and body image, experiences of derealization and depersonalization, changes in mood, inability to move, and negativism are all part of the toxic psychosis.[23] In modern parlance, the subject is "freaked out". More alarming is the well documented evidence of the manufacture and stockpiling in bomblets for aerosol use of

[21] The term "distal axonopathy" has been introduced to describe another effect of organophosphate compounds — the symmetrical distal degeneration of peripheral nerve axons (dying-back degeneration). A thorough account of the chronic effects of organophosphorus compounds can be found in P. Spencer & H. Schaumburg, eds, *Experimental and Clinical Neurotoxicology* (1980) 527-44.

[22] See Stoll & Hofmann, *Die optisch aktiven Hydrazide der Lysergsäure und der Isolysergsäure* (1943) 26 Helv. Chim. Acta 922; and Field Manual 3-9, *supra*, note 17.

[23] For a good description of the clinical effects of LSD with many references, see Denber, "Clinical Aspects of Psychomimetic Drugs" in L. Roizin, H. Shiraki & N. Grcevic, eds, *Neurotoxicology* (1977), vol. 1.

Agent BZ by the United States Army. This mind-altering agent is reported to be many times more toxic and prolonged in action than LSD. Visual and auditory hallucinations with disturbance of memory, attention, comprehension, and problem solving can last for up to four days. Its use has been reported in Army testings under the name "Project Dork" in Utah in 1964 and during the Vietnam war.[24]

II. Biological Agents

Biological warfare, germ warfare, epidemic warfare, or bacteriological warfare can be defined as the intentional use or manufacture by culture or cloning of disease-producing viruses, bacteria, fungi, insects, or toxins produced by these organisms, for the purpose of causing disease or death of man, animals and plants. It is public health and preventive medicine in reverse. The two main divisions of biological warfare are (a) the use of rapidly growing strains of living organisms to start epidemics, and (b) the direct use of the purified toxins produced by micro-organisms, or of chemicals which affect plant growth (defoliants). The public fear generated by biological agents is even greater than that generated by synthetic chemicals. Biological agents are suited to covert use, clandestine manufacture and surreptitious importation.[25]

A. *Early Development*

Toxins have been used in warfare since ancient days. In 600 B.C., the Athenian legislator, Solan, had the poisonous roots of hellebore thrown into the river from which the enemy obtained drinking water causing violent gastro-intestional symptoms. A Carthagian general on retreat in 200 B.C. left behind wine poisoned with mandragora.

War and disease are no strangers. Plague cut down the crusaders at the gates of Jerusalem; typhus riddled the Moors in Spain; dysentery incapacitated Napoleon's army in Russia; typhoid fever incapacitated more soldiers that did bullets in the Boer War; tainted beef laid low many soldiers in the Spanish-American War; influenza hit soldiers and civilians at the close of World War I; and malaria, scrub typhus and other endemic infections became major concerns in the Mediterranean and South Pacific during World War II

[24] See *supra*, notes 2 and 3.

[25] For further references on biological agents and their history, see *ibid.*; and "Biological Warfare" in *Encyclopedia Britannica* (1959), vol. 3, 598-8B. The Stockholm International Peace Research Institute [SIPRI], *Yearbooks* (*World Armaments and Disarmament*) from 1973-82 are important reliable sources of new information worldwide.

and in Vietnam. During World War I, the Germans deliberately infected horses of the enemy with glanders. There have been many charges and denials of the use of biological weapons during the Japanese-Chinese conflict in World War II and the Korean War in 1951.

Characteristics of living organisms that have been considered important to the effectiveness of germ warfare are: high infectivity; resistance to heat, light and dryness; capability for rapid dissemination; ability to cause high mortality and lasting effects on survivors; and novelty in the part of the world where their use is intended so that tolerance and immunity have not been established. World Health Organization reports[26] list human diseases that meet most of these criteria as (a) viral diseases such as yellow fever, encephalitis, dengue, chikungunya, o'nyong-nyong (a highly infective viral disease of which two million cases were reported in East Africa from 1959 to 1961), Q fever (a rickettsial disease) and smallpox; (b) bacterial diseases such as plague, anthrax, typhoid, tularemia, and brucellosis (undulant fever); and (c) the fungal disease coccidioidomycosis which is caused by a soil organism and in which infection is produced by inhalation of wind-borne spores. Any of these pathogenic organisms could be disseminated in aerosols released from bombs and could cause direct infection of victims. Some of them could spread as epidemic diseases. A major difficulty in defence against these diseases is that detection and identification require laboratory procedures which can take from hours to days. During that period, the infections continue to undermine the strength and to render infective all strata of the communities exposed.

B. *Microbial Toxins, Mycotoxins and Yellow Rain*

Many bacteria and fungi, under certain conditions during their growth cycle, can synthesize complex compounds called biotoxins which can be extraordinarily toxic to man. Two groups will be considered here, the botulinus toxins and the trichothecenes produced by many common species of fungi. Botulinus toxin A has been considered as a potential weapon, but there is no evidence that it has ever actually been used in warfare. On the other hand, over the past few years, clear evidence has come to light that trichothecene toxins have been used against civilians in Southeast Asia; this subject will be considered in more detail below.

Strains of *Clostridium botulinum* are ubiquitous soil bacilli which under strictly oxygenless conditions, produce toxic protein aggregates which cause muscle paralysis. BTX is among the most lethal substances known to man.[27]

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[26] See *supra*, note 9 and further medical details in K. Isselbacher, R. Adams, *et al.*, eds, *Harrison's Principles of Internal Medicine*, 9th ed. (1980).

[27] See L. Smith, *Botulism* [:] *The Organism, Its Toxins, The Disease* (1977).

The lethal dose to humans is assessed at about one microgram. The toxin, in crystalline form, was isolated during World War II by research scientists at Camp Detrick, now known as Fort Detrick, Maryland. It is almost certain that stockpiles of the toxin were available for military use. It can be disseminated easily in an aerosol spray. The toxin acts on nerve terminals to all muscles, preventing the release of an important neurotransmitter.[28] Once the toxin is ingested, there is a latent period of six to thirty-six hours followed by nausea, vomiting, diarrhea, dry mouth and skin, sore throat, muscle weakness going on to paralysis, blurred vision with fixed dilated pupils, and respiratory failure which is the main cause of death. There is no specific treatment.

Since May 1976, a number of reports have appeared which indicate the use of some sort of lethal or incapacitating chemical weapon in air attacks against Hmong tribesmen in Laos and, in 1979 and later, in Kampuchea.[29] The reports were so disturbing and serious that in 1980 and 1981 the United Nations General Assembly passed two resolutions authorizing the Secretary-General to establish a group of experts to investigate the alleged use of chemical weapons.[30] Two reports were submitted by Canada on the toxicological and epidemiological aspects.[31] The events reported cannot be explained on the basis of naturally occurring phenomena. The United States Department of State has also reported on this subject.[32] What has come to light is that mycotoxins produced by species of *Fusarium* are prime suspects as the cause

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[28] See L. Simpson, ed., *Neuropoisons* [:] *Their Pathophysiological Actions* (1971), vol. 1.

[29] Numerous reports and comments have appeared in issues of Nature and Science during 1981. See, *e.g.*, Wade, *Toxic Warfare Changes May be Premature* (1981) 214 Science 34; Wade, *Yellow Rain and the Cloud of Chemical War* (1981) 214 Science 1008; Holden, *Unequivocal Evidence of Soviet Toxin Use* (1982) 216 Science 154; Marshall, *A Cloudburst of Yellow Rain Reports* (1982) 218 Science 1202. See also S. Seagrave, *Yellow Rain* [:] *A Journey Through the Terror of Chemical Warfare* (1981). This is a journalist's account of the use of chemicals in the Far East and also contains the little publicized spraying of chemicals by the U.S.S.R. on the population of Yemen.

[30] United Nations G.A. Res. 36/96C, 36 U.N. GAOR, Supp. (No. 51) 69, U.N. Doc. A/36/51 (1981); United Nations G.A. Res. 36/144C, 35 U.N. GAOR, Supp. (No. 48) 61, U.N. Doc. A/35/48 (1980); and *Report of the Secretary-General on Chemical and Bacteriological (Biological) Weapons*, U.N. Doc. A/36/613 (1981).

[31] See U.N. Doc. A/37/308, Annex II (1982), A Report to the Department of External Affairs Canada by Schiefer, *Study of the Possible Use of Chemical Warfare Agents in Southeast Asia*, submitted to the General Assembly 25 June 1982; a second group of refugee interviews, at Ban Vinai, conducted by the Surgeon-General of the Canadian Armed Forces was submitted to the United Nations Secretary-General on 25 August 1982. It is suspected that dimethylsulfoxide (DMSO) has been added to the toxic agents to facilitate entry through the skin. See D. Shapley, *Canada and yellow rain* [:] *UN expert group asked to act* (1982) 299 Nature 196.

[32] G. Shultz, *Chemical warfare in Southeast Asia and Afghanistan: an update* (1982) (United States Dep't of State, Special Report No. 104).

of skin lesions and gastro-intestinal hemorrhages found in civilians and are implicated in the death of chickens, pigs and other livestock that were exposed to a yellow sticky substance sprayed from jet aircraft on villages in Laos and Kampuchea during conflicts against the Khmer Rouge. Commonly referred to as "Yellow Rain", these incidents have opened up an entirely new dimension to the horrors of toxin warfare. From descriptions given by the Hmong, three different types of "gases" appear to have been used, "Yellow", "White" and "Green". All the eye witness reports indicated clearly that a very different group of agents have been used against the Khmer Rouge.

It is useful here to mention some facts related to the chemistry and medical aspects of mycotoxins and the mycotoxicoses, a group of diseases caused by the consumption of mouldy feeds made toxic by fungal growth. There are three mycotoxicoses for which there is clear evidence to associate the toxins with human disease: (a) chronic poisoning caused by the toxic effect of certain alkaloids growing on rye and other cereals; (b) liver cancer due to the extremely carcinogenic properties of certain toxins which can get into milk after cows have been fed toxic meal; and (c) poisoning of the gastro-intestinal tract caused by toxic fungal compounds growing on mouldy grain.[33] It is the last group of toxins which has relevance to the issue of Yellow Rain.

Outbreaks of a serious disease caused by eating bread contaminated with mouldy cereals has been reported in parts of Russia since the nineteenth century. Called alimentary toxic aleukia or "staggering grains" poisoning, the predominant symptoms are caused by fungi growing on snow-covered over-wintering grains. The extreme outbreaks of the condition which occurred in Western Siberia in 1932 and in 1942-47 involved a mortality rate as high as sixty *per cent.* Similar conditions — termed red mould disease and mouldy corn disease — have been reported in Japan and the United States. The toxicosis has four stages: A short time after eating the toxic grain, the mucous membranes of the mouth become inflamed and an acute gastro-enteritis develops causing fever, vomiting, diarrhea, and abdominal pain. These symptoms then disappear and over a latent period of three to four weeks there are few symptoms except weakness, slight breathing problems, dizziness, and headaches. During this period, called the leukopenic stage, the white

[33] Comprehensive treatises on microbial toxins, mycotoxicoses and the chemistry of the trichothecenes can be found in S. Kadis, A. Ciegler & S. Ajl, eds, *Microbial Toxins* (1971), vol. 7; T. Wyllie & L. Morehouse, eds, *Mycotoxic Fungi, Mycotoxins, Mycotoxicoses: An Encyclopedic Handbook* (1978), vols 1-3; and Y. Ueno, *Trichothecene Mycotoxins: Mycology, Chemistry, and Toxicology* (1980) 3 Adv. Nutr. Res. 301. The National Institute of Occupational Safety and Health [NIOSH] of the United States Dep't of Health and Welfare publishes an updated Registry of Toxic Effects of Chemical Substances which has many references to trichothecene toxins.

cells are progressively reduced in number and the body's general resistance is undermined. Suddenly, in the third stage, hemorrhagic skin rashes break out that lead to the localized death of cells in the skin, lips, nose, eyes, and throat and then the liver and heart. There is exhaustion of the bone marrow with consequent decrease in blood cells and the immune system is suppressed. The final stage is either death from hemorrhaging or slow recovery over a period of about two months. The carcinogenic effects of chronic poisoning have been little studied. A related condition is stachybotryotoxicosis which, although more common in horses and cattle, can contaminate man when handling infested hay or straw. The symptoms are similar, starting with a cell-destroying skin rash and leading to suppression of the immune system. However, the initial symptoms are more associated with skin absorption and inhalation producing an allergic lung reaction.

The important question is whether these forms of poison are the cause of the toxic symptoms and deaths documented in numerous reports following military actions involving chemicals in Laos and on the Thailand-Kampuchea border from 1976 to February 1982. A United States Department of State report found that (a) fungal toxins had been found in Southeast Asia which were not of natural origin; (b) the majority of the signs and symptoms could be explained by the type of poisoning described above although there are reservations about the rapidity of onset and the vomiting of blood, and (c) one specific toxin was found in blood and urine samples taken twenty-four hours after exposure of victims to the chemical attacks. Canadian reports from the Department of External Affairs are less certain. Whether or not any direct links to the Southeast Asian Yellow Rain are established, one thing is clear: mycotoxins are a new and frightening addition to the arsenal of chemical warfare agents.

C. *Defoliants, Chlorinated Dibenzodioxins and the Agent Orange Controversy*

The 1961 decision of the United States Government to use chemical defoliants as aerial sprays to destroy the jungle cover of the Viet Cong in Vietnam — called Operation Ranch Hand — escalated by 1967 into a defoliation programme that destroyed the rice and pineapple crops on a scale unprecedented in the history of war. Quite apart from the anti-crop objectives, the toxic effect on animals and man must also be considered. Public outrage at the consequences of the defoliation programme persists and today centres on the long term toxicity effects in man. It is known as the "Agent Orange" controversy and it is a tangle of scientific, legal, political, and social

questions.[34] It is worth-while to review some of the chemical and medical facts and issues.

The weed herbicides 2,4-D and 2,4,5-T were first synthesized in Britain during World War I. The manufacture of similar compounds for many industrial purposes increased greatly after the war. Inherent in the chemical syntheses are side reactions that produce highly toxic impurities commonly known as dioxins.[35] Two particular dioxins, TCDD and PCDD, have acute and chronic toxicity to man and animals. As little as 500 parts *per* trillion has been reported to kill fifty *per cent* of a monkey colony. Since 1949 there have been over twenty industrial accidents in plants manufacturing the chlorinated herbicides and fungicides. The most serious were the disaster at the Badische Anilin and Soda-Fabrik AG in Ludwigshafen, F.R.D. in 1953, the explosions at the Philips Duphar factory in The Netherlands in 1963, at the Coalite Company in the United Kingdom in 1968, and, more recently, at the much-publicized and researched incident at the ICMESA-Mesa plant near Brianza di Serveso, Italy in 1976. As much as three kilograms of TCDD was released on a population of 220,000 and at two kilometres from the plant, significant soil concentrations were found.

Although estimates vary considerably, it seems that in excess of 50,000 tons of chlorinated hydrocarbon defoliants were dropped on Vietnam, destroying 150,000 acres of rice paddy fields and defoliating 500,000 acres of jungle. The dioxin content of the agents made before 1970 also varied but could be quite high. This data means that between 100 and 200 kilograms of TCDD was disseminated on the population of Vietnam during the War. The formulations used had various code names — Agent Orange I and II, Agent Pink, Agent Purple, Agent White, and Agent Blue. Soil concentrations of TCDD in the Pran Buri region of Vietnam were found to be very high. Although approximately half the TCDD decomposes in a few days, the

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[34] For general accounts of the agitation of Vietnam veterans over long term effects of major herbicide spraying operations, see Holden, *Agent Orange Furor Continues to Build* (1979) 205 Science 770; Holden, *Reviewers Pan Agent Orange Study Plan* (1981) 214 Science 1107. For detailed accounts, see A. Westing, *Ecological Consequences of the Second Indo-China War* (1976); A. Westing, *Harvest of Death* (1982); E. Blair, ed., *Chlorodioxins — origin and fate* (1973) 120 Adv. Chem. Ser. 141; National Academy of Sciences, "The Effects of Herbicides in South Vietnam Part A" in *Report* (1974); Firestone, *The 2,3,7,8 Tetrachlorodibanzo-para-dioxin problem: a review* (1978) 27 Ecol. Bull. 39; and Council on Scientific Affairs, *Health Effects of Agent Orange and Dioxin Contaminants* (1982) 248 J.A.M.A. 1895.

[35] For full accounts of chemistry and toxicology of dioxins and industrial accidents, see (1979) 320 Annals N.Y. Acad. Sci. (Special Issue on *Health Effects of Halogenated Aromatic Hydrocarbons*, W. Nicholson & J. Moore, eds); and WHO International Agency for Research on Cancer, *Evaluation of Carcinogenic Risk of Chemicals to Man* (1977) (IARC Monograph, vol. 15).

remainder stays in the soil with an environmental half-life of 3.5 years. In 1980, it was estimated that eight kilograms remained in the soil, and by 1990 one kilogram will still be present from the actions in the Vietnam War. The grim effects of Vietnam defoliation will be made plain only in the decades ahead.

The acute symptoms produced by exposure to chlorinated dioxins are wide-ranging. Nausea and vomiting, headache, loss of appetite, numbness and tingling of the extremities, mild paralysis of facial muscles, and irritation of the respiratory tract, eye and skin predominate. Exposure to high concentrations leads to death from liver cell destruction in several weeks. Longer exposure leads to a type of skin disorder termed chloracne which is not susceptible to treatment.[36] Symptoms include cysts, comedomes and pustules. Skin hyperpigmentation also occurs. Decreased function of the liver, pancreas and kidneys develops. Loss of sex drive and vague psychiatric and neurological disturbances such as mood changes, depression, impairments of sensation, and reduced vision are also reported. The dioxins are known to be toxic to embryos, and can produce embryonic malformation as well as cancer in the long term. An increase in the frequency of liver cancer, chromosome aberrations and birth defects has already been documented in the areas of Vietnam that were exposed to dioxin-containing defoliants.[37] Higher frequencies of sight impairments, gastro-intestinal bleeding and hepatitis were also found. However, the epidemiological studies available are far from satisfactory. Agent Orange has also been blamed for a host of health troubles affecting Vietnam veterans in the United States and this has stimulated the National Toxicology Program to evaluate the charges.[38] Such studies are very complex and it will be years before objective data will be available.

Before leaving the subject of toxic herbicides, the potent and widely used herbicide Paraquat should be mentioned. It is available in any hardware store or nursery in North America. Its high toxicity to man was recognized soon after its introduction in the mid-sixties. Hundreds of fatal poisonings have occurred since 1966.[39] This chemical causes serious degenerative changes principally in the lungs, kidneys, liver, and brain. Although there is no evidence of the use of this defoliant in warfare, it would be an omission not to include it as a potential agent.

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[36] Hexachloronaphthalene was alleged to be the cause of chloracne or Perna disease (*per*chlorinated *na*phthalenes) but its dioxin content was 10,000 times more potent.

[37] See K. Lohs, *Delayed Toxic Effects of Chemical Warfare Agents* (1975) (SIPRI monograph).

[38] No reports of this programme have appeared as yet.

[39] See Teare, *Poisoning by Paraquat* (1976) 16 Med. Sci. L. 9.

Conclusion: Impact of Chemical and Biological Warfare on Health Care Systems

The impact on the population of bombs releasing one metric ton of an aerosol version of the nerve gas V.X. from aircraft at a height of 500 metres across a five kilometre line west of the middle of an urban centre with a population of two million, such as Montréal, on a weekday morning in November, and with a westerly non-turbulent wind velocity of fifteen kilometres *per* hour and a temperature of five degrees celsius would not differ greatly from the explosion of a three to five megaton nuclear device. An area of fifty square kilometres would be immediately affected; within fiftcen minutes, roughly half a million people would die. Before the day was out, three quarters of a million would have died. Over the subsequent week, the total deaths would be 1.2 million or sixty *per cent* of the population. The final figures could be as high as seventy-five *per cent*. The hospitals, most of which are concentrated in the city core area, would be made virtually non-functional and, at top estimates, only a third of the doctors and nurses would be able to offer help. Because ventilation systems would be functioning and the commuter population would all be at work in the downtown high-rise office buildings, few would be able to escape. The aftermath of social disorganization, disease and burial problems would be almost insurmountable. The World Health Organization [40] has made extensive estimates of the health care system — doctors, nurses, aides, and hospital beds — necessary to have any impact following a catastrophe of this magnitude. The required health care system would simply no longer exist. The consequences to a population in a developing country are even more alarming, if such could be imagined.

The medical nature and the extent of long term effects of chemical and biological warfare agents upon survivors is much less clear to the public and even to physicians. Delayed effects can result from acute or sub-acute poisoning and protracted or intermittent exposure can produce chronic poisoning.[41] Multiform psychological and neurological symptoms such as neurasthenia, depression, hypochondriacal behaviour, fatigue, and irritability can occur. These conditions decrease greatly the individual's effectiveness at work and in the home. Many of the agents discussed also lower the body's resistance to infection and increase the risk of cancer. The grim results of the Vietnam War will only become clear in the decades ahead when epidemiological and post-hospitalization studies document the rising cancer rate and the increasing number of deformed children.

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[40] See WHO, *supra*, note 9.

[41] See *supra*, note 37; and National Academy of Sciences, *supra*, note 34.

It is my hope that this short paper will inform and alert the reader — particularly lawyers — to the appalling realities of chemical and biological warfare. Through international recognition, discussion and law-formation, mechanisms must be found to end the deadly, invisible consequences of man's own technological sophistication which may lead to the destruction of himself and his world.

The United States Approach to Negotiating Arms Limitation Agreements with the Soviet Union

Eugene V. Rostow and Mary Elizabeth Hoinkes*

Arms control negotiations with the Soviet Union differ from United States arms control negotiations with all other states for three reasons: (a) the Soviet Union is an expansionist nation, whereas most other countries accept the state system as it is; (b) the Soviet Union's policy of indefinite territorial expansion is backed by enormous and growing military forces — perhaps the largest in the world; and (c) the Soviet Union does not accept the binding authority of the *United Nations Charter* as a codification of international law.** It regards itself as "exempt" in effect from the rules of the *Charter* which purport to confine the international use of force to individual or collective self-defense and the "enforcement" of Security Council "decisions".

Since 1945, the Soviet Union has violated art. 2(4) of the *Charter* so often that the state system has come to take Soviet aggression for granted, or even to assume that it must have a kind of "legal" sanction. Over and over again the Soviet Union has used its own forces or those of its proxies, and has supported terrorists or armed bands in international attacks on the territorial integrity or political independence of states from one end of the earth to the other. The practice has become so common that it has spread outside the zone of the Cold War. The Secretary-General of the United Nations, Perez de Cuellar, has recently warned of the threat of world anarchy unless the nations — all the nations — recommit themselves to art. 2(4) of the *Charter*.

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**The orthodox view among Soviet legal scholars is that "general international law" is the binding norm, the *Charter* being only one among its possible sources. The Soviets profess to agree that the "use of force contravening the provisions of the United Nations Charter is not only a violation of the Charter but also of general international law". See G. Tunkin, *Theory of International Law* (1974) 268. Tunkin, however, also defends, at 440, the so-called Brezhnev Doctrine under which "the might of the Soviet Union as the most powerful socialist power" has the unrestricted right to guarantee the socialist character of each socialist country. This constitutes a direct rejection of the provisions of art. 2(4) governing the use of force, and one of the basic purposes of the *Charter*. *Cf.* C. Jenks, *A New World of Law?* (1969) 294. See generally, Krauss, *Internal Conflicts and Foreign States: In Search of the State of Law* (1979) 5 Yale Stud. World Pub. Ord. 173; and Rostow, *Law and the Use of Force by States: The Brezhnev Doctrine* (1981) 7 Yale J. World Pub. Ord. 209.

President Reagan was the first among world leaders to support the Secretary-General's warning. And the analysis on which it rests is also the foundation for American arms control policy towards the Soviet Union. Like his predecessors, President Reagan has consistently rejected the claim that the Soviet Union is exempt from the rules of world public order which apply to other states. No nation can claim to be above the law. President Reagan has said that the world cannot live under a double standard regarding the international use of force, and has warned the Soviet Union that the *Charter* rules against aggression — the rules of arts 2(4) and 51 — must be respected reciprocally or they will lose all influence on the behavior of states. American spokesmen have said that the Soviet campaign of expansion has gone too far. It now threatens the balance of power on which the ultimate safety of the United States, its allies and its interests depend.

Since the early 1950s, at least, the primary strategic goal of Soviet expansion has been to change the world balance of power by separating Western Europe from the United States and Canada. To achieve this goal, the Soviet Union has been following an old and familiar strategic doctrine. It has been seeking to outflank Europe from the north and south, thus bringing the entire Eurasian land mass under Soviet control, and, on that basis, taking control of the Middle East and Africa. That done, the Soviet leaders believe, Japan and the other nations of the Pacific basin would accept Soviet suzerainty as inevitable; the peoples of Europe would lose hope; and an isolated United States would have no choice but to acquiesce in Soviet dominion.

Mr Andropov, the new Soviet leader, has defined the strategic goal of Soviet policy with refreshing candor in a speech he delivered on 5 August 1978, in Karelia, near Finland. The overriding task of foreign policy today, Mr Andropov said, is to make detente irreversible. That task is indispensable in the name of humanity. And the outcome is made inevitable by what the Soviets like to call "the correlation of forces", and especially the balance of nuclear forces. Confronting these objective facts, Mr Andropov says, the West has no alternative but to accept the Soviet conception of detente, which he defines in these terms:

> Here in Karelia, one must stress the significance attached to the lengthy experience of neighborly, genuinely equal and mutually advantageous co-operation between the Soviet Union and Finland. Soviet-Finnish relations today form an integral and stable system of equal co-operation in various spheres of political, economic and cultural life. This is detente embodied in daily contacts, detente which makes peace more lasting and peoples' lives better and more tranquil. In the last analysis this is the highly humane meaning of the foreign policy of socialism and the foreign policy activity of our party and the Soviet state.

In calling for "detente", Soviet spokesmen have, in fact, asked the West to adopt a policy of neutrality. For the West as a whole, such a proposal is unthinkable. For geopolitical reasons which can never change, neutrality is not among the policy options available to the loose coalitions whose security

is vital to the security of the United States. That is one of the main lessons the nations learned — or should have learned — from the First and Second World Wars, from Korea, and from the innumerable skirmishes which have taken place along the frontier between the two systems during the last forty years.

The notion of neutrality as the general model for "detente", Soviet-style, seems fantastic to the Western mind. But Soviet advocates of this view are entirely serious in putting it forward. The Soviet Union is striving to neutralize the West, not primarily by war, but by the political influence of credible military threats, multiplied to an overwhelming degree by the nuclear arms propaganda now bombarding the West.

This view of the present position is the basis for United States arms control policy, particularly with respect to negotiations with the Soviet Union about nuclear, chemical and biological weapons. A generation ago, it was understood almost universally that "arms control" and "collective security" were twin concepts. Arms control agreements might reinforce effective systems of collective security. But without collective security, arms control agreements were futile at best, and could be misleading and dangerous. The most fundamental aspect of U.S. arms control policy is that arms control must be viewed as an integral part of the system of collective security as a whole. It can never be a substitute for such a system, that is, it can never produce peace by magic.

The peculiarities of the Soviet Union's basic attitude towards international law, particularly with regard to the legal status of the *United Nations Charter*, impose special limitations upon the Soviet-American negotiating process in the field of arms control. When negotiating parties use different vocabularies, or use words in different senses, the negotiators must speak and write with extreme care to make sure they are keeping the number of inadvertent ambiguities to a minimum. And they must at all costs avoid the most common and most important error of negotiation, the assumption that each side's goals are the mirror image of the other's.

From the beginning of the nuclear age, the United States has fully appreciated that nuclear weapons could revolutionize not only warfare but world politics, and that extraordinary steps would be required to protect civilization from the disaster of nuclear war. Conventional war has profoundly damaged the fabric of civilization during this turbulent century: the consequences of nuclear war are unthinkable.

The first major indication of the different Soviet attitude toward nuclear weapons was the Soviet rejection of the 1946 American offer to put the whole of nuclear science under international control. Looking back on the fate of the Baruch Plan, it is obvious that the Soviet refusal was one of the most

destructive turning points in the history of the Cold War. While a number of important agreements have subsequently been negotiated, such as the *Limited Test Ban Treaty*, the *Antarctic Treaty*, the *Nuclear Non-Proliferation Treaty* and, more recently, the SALT agreements which led to the present negotiations on START and INF, in major respects these agreements have not lived up to expectations. The U.S.-Soviet negotiating experience has not reduced the possibility of nuclear war. The United States is convinced that this fact must strengthen, not weaken, our efforts.

It is evident that an impregnable wall cannot be erected between nuclear and conventional war. A nuclear standoff is meaningless to the victims of the many ernptions of hostilities waged with conventional arms. Foreswearing the use of nuclear weapons, thereby increasing the possibility of ever more devastating conflicts with conventional arms, would be a mockery of arms control. In the final analysis, if we are to eliminate the possibility of nuclear war, we must tackle the underlying problem — war itself. The struggle to save mankind from nuclear catastrophe must be seen in the context of a wider struggle to establish world public order, based on the concepts set forth in the *United Nations Charter*. The issue is not "colonialism" or "capitalism" or "communism" or "democracy" or the so-called "arms race". It is aggression. The motives for aggression are irrelevant. We live in a shrinking world, a world which is increasingly dangerous. The arms race is the symptom, not the cause, of the breakdown in world public order.

The United States must reluctantly accept the fact that Soviet objectives in arms control negotiations are not those of the United States and other Western nations. For the United States, the self-evident purpose of nuclear armament is defense, and the goal of nuclear arms agreements is to confine nuclear arsenals to a scale and structure which limit them to defense through deterrence, making it impossible to brandish them as weapons of political coercion and blackmail. While no one can guarantee the impossibility of nuclear war, it is apparent that the principal significance of nuclear weapons now — both in the Third World and in the industrialized world — is political, not military. The threat of such arsenals gives rise to currents of political fear, of nuclear anxiety, which are visible and influential in the West: in the impulse to withdraw, as if neutrality were a feasible choice; in impulses to surrender to the spectre of superior force; or in impulses to turn away from collective security to xenophobia, militarism and nuclear proliferation.

Accepting these facts, the United States has constructed its approach to the nuclear arms negotiations with the Soviet Union on a simple principle: the goal of the negotiators must be equality in deterrence — that is, in defensive nuclear power. The corollary of that principle is equally obvious: The agreed limits on nuclear arsenals must make impossible any Soviet nuclear blackmail based on the plausible threat of a successful aggressive first strike. Only this

approach, firmly rooted in the *Charter* of the United Nations, can promote the establishment of political security based on equal defensive power.

In the negotiations about intermediate range nuclear weapons [INF], the United States has proposed the complete elimination of all ground-based intermediate range ballistic missiles — those the Soviet Union has already deployed in Europe and Siberia, and those the United States is planning to deploy in Europe. And in the START negotiations, dealing with intercontinental nuclear weapons, the heart of the American proposal is that each side reduce the number of its ballistic missile warheads from about 7,500 to a first limit of 5,000, measured not only in numbers of weapons but in their destructive power as well. No more than half of each side's ballistic force could be ground-based. Agreement on these two points, accompanied by appropriate collateral agreements on related issues, would in itself do much to transform not only the military, but the political environment.

The two sets of nuclear negotiations at Geneva — INF and START — are closely linked, and they rest on the same analysis. They are linked because intercontinental range weapons fired from the Soviet Union can reach targets in France, Japan or the Middle East as well as the United States. Moreover, INF and START are linked by the political doctrine embodied in the *North Atlantic Treaty*: that an attack on one ally is an attack on all. In short, there is no such thing as a "balance" between intermediate range forces.

Viewing both sets of negotiations together, the pattern of development thus far is clear. The United States is seeking to eliminate the Soviet advantage in ground-based intermediate range and intercontinental ballistic missiles and to achieve deterrent equality between the Soviet and American nuclear forces in other respects. The Soviet Union has built up its formidable advantage in ground-based ballistic missiles during the last decade, while American governments hoped in vain that the Soviet Union would accept parity with the United States. The Soviet lead in ground-based ballistic missiles — heavy, swift, accurate, destructive, and beyond the reach of practical defenses — is the essence of the nuclear anxiety now agitating the Western world. If we are to have any hope of peace, that lead must be eliminated, either by appropriate Soviet reductions in force or by corresponding increases in the American arsenal. The United States strongly prefers to restore equilibrium by reductions.

The United States positions in the Geneva nuclear arms talks have been met thus far by Soviet proposals which would preserve, even enhance, the Soviet advantage in the most destabilizing class of nuclear weapons — the ground-based ballistic missile — and at the same time would deny the United States the opportunity to offset such deployments significantly. So far, the Soviet Union has insisted on the principle it calls "equal security", that is, the

view that it is entitled to have forces equal to the sum of all other nuclear forces in the world. It rejects the goal of equal limits, and insists that reductions to the levels indicated by the principle of equal security are the only equitable basis for a Soviet-American agreement. The Soviet Union has vehemently rejected a number of possible solutions based on the defensive principle of equal deterrence. It openly seeks not only to split the United States from its European and Asian allies, but to prevent the modernization of American forces. Clearly, the Soviet Union is trying through the negotiations to preserve its growing potential for nuclear coercion.

The choice between agreements which would permit equal nuclear defense and those which would permit Soviet nuclear blackmail is the main issue in the Geneva arms talks. The central question in these talks, therefore, is whether the United States will be able to maintain the foreign policy of collective security it has pursued since the time of President Truman, or whether the pressures of the Soviet nuclear advantage in ground-based ballistic missiles will force us to retreat to neutrality and isolation — that is, to the Soviet conception of detente.

The principle of equal deterrence, on which the American positions in the START and INF nuclear arms talks in Geneva are based, is a fair and equitable answer to the Soviet proposals for the neutralization of the West. The Soviet Union offers the world a *Pax Sovietica* based on Soviet military dominance and Western neutrality. The United States urges, on the contrary, a system of world public order based on the equality and inviolability of states — the system posited by the *Charter* of the United Nations. Such a system can be achieved only if all nations, and especially the great powers, respect and enforce the rules of the United Nations purporting to govern the international use of force.

The United States agrees with Soviet spokesmen that the great task set for mankind by history is "to make detente irreversible" — not detente Soviet-style, but the universal detente defined by the *United Nations Charter*.

Again, the importance of the recent warning by the Secretary-General of the United Nations should be stressed: The rules of the *United Nations Charter* regarding the international use of force are being weakened every year. As a result, the world political system is slipping towards a state of anarchy which can only result in war. No one can prevent the possible escalation of conventional war into nuclear war. The only way to prevent nuclear war, therefore, is for the nations to recommit themselves to the general and impartial enforcement of the rules of the *United Nations Charter* prohibiting both conventional and nuclear aggressive war.

The nuclear arms talks in Geneva are the most important instrument now available to us for negotiating seriously with the Soviet Union about this vital

series of issues. The INF talks about intermediate-range ballistic missiles have been going on for more than a year, the START talks on intercontinental weapons for over six months. As the Soviet Union concedes, those talks have made progress. They have advanced far enough for each side to understand the positions of the other, and to see possibilities for negotiation in the pattern of positions. What is not clear is whether the Sovict Union is interested in agreements based on the principle of defense through deterrence — that is, agreements which are incompatible with the possibility of nuclear blackmail and nuclear aggression. To date, the Soviet Union has turned down such possibilities out of hand, although the United States has said it would not view such rejections as final.

The principal achievement of the Geneva negotiations so far is that the differences between the United States and the Soviet Union on nuclear arms policy have never before been clarified so precisely. For that reason, it is now possible to envision a constructive agreement on the subject between the two sides. Those responsible for the national security policies of the United States approach the problem without the illusions which caused so much damage during the 1960s and '70s. And the serious and committed men who direct the affairs of the Soviet Union must thoroughly understand that the expansion of the Soviet empire has passed its zenith and that the troubles of the Soviet Union in Afghanistan, the Middle East and, above all, in Poland are incurable by the methods used since 1945. The constructive alternative of cooperation with the United States, based on the principles of the *United Nations Charter*, is always available.

Arms Limitation and Disarmament Talks: Soviet Approach

Victor L. Issraelyan*

The pursuit of arms limitation and disarmament has been and remains the most important orientation of U.S.S.R. foreign policy, which is pursued in close cooperation with the community of socialist states. These goals stem from the very nature of socialist states, where there are no classes or social groups attempting to enrich themselves on arms production and who are interested in an ever-increasing spiral of the arms race, unleashing predatory wars. Peace is a necessary prerequisite of progress; only peace creates conditions favourable to the construction of a new social system — socialism and communism. War and the arms race divert tremendous material and moral forces from the process of creation. The Soviet people, perhaps unlike any other people on our planet, have experienced all the horrors of war. Twenty million Soviet people sacrificed their lives to the altar of the Second World War. That is why the struggle against the threat of a new war, for arms race limitation and disarmament, is the main subject of numerous statements, meetings and rallies of the Soviet public.

Article 28 of the *Constitution* of the U.S.S.R. states clearly that Soviet foreign policy is aimed at "achieving universal and complete disarmament and consistently implementing the principle of the peaceful coexistence of states with different social systems".

The banner of disarmament as a practical task of the foreign policy of the Soviet State was raised by its founder, V.I. Lenin. As far back as 1922, at the very first meeting of the conference in Genoa, People's Commissar on foreign affairs G.V. Chicherin stated, on Lenin's instruction, that the Soviet Union intended to propose general arms reduction and to support all the proposals aimed at lessening the burden of militarism, providing the reduction of armies of all the states. At the initiative of the Soviet Government in December of the same year, an international disarmament conference was held in Moscow, and though only six states took part, it was the first conference after the World War of 1914-18 to be devoted specifically to disarmament.

The Soviet Union has conducted a particularly active struggle for arms limitation and disarmament since World War II. If one brings together all the Soviet proposals aimed at détente and providing for peace, disarmament and

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the improvement of relations between the states, which have been put forward during the post-war period for consideration of international fora and of other governments, they would fill a large number of sizable volumes.

The aim of the Soviet proposals in the field of disarmament is to prevent a new World War, and to strengthen peace and international security. The Soviet Union is making persistent efforts so that the question of the preservation of peace and the strengthening of international security is always of paramount concern both at bilateral talks and at international conferences.

Despite the will of the peoples to prevent nuclear catastrophe manifested so brightly in the course of the anti-war demonstrations held recently all over the world, and in spite of the efforts of many people from many states over many years, mankind has failed to attain notable progress in arms limitation. In this context, doubts are sometimes expressed about the possibility of overcoming the difficulties and differences which have appeared in the course of disarmament talks. The question arises whether the long cherished goal of mankind — complete and general disarmament under effective international control — is achievable.

We believe that this goal is quite achievable. However, success at the talks on disarmament can be attained only under certain conditions. One of the most important is the political will of state leaders and governments to conclude appropriate agreements. Even complicated problems arising in the course of arms limitation and disarmament talks can be resolved if the participants in the negotiations display good will and a sincere interest in the search for an acceptable solution. It is clear that otherwise an agreement cannot be reached. The history of the talks on disarmament reveals many examples which confirm this belief. It is enough to remember the Soviet-American talks, completed in the 1970s by the signing of a number of agreements on the most important questions of arms limitation.

Another key prerequisite for success at the disarmament talks is acceptance of the premise that any agreement should be based on the principle of undiminished security of states. This principle was set forth in the *Final Document* of the First Special Session of the United Nations General Assembly devoted to disarmament, which was adopted by a consensus of all the member-states of that organization. Paragraph 29 states: "The adoption of disarmament measures should take place in such an equitable and balanced manner as to ensure that no individual State or group of States may obtain advantages over others at any stage. At each stage the objective should be undiminished security at the lowest possible level of armaments and military forces".

This principle, of course, is central to any political, but not only political, talks among states. At talks involving problems of arms limitation and

disarmament, it has particular importance. What is involved is the vital sphere of security interests of each state. Soviet diplomacy is always guided by this principle. Thus, in 1958, the Soviet government, making a proposal to prohibit the military use of outer space, declared that it was necessary to find a solution which would not put into advantageous position either the United States or the Soviet Union, or any third state and would equally take into account the interests of security.

The principle of undiminished security of states, as a basis for agreements on disarmament, is also included in a number of bilateral documents. For example, the joint Soviet-American declaration on agreed principles for the talks on disarmament, published in September 1961, emphasizes that all measures on general and complete disarmament should be balanced in such a way that, at any stage of treaty implementation, no single state or group of states could obtain military superiority and equal security could be provided for all. The final communiqué of the preparatory consultations relating to the negotiations on the mutual reduction of armed forces and armaments in Central Europe contains an agreement of the participants at the Vienna talks to the effect that any concrete measures should be elaborated carefully with respect to their substance and timing so that, in all respects and at any moment, the principle of undiminished security of each state would be upheld.

Finally, one of the most important documents of Soviet-American relations — *Basic guidelines of mutual relations between the USSR and USA* — signed at the highest level in 1972, recognises that the attempts aimed at obtaining unilateral advantages, directly or indirectly, on the account of the other side are incompatible with these goals (proclaimed in the agreement). The necessary prerequisites for maintaining and strengthening the relations of peace between the U.S.S.R. and U.S.A. are the recognition of the security interests of the sides based on the principle of equality and renunciation of use or threat of use of force.

As is noted in United Nations research into the interrelation between disarmament and international security, the particular form of the general principle of equal security can be applied to negotiations between sides of approximately equal military strength. This principle is, of course, particularly relevant for relations between the U.S.S.R. and U.S.A., between the NATO and Warsaw Treaty states. In the 1970s, the principle of equality and equal security received wide recognition in Soviet-American documents signed at the highest level. As an example, one could refer to the Soviet-American communiqué on the occasion of the visit to the U.S.S.R. of American President Nixon in May 1972. It declared that the two sides intend to continue active negotiations on the limitation of strategic offensive arms and to conduct those negotiations in a spirit of respect for the legitimate

interests of each other and in observance of the principle of equal security. The well-known Vladivostok Declaration of 24 November 1974, of which President Ford was a signatory, underlined that the new agreement on the limitation of strategic offensive arms was based on the principle of equality and equal security. Finally, the *Treaty on the Limitation of Strategic Offensive Arms*, signed by President Carter for the American side, expressed the agreement of the parties to consider in the future any measure to ensure the equality and equal security of the sides.

Thus, at Soviet-American arms limitation talks, the principle of equality and equal security was recognised by at least three previous United States Administrations, both Republican and Democratic. Unfortunately, today we cannot but note that President Reagan's Administration has taken another course. It refuses flatly to deal with the U.S.S.R. on the basis of equality and equal security. It is suitable to rehearse here the words of Y.V. Andropov, General Secretary of the Communist Party of the Soviet Union, Central Committee: "Let no one expect from us unilateral disarmament. We are not naive people. We do not demand the unilateral disarmament of the West, we are in favour of equality, account of interests of both sides, fair agreement".

The Soviet point of view is that the use, in practice, of the principle of equality and equal security presupposes an objective assessment of the existing balance of world military forces, an unprejudiced analysis of the armaments and armed forces of the parties to negotiations and of other states and a realistic approach toward the international situation as a whole.

Security of the state is not an abstract notion. It is made concrete in the joint elaboration by states of such principles in their mutual relations which may become a political and legal basis for the security of each state while creating the conditions for security for all. In addition, the collective interstate mechanism for maintaining general security — the United Nations Security Council — is empowered by the *Charter* to adopt concrete collective measures preventing and averting any threat to peace, and to suppress any act of aggression. International trade, as well as mutually-beneficial economic, scientific and technical cooperation also create a tangible fabric of mutual interest in long-term relations. All these are the elements of security of states. There is another side of the security notion, which, under certain conditions, may become decisive for the destiny of both individual peoples and of mankind as a whole. I have in mind the military aspects of security. Undoubtedly, national security is the direct responsibility of a state on behalf of its people; it is its duty and right. The inalienable right of states to provide for individual and collective self-defence, and consequently to possess the means necessary to that end, is recognised by the *United Nations Charter* in art. 51. Within the limits set out in that article, the concern of states for their national security cannot have negative effects on international security.

However, the essence of the problem is the rational determination of those limits. Experience shows that it is in resolving the question: How much is enough for security?, that the sense of proportion often escapes the statesmen and politicians of the West and primarily of the U.S.A. Frequently, military programmes are adopted which in no way can be justified by the interest in strengthening security, and which may indeed destabilize the strategic situation in the world.

One of the manifestations of such a trend is a myth about the so-called "Soviet military threat", or "Soviet military superiority". To justify the myth, juggled data, evidence of "experts" and conclusions of "analysts" are put forward in the West. Numerous channels of propaganda are very active in exaggerating the myth.

But if one stands on the solid soil of the facts, and there cannot be another basis for the objective assessment of the correlation of forces, one has to recognise that in strategic nuclear arms, in medium-range nuclear arms in Europe and in conventional armaments and armed forces of NATO and the Warsaw Treaty nations, there exists, in all cases, an approximate equilibrium between the sides. There is no "Soviet superiority". This fact is also recognised by many authoritative figures in the West.

As has been stressed repeatedly by the Soviet leadership, Soviet military doctrine has a strictly defensive orientation. The character of the Soviet Armed Forces, the principles of their composition and the strategy and tactics of their use have been and continue to be formed with a view to repelling any aggression or threats aimed at the Soviet Union and its allies. The general defensive orientation of Soviet doctrine has been and is now being expressed in the military and technical policy of the Soviet State. The U.S.S.R. has never taken the lead in creating weapons which are particularly dangerous for peoples, but which could destroy every living thing on Earth. On the contrary, it has always strived, and is still striving, to prevent warfare from becoming more cruel, and to inhibit the spread of the arms race to new spheres.

It was so with nuclear and many other types of weapons of mass destruction. It was not the U.S.S.R., but the U.S.A., which was the first state to create atomic weapons and then the H-bomb. It was not the U.S.S.R., but the U.S.A., which was the first to build nuclear submarines, inter-continental bombers, nuclear aircraft carriers, and to equip missiles with independently-targeted warheads. Washington has recently taken a new and heavy responsibility upon itself for initiating the production of the neutron bomb.

Of course, one cannot determine with scientific precision the approximate balance of military forces between the U.S.S.R. and the U.S.A. It does not mean that the quantitative and qualitative indices of the sides coincide completely on all types of armed forces and armaments. It is only natural that

the military posture of each side consists of priorities which are determined by an entire complex of factors, each of which has its own specific character. The comparison of even roughly equivalent items of the military forces of each side is an extremely difficult matter. Therefore, when the word "equilibrium" is used to reflect the correlation of forces between two states or two groups of states, it means that, in considering the general military and strategic balance, both sides are approximately in a similar position; neither of them has military superiority over the other.

Recently, the U.S.A. has undertaken a programme of military build-up which is in no way justified by the defensive needs of the country. It should be noted that although the maintenance of a necessary level of defence capability is lawful for each state as long as it threatens no-one, an unrestrained military build-up conducted by some states endangers the foundation of security of others and undermines international security as a whole, creating the threat of war. The quest for military superiority by one side, particularly in the nuclear field, compels the other side to adopt necessary measures for strengthening its defence capability, thereby ensuring a military balance.

Experience has confirmed that the idea of achieving military superiority over the U.S.S.R. and its allies is completely barren. It failed during the period of formation of our socialist state; it is all the more incredible now that the U.S.S.R. and other countries of the socialist community possess tremendous economic potential which continues to grow steadily. However, attempts to achieve military superiority are extremely dangerous in that they lead inevitably to further expansion of the arms race. In a nuclear age, the fundamental truth is that the higher the level of military confrontation, even while maintaining the strategic balance, the less stable that balance becomes. The greater the number of elements of uncertainty, the greater the possibility of a nuclear conflict. The Political Declaration of the Warsaw Treaty member-states of 5 January 1983 emphasizes that recently adopted, and already implemented United States programmes of development and production of nuclear weapons are dangerous: "[T]he policy of arms build-up pursued by the USA and some of its allies to achieve military superiority is leading to the frustration of international stability". The Declaration stresses that, under such conditions, "peace will become less stable and more fragile". Finally, the Soviet Union has repeatedly drawn attention to the fact that a new round of the arms race will make nuclear weapons and other weapons of mass destruction still more complicated; consequently, it will be much more difficult to elaborate international agreements on arms limitation and reduction.

In recent years, the policy approach of the socialist states has gained international recognition. For example, in the previously mentioned United Nations study on the interrelationship between disarmament and international security, in which experts from the U.S.A. and other NATO countries

participated, the distinguished experts stated unanimously that a new stage of the arms race, and the development of new types of weapons, which will be extremely difficult to control or limit by mutual agreements, may undermine international stability and increase considerably the danger of war.

Of course, maintaining the established balance is not an end in itself. The Soviet Union is in favour of starting to curve down the arms race, reducing gradually the level of military confrontation. The interests of national security of all states can best be ensured by pursuing peace and the relaxation of international tension, supplemented by concrete measures in the field of arms limitation and disarmament. The more durable and stable the peace, the greater the security in which states and peoples will live. It is not the quest for military superiority over other states, the notorious policy of "strength position", that enhances general peace and security, but rather a sober and responsible approach toward the assessment of events in international life, a readiness to adopt concrete and effective measures in the field of disarmament based upon strict observance of the principle of undiminished security for each side.

In this connection, of particular importance is the unilateral commitment of the Soviet Union, undertaken in 1982, not to be the first state to use nuclear weapons. This commitment is not simply a declaration about the peaceful intentions of the U.S.S.R.; it is a concrete step introducing important new elements into the strategy and tactical planning of the Soviet Armed Forces, a development serving to strengthen the material basis of international security. As Dmitry Ustinov, the U.S.S.R. Minister of Defence stated: "It means that in training the Armed Forces, more attention will be paid to the tasks of preventing military conflicts from developing into nuclear ones. These tasks, in all their diversity, become an irrevocable part of our military activity. Every expert versed a little in military questions, understands that they establish a strong framework for the training of the troops and headquarters staff, they determine the composition of armaments, and the organization of still more strict control in order to preclude an unauthorized launch of nuclear weapons, both tactical and strategic ones."

The world community is entitled to expect that, after the commitment undertaken unilaterally by the Soviet Union not to be the first to use nuclear weapons, all the nuclear powers which have not done so will follow suit. The 37th Session of the United Nations General Assembly supported the Soviet initiative in a most unambiguous manner, expressing hope, in a special resolution, that other states possessing nuclear weapons would follow the example of the U.S.S.R.

The leaders of the Western powers, at a recent Council of NATO, elaborated a collective commitment according to which none of their arma-

ments would be used other than in the course of a retaliatory strike. By this declaration, they attempted to counter the Soviet pledge not to use nuclear weapons first. The Soviet Union and other countries of the socialist community have noted this declaration. The sincerity and seriousness of the declaration will be tested by the reply of the West to the proposal of the Warsaw Treaty member-states to conclude a treaty with the NATO member- countries which would establish the principle of the mutual non-use of military force and would promote the maintenance of peaceful relations.

The core of the treaty would be the mutual commitment of the member-states of both alliances not to be the first to use either nuclear *or* conventional weapons against each other. It is clear that such a proposal unmasks completely the allegations of the West that the appeal of the Soviet Union to renounce the first use of nuclear weapons is designed to leave it free to benefit from its "superiority" in conventional armaments. The Soviet Union and its allies do not seek unilateral advantages; they are seeking such mutually acceptable steps as would divert the military threat and strengthen the security of all. A positive reaction by the NATO member-states to this proposal of the socialist countries would undoubtedly exert favourable influence on the future development of international law and politics.

The peoples of the world follow with great attention the Soviet-American strategic arms limitation and reduction talks and the discussions on nuclear arms limitation in Europe. These two sets of talks have encountered great difficulties; these difficulties are rooted in the unwillingness of the United States to achieve an agreement on a fair basis, on the basis of the principle of equality and equal security.

As far as the strategic arms limitation and reduction talks are concerned, the U.S.A. has brought to them proposals which are aimed clearly at upsetting the existing strategic parity and at achieving advantages for itself. As a basis for the negotiations at Geneva, the U.S.A. has singled out ballistic missiles from the totality of the strategic systems, laying special emphasis on ground-based ICBMs especially the heavy ICBMs of the SS-18 type. It is this type of strategic system that the American side declares to be the most "destabilizing".

This posture has been adopted because the strategic nuclear forces of the U.S.A. and the U.S.S.R. differ considerably in their structure. For several decades they have developed differently under the influence of such factors as the military and political situation in specific time periods, the individual character of the geographic and strategic situation of each side, and the selected technological solutions. As a result, seventy *per cent* of the strategic potential of the U.S.S.R., measured by counting warheads, is represented by ground-based ICBMs, while in the U.S.A., more than eighty *per cent* is

represented by submarine-launched ballistic missiles [SLBMs] and heavy bombers.

Aware of these structural differences, the U.S.A. put forward a proposal which, when implemented, would mean that the Soviet strategic nuclear potential, measured by the number of charges, would be almost three times less than the American one, while the U.S.A. would be allowed to build up freely its strategic armaments by deploying new ICBMs, the MX missile, sea-based ballistic Trident-1 and Trident-2 missiles, the B-1 strategic bomber, and long-range cruise missiles.

If the U.S.S.R. followed the example of the U.S.A. and declared to be most destabilizing those components of strategic forces in which the U.S.A. has clear superiority, one could consider, as the most destabilising factor, the almost threefold American superiority in SLBM warheads. One could also note the particularly destabilizing nature of the United States strategic Air Force, and the deployment of nuclear weapons on aircraft carriers, in which the U.S.A. has manifold superiority over the Soviet Union. However, the Soviet Union is not taking this course because it observes strictly and honestly the principle of equality and equal security which requires each side to take into account *all* the components of strategic forces.

On the basis of this approach, the U.S.S.R. proposes to reduce, stage-by-stage, the total quantity of ICBM and SLBM launching pads as well as heavy bombers to 1,800 units for each side by 1990, that is, to reduce by twenty-five *per cent* the initial ceiling for these systems established by the SALT-II Treaty. The number of nuclear charges on these delivery vehicles would also be reduced to the agreed equal levels. It should be emphasized, and this is a matter of principle, that at all stages of the reduction, the U.S.S.R. and the U.S.A. would remain in essential equality regarding their national security. The parity between them in the strategic field would be maintained.

Putting forward these proposals, the Soviet Union takes into account the existence of American forward-based nuclear forces, located in direct proximity to the borders of the U.S.S.R. and its allies. For the U.S.S.R., these armaments have a strategic character. Because they are not counterbalanced by anything on the Soviet side (the U.S.S.R. does not possess similar systems near United States territory), then, with the reduction of the number of ICBMs, SLBMs and heavy bombers, the weight of the United States forward-based forces in the strategic balance would increase steadily. Therefore, the Soviet proposals envisage that during the mutual reduction of strategic nuclear forces, the United States, at the very least, should not increase other nuclear systems capable of reaching Soviet territory. Otherwise, the U.S.A. would benefit from a significant loophole to circumvent the agreements on

strategic arms limitation and reduction. The Soviet proposals also contemplate the limitation of qualitative improvement of strategic armaments. In particular, the U.S.S.R. favours the total prohibition of cruise missiles with a range of more than 600 kilometres whether air-, land- or sea-based, and promotes, within agreed parameters, the limitation of research and development geared to the upgrading of existing weapons. If these constructive proposals are rejected by the American side, and its plans to create new types of weapons are implemented, then as was stated by Y.V. Andropov, General Secretary of the Central Committee of the Communist Party of the Soviet Union: "We will be compelled to counter the challenge of the American side by deploying corresponding weapons systems of our own — an analogous missile to counter the MX missile, and our own long-range cruise missile, which we are now testing, to counter the U.S. long-range cruise missile." However, we would not choose such a development. We are in favour of ending the arms race by concluding agreements on strengthening security at lower levels of armaments.

As far as the talks on nuclear arms limitation in Europe are concerned, the position of the U.S.S.R. is also based clearly on the principle of equality and equal security. On 21 December 1982, Y.V. Andropov stated that the U.S.S.R. is prepared to agree that the Soviet Union should retain in Europe only as many missiles as are kept there by Britain and France. This means that the Soviet Union would remove hundreds of missiles, including scores of the most advanced Soviet missiles, known in the West as the SS-20. In this case, as far as the U.S.S.R. and the U.S.A. are concerned, this would be a really honest "zero" option for medium-range missiles. Along with such an agreement, there must be also an accord on reducing to equal levels the number of medium-range nuclear delivery aircraft stationed in Europe by the U.S.S.R. and the NATO countries.

In connection with these Soviet proposals, attempts are being made by some interest groups in the West to prove something that cannot be proved: that the Soviet Union should not take into account the threat to its security represented by the missiles of the United Kingdom and France. These arguments are beneath criticism. It is known generally that in the total balance of nuclear forces in Europe, the British and French armaments are on the same scale as the United States weapons. These states are allies in the North Atlantic military and political bloc, a fact which speaks for itself. The British and French nuclear armaments are taken into account by the Soviet Union now, and they should and will be taken into account in the future, be it in an agreement or in some other manner. The U.S.S.R. does not demand anything from Britain and France. But it has many reasons to demand from the U.S.A. that any treaty on nuclear arms reduction and limitation in Europe should correspond to the principle of equality and equal security for each side. There

cannot be equal security in Europe, however, if the British and French nuclear armaments are not taken into account.

The continued blocking of negotiations on such important problems as a general and complete nuclear weapons test ban, a prohibition of chemical weapons and the destruction of existing stockpiles, the limitation and further reduction of military activity in the Indian Ocean, the limitation of conventional weapons sale and supply, as well as the talks on the anti-satellite systems — all these are links in the same chain, connected inseparably with the American quest for military superiority.

It is important to examine the verification problem also, for verification is one of the measures which builds confidence in observing agreements. The U.S.S.R. approach to verification is based upon the well-known provisions of the *Final Document* of the First Special Session of the General Assembly on Disarmament, which states in particular that disarmament and arms limitation agreements should envisage verification measures sufficient to satisfy all states-parties, and to create confidence that would promote observance by all sides. The forms and terms of verification provided for in any concrete agreement must depend upon the objectives, scope and character of that agreement. The Soviet Union also attributes great importance to the provision of the *Final Document* which states that methods and procedures for verification should be non-discriminatory and should not interfere unduly with the internal affairs of other states or jeopardize their economic and social development.

Some Western observers have attempted recently to limit the principle of verification to only one of its forms: that is, on-site verification. An agreement on the question of control through on-site inspection has been made a prerequisite to talks on the substance of disarmament. Other approaches to control which have won broad international recognition are ignored, as are the opinions of eminent specialists. An example of this narrow approach, and a striking one, is the position of the United States regarding a nuclear weapons test ban. After long negotiations on a test ban, which led to an agreement on a general approach to all aspects of the problem, and after many years of studying related questions of control, the United States is now suggesting that we start the whole thing right from the beginning. At the same time, it has refused to become involved in the drafting of a treaty on this important subject.

Moreover, the provisions of the *Final Document* of the First Special Session on Disarmament, and the experience that has been gained in the consideration of control and verification matters, indicate clearly that these issues should be discussed and dealt with simultaneously, as an organic part of our consideration of specific arms limitation and disarmament problems,

rather than being divorced from them. Experience has also shown that national technological means constitute a very reliable method of verifying the extent to which an agreement has been implemented. At the same time, where necessary, various methods of verification should be combined with other control procedures, including international procedures such as on-site verification on an agreed basis. The strengthening of trust would help to ensure the application of additional control measures. This approach, based on a combination of national and international means of control, is also reflected in the new proposals for prohibiting chemical weapons and for banning nuclear weapons tests put forward by the Soviet Union in 1982.

Many of our proposals for control in connection with the nuclear weapon test ban go even further than the provisions of the relevant tripartite communiqué to the Committee on Disarmament, which reflected the degree of agreement among the United States, the Soviet Union and the United Kingdom. Additional functions would be performed by experts who would then deal not only with the international exchange of seismological data and the promotion of international consultation and cooperation, but would also play some part in on-site verification.

Not all states have highly developed national technology available to them for effecting control. That being so, a number of Soviet documents put before the United Nations and the Committee on Disarmament envisage the possibility of releasing information gathered by means of national control technology to those states-parties that do not possess such technology. On the whole, the Soviet Union is ready to undertake business-like discussions to resolve the question of control and verification of various arms limitation and disarmament measures. This readiness is equally apparent in our approach to the question of freezing nuclear arsenals.

At the same time, one cannot fail to see that certain measures, which themselves do not represent arms reduction and disarmament, may not require any elaborate system of control. This is particularly true of any pledge or treaty calling for the non-use of nuclear weapons. We believe that the concern expressed in some quarters that the Soviet Union's undertaking not to be the first to use nuclear weapons and that the Indian draft convention which would prohibit the use of nuclear weapons, do not envisage sufficient control and are not subject to verification, is beneath criticism. It would be appropriate to recall that a few years ago the United States, the United Kingdom and France made unilateral declarations that they would not use nuclear weapons against a limited number of states that did not possess such weapons. At that time, they did not link their declarations to any verification procedure.

In principle, one should not rule out the possibility of creating international machinery to verify the implementation of major steps in the process of

genuine disarmament, provided that the need is dictated by the substance of the steps themselves. It should be remembered that the Soviet plan for general and complete disarmament, which was put forward in the United Nations as far back as the beginning of the 1960s, provided for the creation of just such an international control organization, ensuring general and complete verification. However, at that time we believed, and we continue to believe, that to divorce control measures from the substance of disarmament agreements is unwarranted and serves only to jeopardize the cause of disarmament. There cannot be control without disarmament. If there is, in fact, genuine disarmament, then any method of control, even the most far-reaching, should be utilized.

The disarmament problem today is a universal problem, concerning every state. All peoples of the world are interested in a positive solution to the disarmament dilemma and every people, without exception, can make a contribution to its solution.

Negotiating Arms Limitation Agreements: Non-Aligned Perspectives

Inga Thorsson*

Introduction

I am delighted that the editors of the *McGill Law Journal* have decided to devote this issue to the problems of the arms race and disarmament. Having been asked to contribute an article on the perspectives of non-aligned nations in negotiating arms limitations agreements, I shall begin with some experiences gained as representative from Sweden at the United Nations General Assembly Second Special Session on Disarmament [SSOD II] held in New York during June and July 1982.

As a citizen of Sweden, a neutral European nation that has participated in the multilateral disarmament negotiations in Geneva since their beginning in March 1962, I must state first that all of these negotiations have so far failed to achieve the solutions so badly needed. The inability of the SSOD II to elaborate and adopt a Comprehensive Programme on Disarmament, especially after several years of negotiations toward one in Geneva, accentuates this failure.

Nevertheless, there is no way to conclude international agreements on disarmament but through continued political negotiations; these will have to be pursued with redoubled effort. Experience has taught us that no longer do we have reason to believe that governments acting alone possess rational thinking and common sense. Had these two elements been present, we would have achieved genuine disarmament long ago. The world would be a different world than it is today. But that is not the case. For many of us who have participated over the years in disarmament efforts, our hopes are buoycd by the determined will of all concerned citizens who seek to stop and to alter the disastrous course that world events have taken. A similar hope was expressed by President Eisenhower when, in 1959, he said:

> I like to believe that people in the long run are going to do more to promote peace than are governments. I think that people want peace so much that one of these days governments had better get out of their way and let them have it.

Disregarding the tone of paternalism, so often heard in American Presidential statements, I cannot but agree with this remark.

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But time is dear. Twenty-four years have passed since the words "one of these days" were spoken. The Doomsday Clock on the cover of the *Bulletin of the Atomic Scientists* now stands at four minutes to twelve. Viewing the failure of the SSOD II against the background of today's accelerating arms race, this statement by Eisenhower is now a truism.

Many of us had built high hopes on the SSOD II. Unfortunately, the weeks in New York last summer were weeks of agony and anguish. What, then, is the final assessment of the Special Session from a neutral European perspective?

Although in negative terms there is much to be said about the SSOD II, one should not forget its achievements: It approved a concluding document which, under the circumstances, is a good document. It approved guidelines for a World Disarmament Campaign to be run under the auspices of the U.N. It served as a catalyst for some of the most impressive disarmament and peace manifestations ever witnessed.

On the other hand, many points can be made in negative terms. To begin with, statements by the President of the United States and the Prime Minister of Great Britain were distinctly unconstructive. These two world figures left a distressing impression in the minds of delegations from non-aligned countries and indeed set a negative tone which came to dominate the negotiations. One must question the sensitivity of these two governments, especially given the reactions of delegations to an earlier statement from U.S.S.R. Foreign Minister Gromyko and the message contained therein from President Brezhnev. It is no exaggeration to say that the behaviour of the two leading Western powers had a decisive impact upon the remaining weeks of the session.

I. Superpower Behaviour

Such unconstructive behaviour may be traced to two causes. It is due partly to the existing "cold-war" relations between the two superpowers, a relationship which has deteriorated sharply since the mid-1970s. It is due partly to the general attitude that the two superpowers bring to multilateral disarmament negotiations, both in New York, and in particular, at the Committee on Disarmament in Geneva. Based on my own experiences, I would characterize this attitude as negligent and obstructive. Both powers prefer secret bilateral talks behind closed doors. They deny the Committee on Disarmament the right and the possibility to negotiate the highest priority items on its agenda, an agenda which they themselves have approved. They disregard U.N. resolutions which, though not legally, are politically and morally binding — both powers having voted in favour of many of them. By this behaviour, these powers show not only their disregard, but also their arrogance toward the world around them, which seems to exist only in relation to their own power politics and their own mutual relations.

This attitude of disregard is displayed openly by the United States; it is kept sheltered behind clever words and free-of-cost proposals by the Soviet Union. In the United States, this view of the world is revealed also by the media. In *The New York Times* of 29 June 1982, the opening day of the START talks, an editorial began as follows: "The world's oldest established permanent floating disarmament conference reopens in Geneva today." Those familiar with the Geneva negotiations would have thought surely of the multilateral Disarmament Committee, which began its work in 1962. *The New York Times*, however, was referring to the bilateral SALT talks which began in 1969. In *The New York Times* of 3 August 1982, a short report appeared on the reopening of the Committee on Disarmament in Geneva following the SSOD II. The report refers to the Committee's work toward a proposed ban on the development, production and stockpiling of chemical weapons. It stated that this group is not expected to produce new agreements, but that "progress in their talks might spill over into US-Soviet negotiations". The attitude of arrogance is revealed once more. If ever there was a field in which a binding international agreement is needed, it is in the field of chemical weapons. Any country with a modern chemical industry can produce chemical weapons. In the absence of an international agreement, this danger is greatly increased. But in the view of *The New York Times* correspondent, these multilateral negotiations were viewed only as a possible benefit to American-Soviet negotiations!

A few examples of official state behaviour should provide the final proof of superpower arrogance. But one caveat should be stated first. Although most of the examples are taken from the United States, no conclusions can be drawn from this fact alone. Examples of superpower arrogance are found more readily in the United States only because the United States, unlike the Soviet Union, is an open society.

In the concluding document of the U.N. SSOD II, the following was agreed on, among other things, by consensus:

> The General Assembly was encouraged by the unanimous and categorical reaffirmation by all Member States of the validity of the Final Document of the Tenth Special Session [SSOD I] as well as their solemn commitment to it and their pledge to respect the priorities in disarmament negotiations as agreed to in its Programme of Action.

The United States subsequently approved this particular sentence. The Programme of Action contains, in para. 51, the following sentence:

> [T]he negotiations now in progress on a treaty prohibiting nuclear-weapon tests... should be concluded urgently and the result submitted for full consideration by the multilateral negotiating body with a view to the submission of a draft treaty to the General Assembly at the earliest possible date.

In para. 45 of the same document, nuclear weapons disarmament is to be given highest priority in disarmament negotiations.

In my view, this 1982 U.N. document, although not legally binding, is politically and morally binding on all parties that voted for its adoption. The United States is such a party.

There are also legal grounds for requesting effective negotiations on a comprehensive test ban treaty. The *Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water* of 5 August 1963, provides in its Preamble that states-parties are: "Seeking to achieve the discontinuance of all test explosions of nuclear weapons for all time, determined to continue negotiations to this end."

The *Treaty on the Non-Proliferation of Nuclear Weapons* of 1 July 1968, recalls in its Preamble, "the determination expressed by the Parties to the 1963 Treaty... to achieve the discontinuance of all test explosions for all time and to continue negotiations to this end".

As a party to these two *Treaties*, the United States has a legally binding obligation to continue negotiations in order to achieve a comprehensive test ban treaty. The U.N. General Assembly has taken decisions repeatedly making this issue the item of highest priority on the agenda of the Committee on Disarmament. The United States has participated in such decisions since 1979. Despite these legal commitments, President Reagan announced, only ten days after the adoption of the concluding document of the U.N. SSOD II, his decision not to resume the so-called trilateral preparatory negotiations between the U.S.A., the U.K. and the U.S.S.R. on such a treaty.

This act was a violation of these two *Treaties*. But we should not have been surprised. We had been given advance notice. In a speech to the Committee on Disarmament on 9 February 1982, the then Director of the U.S. Arms Control and Disarmament Agency, Dr Eugene Rostow, stated: "Limitations on testing must necessarily be considered within the broad range of nuclear issues." Two points must be made here. First, the reader should note that the word chosen was "limitations". No reference was made to the legally binding commitment to a comprehensive ban. Second, there is nothing in these legally binding commitments of the 1960s implying that a comprehensive test ban is merely part of "the broad range of nuclear issues". The language in the two *Treaties* quoted above is clear and unequivocal: the "discontinuance of all test explosions for all time" is not open to interpretation. An explicit commitment to a complete test ban was made in 1963.

In the same year, the United States concluded with the Soviet Union and the United Kingdom the *Partial Test Ban Treaty*. It was ratified in the U.S. Senate, by a vote of eighty to nineteen. During the ratification debate, the late

Senate Republican leader Everett M. Dirksen said: "I should not like to have written on my tombstone: He knew what happened at Hiroshima, but he did not take a first step." After twenty years that "first step" is yet to be taken. What will be written on the tombstones of those responsible for this ominous fact? Although the negotiations in the early 1960s came very close to achieving the desired comprehensive test ban, they failed nevertheless. In his recent book, *Kennedy, Khrushshev and the Test Ban*, Glenn Seaborg, who participated in these negotiations as Chairman of the U.S. Atomic Energy Commission, describes the failure as a "world tragedy of the first magnitude". Indeed, had these negotiations been successful, we might well have prevented the rapid escalation of the nuclear arms race that has occurred since 1963.

The United States must consider also the political reasons for continuing negotiations. The non-nuclear-weapon states, and particularly the non-aligned states, are voicing now their growing opposition to the behaviour of the nuclear-weapon states. These latter states are seen as obstructing the progress towards nuclear disarmament that would be in accordance with art. VI of the *Non-Proliferation Treaty*. Considering the bitter atmosphere at the first two Non-Proliferation Treaty Review Conferences in 1975 and 1980, the United States would do well to remember that we are just two years away from the third. What will happen then if we do not have a multilaterally-negotiated comprehensive test ban treaty? Is the United States prepared to risk a collapse of the *Non-Proliferation Treaty*? Although deficient, it is the only defence the international community has against horizontal nuclear weapons proliferation.

This brings us to the second example of the disregard by superpowers of international treaties. In the United States Congressional elections held on 2 November 1982, the issue of a "nuclear freeze" was included on the ballot in eleven states, fifteen counties and twenty-two cities. A majority in ten states, twelve counties and twenty-two cities voted in favour of a "nuclear freeze". The average vote in favour was about sixty *per cent*. This positive result was obtained despite the Reagan Administration's active campaign, led by the Secretary of Defense, against this issue.

A nuclear freeze would be equivalent to ending the nuclear arms race. This is something to which the United States, together with the United Kingdom and the Soviet Union, is legally committed, being a party to the *Non-Proliferation Treaty*. Article VI of the *Treaty* states that the parties pledge themselves to carry out negotiations in good faith in order to end the nuclear arms race at an early stage. The *Treaty* was signed by, among others, the United States, the United Kingdom and the Soviet Union fifteen years ago and came into force thirteen years ago.

After fifteen years of an accelerating nuclear arms race, the following question must be raised: Are the nuclear-weapon states in breach of their

obligations under art. VI of the *Non-Proliferation Treaty*? More particularly, was the recent campaign of the Reagan Administration against nuclear freeze a violation of art. VI? My own conclusions, based on the above considerations, are as follows. First, judging by their performance so far, one can conclude only that the superpowers have failed in their so-called role as "the trustees for humanity". This expression I quote from President Reagan himself, from a letter addressed to U.S. Ambassador Rowny, chief negotiator at the START talks, delivered on opening day, 29 June 1982. The rest of the world is justified in doubting seriously the real chances of a future as beneficiaries under these self-appointed trustees.

Second, the rest of the world asks to be equal partners in nuclear disarmament negotiations for two fundamental reasons. Alone, the nuclear-weapon states have been unable to solve the present dilemma; and all states, whether nuclear or non-nuclear, aligned, non-aligned or neutral, share a common fate of possible nuclear holocaust.

II. The Arms Race

I shall elucidate these conclusions now by turning to the arms race itself. Both its qualitative and quantitative aspects are relevant.

A. *Qualitative Aspects*

Qualitatively, new weapons continue to be developed that are increasingly capable of higher speeds and greater accuracy. New developments in the conventional weapons field become known rather speedily as the world witnesses even today such tragedies as the wars in Lebanon, and in the Falkland Islands. The world came to grasp quickly, for example, the new capabilities of an Exocet missile.

But while advances in conventional weapon technology, though disturbing, are usually comprehensible, the rate of development of nuclear weapons is almost incomprehensible to the human mind. In the 1982 issue of *World Military and Social Expenditures*, Ruth Leger Sivard writes: "The efficiency of a US car (fuel use to weight) has doubled since World War II; the efficiency of a nuclear weapon (destructive yield to weight) has increased 150 times." And again: "The World War II submarine could sink only passing ships. Now a single submarine can destroy 160 cities as far away as 4,000 miles."

The extent of military research and development is no less frightening. Military research and development exploits at present about 500,000 scientists, or about twenty *per cent* of the world's total scientific resources. In pure

monetary terms, twenty-five *per cent* of the global research and development budget is devoted to military ends. Only twenty-three *per cent* is devoted to four research areas of vital importance to human welfare and human future, *i.e.* agriculture, health, energy, and environmental protection combined. One of the reasons for this gross imbalance is perhaps that, on average, a military product is said to require twenty times more research and development than an average civilian product.

Turning to estimates for particular countries, military research and development in the United States consumes thirty-five *per cent* of the total research and development budget. In Japan, the figure is four *per cent* and in West Germany, it is seven *per cent*. In the United States, total research and development spending continues to decrease as a share of the Gross National Product, while in Japan and West Germany, the opposite is true. Some conclusions can be drawn from these figures regarding the strength, growth and vitality of the civilian economy in these countries, even in these times of deepening economic crises. Let me elaborate: The present state of the economy of the United States compared with those of Japan and West Germany — irrespective of the present cyclical crisis but related to the structural crisis — and the degree to which human, material and financial resources are used for military purposes, together with the general economic policies in the U.S., have already shown their negative effects on the civilian economy and will do so increasingly. In terms of technology, innovations and productivity growth rates, difficulties have been felt for quite some time now. These policies will have continuously negative consequences if the present course is not changed radically.

Another serious problem caused by devoting massive spending to military research and development is the effect of new technology on doctrines and strategies. Improvements in the speed, accuracy and efficiency of weapons force the strategic planners to rethink the way in which they would use the new weapons. Both military and political strategies are forced to change. The now prevalent "flexible-response" doctrine is the obvious example. It is of particular importance to examine the arguments made in its defence.

Proponents of the doctrine contend that the accuracy and efficiency of modern nuclear weapons systems make it possible to deliver "surgical strikes" using "clean bombs" against specific military and political targets of the perceived enemy. These strikes would be made in response to a previous attack, and thus it would be possible to engage in limited nuclear war.

In my view, the doctrine breaks down for two reasons. First, while the theory might appear logical on paper, it cannot be applied to conditions in the actual circumstances of Europe. As the second smallest, most densely populated and most weapon-studded continent, Europe is hardly a stage on which

"surgical strikes" could be played out. The technicians speak of "Circular Error Probable". It refers to the size of the area around a target within which fifty *per cent* of the weapons launched would land. With improvements in the precision and accuracy of weapon systems, this circle is reported to be as small as 100 feet in diameter. This is a wonderful achievement for military research and development, but it means nonetheless that fifty *per cent* of the weapons used would fall outside the circle. In densely populated Europe, even minute variance could result in unbelievable devastation.

Second, in considering nuclear doctrines adapted to the latest technical improvements, the strategic thinker sometimes has to make use of arguments which show clearly the hollowness of the nuclear era. When the doctrine of Mutual Assured Destruction [MAD] came under attack some years ago, it was argued by some strategic thinkers, in attempting to justify new theories, that MAD was unacceptable not only militarily, but also morally. It is difficult to follow that kind of argument. If strategists call a particular nuclear doctrine "immoral" but do not want to give up nuclear weapons, nor even proclaim no-first-use, another doctrine must be established that would be moral, or at least less immoral. The presupposition must be that strategists are prepared actually to use nuclear weapons in war, but are anxious to use them as morally as possible. Hence the flexible response and the counterforce doctrines were born, giving rise to theories of "a limited nuclear war". In turn, these developed into ideas of "a fightable and winnable nuclear war".

As a European, I have every reason to reflect on these new strategies and their effects on other Europeans. It is becoming more and more obvious that limited nuclear strikes, while horrific in themselves, would have, in turn, dire consequences: They would not remain limited. As a result, the "flexible-response" doctrine is encountering increasing public resistance, and has been indeed a catalyst for the peace movements in Western Europe. Ironically, recent attempts by both powers to develop this doctrine further, by the deployment or production of new types of intermediate-range weapons, have served only to expose the contradictory propositions behind the doctrine, and indeed, behind nuclear weapons themselves.

B. *The Dilemma*

We begin to see now the dilemma of our age. Our theories of defence are predicated upon the assurance of our own destruction. To protect ourselves, we must be prepared to destroy ourselves. What is worse, complete and final destruction could be brought about not only by intention, but even by accident.

The need to rid Europe of this insane situation is obvious, but achieving removal of weapons is as difficult as it is necessary. The plethora of weapons that have been implanted almost light-heartedly in and around Europe in the last three decades cannot be removed overnight. And we do not see any indication of a sincere will to remove the threat imposed on Europe by this so-called balance of terror. Herein lies the dilemma: reliance on deterrence leaves the world in a precarious situation at best; the achieving of disarmament appears to be a near-impossible endeavour. On the one hand, we have the hollowness of unacceptable nuclear doctrines, the concept of deterrence and the existence of nuclear weapons themselves. No increased security is gained by any state through a relentless build-up of arms. The only thing increased is the risk of nuclear holocaust. On the other hand, we have the difficult but solvable problem of achieving arms limitation agreements and ultimately disarmament. This is the political and moral dilemma of our age. It is shared not only by the nuclear-weapon states, it is shared by all of us.

From a slightly different perspective, the dilemma has never been expressed more eloquently than by Archibald MacLeish, a great American man of letters. In his essay called "Master or Man", published in 1978, he wrote:

> Prior to Hiroshima it had still been possible — increasingly difficult but still possible — to believe that science was by nature a human tool, obedient to human wishes and that the world science and its technology could create, would therefore be a human world, reflecting human needs, our human purposes. After Hiroshima, it was obvious that the loyalty of science was not to humanity but to truth — its own truth — and that the law of science was not the law of the good — what humanity thinks of as good, meaning moral, decent, humane — but the law of the possible. What it is possible for science to know, science must know. What it is possible for technology to do, technology will have done. If it is possible to split the atom, then the atom must be split. Regardless, Regardless...of anything.

C. *Quantitative Aspects*

The relentless arms race has also its quantitative aspects. Total world military expenditures, estimated for the year 1982 at 650 billion U.S. dollars, are beyond what even the human mind can grasp. To demonstrate that they are completely beyond anything reasonable, I shall give two examples. First, in the 1982 issue of *World Military and Social Expenditures*, Ruth Leger Sivard notes: "The world's stockpile of nuclear weapons is equivalent to 16,000 million tons of TNT. In World War II 3 million tons of munitions were expended, and 40-50 million people died." Second, according to estimates in 1955 by the U.S. Strategic Air Command, 600 to 700 nuclear warheads landing on Soviet targets would be sufficient to destroy completely all defence capability of the U.S.S.R. The United States has somewhere between 25,000 and 30,000 warheads; and, according to available information, the

Reagan Administration plans to increase the number to 40,000. Even assuming that 700 warheads were necessary to destroy Soviet defence capability, for what purposes does the President intend to use the remaining 39,300?

The Reagan Administration has held repeatedly to its firm position that the U.S. has lost its nuclear superiority to the Soviet Union. The position is contradicted equally repeatedly by American domestic authorities, and one is not hard-pressed to find examples. In an article in the 1982 Spring issue of *Foreign Policy*, Editor Charles William Maynes writes:

> America needed superiority in weaponry to make America again "war-proof". Technological dominance would make any attack on the US as immediately suicidal as the attack on Pearl Harbour had been ultimately suicidal for the former military rulers of Japan. Acting on these lessons the US has since World War II led the way in repeatedly introducing new and more potent technology into the arms race.

In the 1981 issue of *World Military and Social Expenditures*, Ruth Leger Sivard notes that in the action-reaction game between the superpowers in the nuclear era, the United States has led the way in all but two of twelve cases of innovations in nuclear military technology. The alleged loss of American superiority is simply not true.

III. Arms Limitation Agreements

A. *Why Failure?*

Why have multilateral disarmament negotiations failed? The question is especially perplexing given that in 1978, the U.N. General Assembly stated unanimously in the *Final Document* of SSOD I that "the continued arms race means a growing threat to international peace and security and even to the very survival of mankind". For decades now, the world community has tried, through political negotiations, to secure genuine and durable peace through disarmament. Despite these efforts, not a single nuclear weapon system has been dismantled unless obsolete and useless. The number of nuclear warheads continues to increase. Why, then, have we failed so dismally?

While the question is open to much conjecture, it is wise to look to both the military and political motives that lie behind a continued arms race. One can discern at least three factors. First, there is "mirror-imaging". Both superpowers have a conviction that they must have at least what they believe their adversary to have. Herein lies the source of the well-known action-reaction problem. Second, and closely related to the first factor, there is the extraordinary secrecy that pervades the arms race. Secrecy poses overwhelming difficulties for efforts to assess the resources and intentions of the perceived adversary. It creates a vicious circle of distrust: secrecy leads to distrust and lack of confidence, which in turn triggers further secrecy. As long

as the vicious circle is kept in motion, so is a never-ending arms race. Third, there is the factor of lead time. With today's sophisticated and intricate technology, the period required for planning, development and production of new weapon systems is about ten years. A lead time of this size causes additional speculation about the intentions and plans of the adversary. What sophisticated new weapons will "they" have ten years from now? What, therefore, must "we" begin developing now in order to keep our place in the arms race?

A second explanation for the failure of disarmament negotiations is found in the manner in which these negotiations have been carried out. I have already noted above the arrogant attitude that the superpowers have brought to the multilateral disarmament negotiations in the forty-nation Committee on Disarmament in Geneva. The fate of the work toward a comprehensive test ban treaty demonstrates the kind of results we can expect from such attitudes. In their arrogance, the superpowers regard the other thirty-eight nations, and even the rest of the world, primarily in the context of their own bilateral relations.

B. *A Moratorium is Needed First*

In an editorial in the May 1980 issue of the *Bulletin of the Atomic Scientists*, Editor-in-Chief, Professor Bernard Feld discusses the idea of a moratorium on weapons development pending the conclusion of disarmament treaties. He considers the main problem to be that the two superpowers negotiate arms control while simultaneously engaging in a vigorous race to increase and to improve the same weapons the negotiations are supposed to control. It is common knowledge now that the pace of negotiations is much slower than the pace of technological development. Efforts to limit, then, would seem to be in vain unless the development of the arms under consideration is frozen during the negotiating period. Prior agreement on a moratorium on further development and deployment is a prerequisite for success in arms limitation negotiations.

Numerous examples prove this point. During various phases of the SALT I talks, the introduction of new "bargaining chips", the multiple independently-targetable re-entry vehicles [MIRVs] and cruise missiles, caused the negotiations to drag. Momentum remained strong and steady nevertheless in the technological development of these new missiles — mankind was blessed with MIRVs and cruise missiles.

The long, drawn-out negotiations on a comprehensive test ban treaty are another case in point. While the work toward such a treaty has stretched over decades now, underground test explosions have continued unchecked by any

agreements whatsoever. The most recent example is the planned U.S. MX missile. In his statement of 22 November 1982, President Reagan introduced this new weapon as a "bargaining chip" in the START talks with the Soviet Union in Geneva. Without a moratorium on these kinds of developments, the likelihood of success in future negotiations is lowered enormously.

Conclnsion: The Futnre

Has disarmament a chance? We are in a race with time, and we are losing. I believe that our chances of success depend upon two factors. Both provide a cause for some hope. The first is the possibility of a fundamental change in power structures. The second is growing public awareness.

There are already indications of fundamental power shifts, and, I believe, the beginning of a decline in superpower influence. We have witnessed already a relative rise in the power and influence of countries like Japan and some members of the European Community. Such shifts in power make it more difficult for the superpowers to exert their military and political influence. Furthermore, there could be major shifts in economic power. Both the United States and the Soviet Union run the grave risk of allowing their economies to falter by continuing the pursuit of a ruinous arms race in times of serious economic difficulties. Thus, the economy could become an important factor in the disarmament process. It is widely acknowledged that one prerequisite of national security is a strong and healthy world economy. It is therefore of utmost importance to identify the factors which have caused our global economic crisis. One finds it difficult not to have the impression that the arms race is one of the major causes. A U.N. Governmental Expert Group that I chaired was charged with carrying out a comprehensive study on the relationship between disarmament and development. After three years of study, our report was submitted to the 36th Session of the General Assembly in 1981. Our analyses show convincingly the devastating effects on the economy caused by devoting human, material and financial resources to the arms race. Based on extensive research, we drew a number of conclusions which can be summarized in two points. First, a fundamental choice must be made. The world can either continue to pursue the arms race with characteristic vigour and accept the heavy burden that it places on the economy, or, it must move consciously toward a more sustainable international economic and political order. It cannot do both. Second, there is a mutual self-interest among all countries in effective disarmament, irrespective of economic and social systems, or levels of economic development. In the words of Dr Christoph Bertram, a strategic thinker of repute, the economy could become a factor for disarmament. Indeed, it is a positive sign that the General Assembly decided in 1982, at its 37th Session, to place this important economic issue on its agenda at regular intervals.

The other cause for hope is rapidly growing public awareness. For a growing number of people, the fundamental issue has changed from one of deterrence and military balance to one of survival. Change is being wrought, albeit slowly, by a growing awareness of the real threat posed by nuclear weapons. For the first time since Herman Kahn published *Thinking About the Unthinkable* in 1962, people *are* thinking about the unthinkable. Suddenly, they have understood that they must do so because military and political leaders, by their rhetoric of "controlled nuclear counter-attacks" and "protracted conflict periods", have made the unthinkable not only thinkable but also possible, if not probable. Much has been said about the imperative need for a change of wills and minds, but we have waited a long time for that change and our patience has run out. People understand now that this present trend must be stopped for the sake of survival. Recently, many of us have gained new hope because of the appearance of this potentially significant political force.

George F. Kennan has called the forceful popular peace movements in Western Europe, North America and Japan the most striking phenomena of the early 1980s. Already they are having an influence upon political events. In Sweden, it is our hope that these movements will continue with increased momentum, and that they will lead eventually to the successful completion of multilateral arms limitation and disarmament agreements.

In my view, these popular movements are crueial. The lesson that we have learned from past negotiations is profound: World political leaders continue to show a dangerous lack of knowledge, insight and imagination in coping with the problems and issues in this, our thirty-eighth year of the nuclear era. They are unlikely to change their modes of thinking. Who, then, can turn around this calamitous course of history? If we can form an international constituency and cast a global ballot for disarmament, then it is we, the people.

1984 and Beyond: Canadian Policy on Arms Control and Disarmament

J. Alan Beesley, Q.C.*

Introduction

Given the complexity, diversity and scope of arms control and disarmament, it may seem ambitious to attempt to summarize Canadian policy in a brief article. However, in light of the intrinsic importance of the subject, and the unprecedented public interest in and concern over the arms race, it seems appropriate to include an outline of some of the salient features of Canadian policy in an issue of a Canadian university law journal devoted wholly to arms control and disarmament.

I. Canada's Tradition of Arms Control and Disarmament

Canada's involvement in arms control and disarmament can be traced back to the *Rush-Bagot Treaty* of 1817 whereby the U.S.A. and Great Britain agreed to limit the size of their naval forces on the Great Lakes, an early example of a bilateral agreement between two Great Powers affecting the fate — in this case favourably — of less powerful countries such as Canada. In more recent times, in 1945, Canada, together with the United States and United Kingdom, proposed the establishment of a United Nations Atomic Energy Commission for the purpose of "entirely eliminating the use of atomic energy for destructive purposes". In August 1957, Canada, France, the United Kingdom, and the United States submitted a "package" of measures in the sub-committee of the United Nations Disarmament Commission including a commitment "not to transfer out of [their] control any nuclear weapons or to accept transfer to [them] of such weapons" except for the purposes of self-defence. Canada was a member of that original sub-committee — comprising also the United States, Great Britain, France, and the Soviet Union — which was established in 1952. Canada has been continuously a member of the Eighteen-Nation Disarmament Committee [ENDC] which commenced its operations in 1962, the Conference on the Committee on Disarmament [CCD] established in 1969, and the forty-member Committee on Disarma-

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ment [CD] set up in 1978. The tradition of active and constructive participation by Canada in arms control and disarmament negotiations has continued unabated and has, indeed, intensified in recent years.

II. The Legal Framework

The "law of disarmament" is not lacking in important and effective examples of conventional law, but is sadly deficient in terms of universal binding norms. While the League of Nations proved unable to prevent war by controlling the arms race, it should nonetheless be noted that the *Covenant* included the declaration that "maintenance of peace requires the reduction of national armaments to the lowest point consistent with national safety and the enforcement by common action of international obligations". Moreover, the *Treaty of Versailles* imposed strict limitations upon Germany's armaments and demilitarized the Rhineland, and the allied powers attempted to establish agreed limits on weapons. These efforts failed when Germany walked out of the 1932 General Disarmament Conference and left the League, although the Disarmament Conference continued intermittently until 1937, when it broke up in the face of deadlock.

The *United Nations Charter* attempted a markedly different approach based on a system of collective security envisaging multinational U.N. forces operating under the direction and control of the Security Council. Unlike the *Covenant*, the *Charter* did not assign a high priority to disarmament. On the contrary, the five Great Powers would retain their armaments and act together as the "five policemen" to ensure the disarmament of Germany and Japan and the maintenance of peace pending the establishment of effective U.N. military forces. The framers of the *Charter* intended to prevent "the scourge of war" by controlling the use of force rather than by the elimination of arms. Thus the *Charter* does not include the elimination of the arms race as a *Charter* obligation. One must search elsewhere for norms.

Canada has argued before the U.N. General Assembly First Committee that the principles embodied in the 1925 *Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare*, signed at Geneva, 17 June 1925, have developed through the customary law process into peremptory norms of law binding upon all states (although over a score of the member-states of the U.N. have not ratified or acceded to the *Protocol*). Even in the case of some of the most important and far-reaching arms control agreements concluded since the Second World War, such as the *Non-Proliferation Treaty*, the *Partial Test Ban Treaty*, the *Outer Space Treaty*, and the *Seabed Arms Control Treaty*, all of which have been accepted by well over 100 states, it is not argued seriously that the principles embodied in such treaties constitute *jus cogens* (that is to say, peremptory norms binding on all states).

Yet the two important "non-armament" treaties, the *Outer Space Treaty*, banning the stationing of weapons of mass destruction in outer space, and the *Seabed Arms Control Treaty*, banning the emplacement of such weapons on the seabed and ocean floor, together wholly encompass two huge environments. Perhaps it is open to be argued that these treaties embody principles that have already developed into normative rules or are in the process of doing so, but definitive conclusions are not possible. Still less success has been achieved in developing peremptory norms with respect to land areas (subject to national sovereignty) and the high seas (beyond national sovereignty), even in the case of the limited field of weapons of mass destruction. Nevertheless, important albeit limited conventional law exists even with respect to these environments, including, in particular, the *Antarctic Treaty* and the *Latin American Nuclear-Free Zone Treaty*. It is not inconceivable that these conventions may be developing into "law-making treaties", laying down peremptory norms.

It is more difficult to make such an argument in the case of the *Partial Test Ban Treaty* and the *Threshhold Test Ban Treaty*, because important nuclear weapons states have not yet become parties, and still less so in the case of the *Non-Proliferation Treaty*, which has well over 100 parties, but which has not yet been adopted by France or China, and which is vigorously opposed by some non-nuclear weapons states. Perhaps there is too much of a tendency to accept arms control treaties as conventional law binding only upon their respective parties and insufficient effort to encourage the greater utilization of the customary law process as a means of translating treaty obligations on arms control into universally binding norms. It is necessary, therefore, to employ a variety of means in advancing Canadian arms control and disarmament objectives.

III. Recent Diplomatic Initiatives

A significant diplomatic initiative was taken by Canada on 1 February 1983, when Canada's Deputy Prime Minister and Secretary of State for Exterual Affairs went to Geneva to deliver a major policy statement in the Committee on Disarmament. His statement is worthy of careful consideration. It was, in fact, much more than a policy declaration; it constituted a part of the negotiating process now underway in Geneva, in particular the negotiations on intermediate-range nuclear forces [INF]. As part of that negotiating approach, Mr MacEachen had arranged to see both the U.S.A. and the U.S.S.R. INF and strategic arms [START] negotiators prior to making his policy statement. Thus, in enunciating the Canadian position, his statement reflected not only the results of the discussions with the negotiators for the two superpowers, but was directed to bringing Canada's influence to bear in those very negotiations.

In his address, the Deputy Prime Minister made a public reaffirmation of NATO solidarity and of continuing commitment to the NATO two-track decision. Such statements were echoed shortly afterwards by U.S. Vice-President Bush, as well as by the Foreign Minister of the Federal German Republic. Rarely does such a series of high level statesmen address the Committee on Disarmament. It is evident that these policy statements constitute an important part of the negotiating process, even on those issues discussed bilaterally outside the Committee on Disarmament.

By the same token, the meetings these statesmen have held with the negotiators on both sides, beginning with those held by Mr MacEachen, are an important element in the negotiating process. It is by such means possible — and perhaps essential — that Canada's voice be heard by both sides on questions of vital concern to Canadians.

Turning to the substance of the policy statement, entitled *Mutual Security: Negotiations in 1983*, it is important to note the overall thrust of the statement: "[A]n increase in mutual security is the only sound basis for effective arms control and disarmament". The message was very clearly addressed to both superpowers. The Deputy Prime Minister quoted Prime Minister Trudeau's statement at the Second United Nations Special Session on Disarmament [SSOD II], stressing that security in today's world cannot be achieved on a purely national basis; that attempts by one side to make gains at the expense of the security of the other ultimately will not work; and that action produces reaction and in the end, neither side achieves a long-term gain.

Mr MacEachen applied these principles in very specific terms to the bilateral intermediate-range nuclear force negotiations. He pointed out that such negotiations can succeed only if both parties accept, as their fundamental objective, increased mutual security rather than unilateral advantage. He went on to explain that it was only as a result of the December 1979 "two-track" decision by NATO, taken in response to the Soviet build-up of intermediate-range missiles targeted on Western Europe, that the INF negotiations were begun at all. It will be recalled that the NATO governments proposed negotiations between the Soviet Union and the United States to limit land-based intermediate-range missile systems on both sides. At the same time, the NATO Alliance agreed to deploy Pershing II missiles and ground-launched cruise missiles beginning in late 1983 if such negotiations were unsuccessful. Mr MacEachen reminded the Committee on Disarmament that while, initially, the Soviet Union was critical of the NATO decision and reluctant to engage in negotiations, eventually, in the autumn of 1980, the Soviet Union agreed to preliminary discussions, and a year later, in November 1981, formal negotiations began.

It is suggested that these events constitute a classic example of the direct application of the principle of mutual security. As was pointed out by Mr MacEachen, there is some encouragement to be derived from the fact that the Soviet Union clearly has recognized that NATO governments have a legitimate concern about the number of SS-20s aimed at their European member-states, and that a reduction is necessary, as evidenced by a recent Soviet proposal concerning possible reductions of such weapons. As stated by the Secretary of State for External Affairs in Geneva, "[t]his in itself is progress. However, it is not yet clear that both sides have accepted that mutual security must be the basis of the negotiations. That is why 1983 is crucial." The events of 1983 will have important and far-reaching implications for 1984 and beyond.

At this stage, it is appropriate to make reference to another important policy pronouncement contained in the February Geneva statement, again one clearly addressed to all parties, and with significant implications for future Canadian policy.

After outlining the principles underlying effective arms control and disarmament negotiations, and emphasizing mutual security as the only acceptable basis for arms control and disarmament,* Mr MacEachen made the following statement: "An attempt by any power to develop a policy which assumes that nuclear war can be winnable contributes to mutual insecurity." He went on to describe this statement as a home truth, albeit directly relevant to the current situation. This statement provides a sharp contrast to some of the rhetoric directed to the other element of the arms control and disarmament equation, namely the necessity for sufficient arms to provide an effective deterrent.

Examples of statements by both sides questioning the long-standing concept of mutual deterrence, which, in turn, is founded on the certainty of "Mutually Assured Destruction" [MAD], are readily available. Canada rejects the "winnable nuclear war" approach, and will resist it. This, it is suggested, is an encouraging fact of life.

*In Dr MacGuigan's statement of 25 February 1982, he indicated the Canadian perception of the crucial issue of the degree of balance of forces between the two superpowers in the following words: "We now face approximate parity at the strategic level between the Soviet Union and the United States, Soviet superiority in intermediate-range nuclear weapons in Europe, and the numerical superiority of the Warsaw Pact in conventional land forces."

IV. Canadian Arms Control and Disarmament Objectives

Canada's long-standing and active pursuit of arms control and disarmament has never consisted of mere policy pronouncements. Canada has proposed and is today pressing forward negotiations on a series of concrete proposals on fundamental arms control and disarmament problems. What follows is a brief summary of recent Canadian proposals which give some indication of the scope, variety and intensity of Canada's position.

The control and reduction of armaments form an important part of Canada's security policy. Canadian priorities remain:

(a) to strongly support negotiations to limit and reduce nuclear arms;

(b) to promote early progress toward the realization of a multilateral comprehensive test ban treaty [CTBT];

(c) to press forward negotiations on a convention to completely prohibit chemical weapons;

(d) to promote the evolution of an effective non-proliferation regime based on the *Non-Proliferation Treaty*;

(e) to work toward the objective of prohibiting the development, testing and deployment of all weapons for use in outer space;

(f) to participate actively in negotiations to limit and reduce conventional forces; and

(g) to seek, step-by-step, to ultimately achieve general and complete disarmament, consistent with the legitimate security needs of states.

The Canadian Government takes every opportunity to stress the importance it attaches to the continuation of the SALT/START process, for example, at the recent meetings in Geneva followed by talks in Ottawa with Vice-President Bush and at later consultations in Washington between Prime Minister Trudeau and President Reagan, as well as in exchanges with the U.S.S.R. through diplomatic channels. In the Committee on Disarmament in Geneva, Canadian expertise is being applied in the search for a comprehensive nuclear test ban and for a ban on chemical weapons. The Chairman of the Working Group on Chemical Weapons is Canadian Ambassador D.S. McPhail. In the Mutual and Balanced Force Reduction Talks in Vienna, Canada is seeking to limit and reduce conventional forces in Europe.

The Prime Minister, in his address to the Second U.N. Special Session on Disarmament on 18 June 1982, proposed a "policy of stabilization", with two complementary components: the strategy of suffocation which seeks to inhibit the development of new weapons systems, and Canada's negotiating

approach aimed at qualitative and quantitative reductions in nuclear arsenals designed to achieve a stable nuclear balance at lower levels. The Prime Minister had proposed the strategy of suffocation at the First U.N. Special Session on Disarmament [SSOD I] in 1978. Its objective was to arrest the dynamics of the strategic nuclear arms race through the realization of four interrelated verifiable agreements designed to reduce the "technological impulse": a comprehensive test ban treaty; a ban on the flight-testing of all new strategic delivery vehicles; a ban on the production of fissionable material for weapons purposes; and an agreement to limit and then progressively to reduce military spending on new strategic weapons systems. As the Prime Minister has noted, "the strategy was never meant to be applied unilaterally". It was always envisaged within the context of negotiated agreements between the nuclear powers.

The strategy of suffocation is being actively promoted in international fora, in particular at the United Nations. Moreover, Canada continues to contribute concretely to more specific discussions which deal with implementing elements of the strategy. Canada has called for the resumption of the U.K.-U.S.A.-U.S.S.R. talks on a comprehensive test ban. In the Committee on Disarmament in Geneva, Canada is participating in the working group on a nuclear test ban and, also, in the work of the Seismic Experts Group which is developing an international verification system for an eventual test ban treaty. Canada has also continued its efforts to effect implementation of the second and third elements of the strategy. Although Canada is also pressing for action with regard to the fourth element, agreements to reduce military budgets cannot be concluded until the U.S.S.R. and its allies assume a more open policy with regard to information about their military spending.

It has been a long-standing Canadian position since the outset of arms control and disarmament negotiations after the Second World War that verification mechanisms are not only the key to the implementation of arms control and disarmament agreements, but in some cases a virtual precondition to their conclusion. It is encouraging that both superpowers are now directing their attention to various aspects of the problems of verification which go to the heart of every arms control and disarmament problem. Canada will continue to pursue most vigorously its efforts to push forward verification studies utilizing expertise inside and outside of government.

V. Canadian Priorities for the Committee on Disarmament

This is an appropriate stage at which to turn to the second part of the policy statement made by the Secretary of State for External Affairs in Geneva on 1 February 1983, namely, Canada's priorities in the Committee on Disarmament. It is worth noting that the statement was made in the full knowledge that with respect to some of these priority issues, Canada's

proposals present difficulties for one or both of the superpowers. Thus, while recognizing the facts of life concerning the limits upon Canada's ability to influence events, Canada has not hesitated to press vigorously for action and has sought support for such action from others where it is needed.

Mr MacEachen emphasized that the pursuit of a comprehensive nuclear test ban is a fundamental — perhaps the fundamental — nuclear issue before the Committee on Disarmament. He urged that the new working group begin to discharge its mandate on that subject as a matter of urgency in 1983. He argued for a step-by-step approach that could ensure that the key elements of a treaty are in place even before a final political commitment to a comprehensive nuclear test ban treaty has been undertaken by the nuclear weapons states.

Mr MacEachen then stressed the importance Canada has always attached to the prevention of the further spread of nuclear weapons. He pointed out that the *Non-Proliferation Treaty* emphasizes the non-discriminatory transfer of peaceful nuclear technology, but provides also for the de-escalation of the arms race by nuclear weapons states. He reminded the Committee that while more non-nuclear weapons states have adhered to the *Non-Proliferation Treaty*, such voluntary renunciation has not been matched by corresponding action by the nuclear weapons states. He suggested that those states with nuclear technology and those without must seek to persuade the nuclear weapons states to live up to their bargain.

A third priority cited by Mr MacEachen was the conclusion of a comprehensive treaty on chemical weapons. He noted that the time is ripe for progress toward a treaty on the prohibition of the development, production and stockpiling of chemical weapons and on the destruction of existing stocks. He referred to the allocation of funds to enable Canadian technical experts to be made available to the Canadian Delegation for longer periods to enhance the active role Canada has been playing in the Chemical Weapons Working Group.

Mr MacEachen turned then to the sensitive question of weapons for use in outer space.* He urged the Committee to begin as soon as possible its essential task of defining the legal and other issues necessary to build upon the outer space legal regime and made clear Canada's intention to participate actively in this work. He concluded by urging the establishment of a working group on this subject.

*Critics of the *Outer Space Treaty* as a mere "non-armament" convention, agreed to by the superpowers in their own self-interest, overlook the possible consequences of the non-existence of an agreement precluding claims to sovereignty and banning the emplacement of weapons of mass destruction in outer space or on celestial bodies; it is not hard to imagine the potentially serious consequences of the U.S.A. landing men on the moon and the U.S.S.R. landing space vehicles on the moon in the absence of prior agreement on such a treaty.

VI. Canada's Security Policy

Various questions raised about Canada's policy on arms control and disarmament and some suggestions for future policies resolve themselves into a single issue, namely, Canada's role in two collective defence arrangements, NATO and NORAD. It will be recalled that a searching examination of Canada's defence policy and potential contribution to the maintenance of world peace was carried out by the Canadian Government in the late 1960s. At the end of this study, on 3 April 1969, Prime Minister Trudeau delivered a public policy pronouncement which reads, in part, as follows:

> The Government has rejected any suggestion that Canada assume a non-aligned or neutral role in world affairs. Such an option would have meant the withdrawal by Canada from its present alliances and the termination of all cooperative military arrangements with other countries. We have decided in this fashion because we think it necessary and wise to continue to participate in an appropriate way in collective security arrangements with other states in the interests of Canada's national security and in defence of the values we share with our friends. . . . In summary, Canada will continue to be a member of the North Atlantic Treaty Organization and so cooperate closely with the United States within NORAD and in other ways in defensive arrangements.

Canada's membership in these collective security arrangements constitutes an important element of Canadian security policy.

It is widely accepted that there is a virtually symbiotic relationship between arms control and disarmament on the one hand, and defence on the other. It is necessary, therefore, to expand upon, if only briefly, Canada's policy for national security. This policy was expressed recently by Canada's then Secretary of State for External Affairs, the Honourable Mark MacGuigan, to the Standing Committee on External Affairs and National Defence on 25 February 1982. Dr MacGuigan pointed out that Canada's security policy has three complementary thrusts: "They are (1) deterrence of war through the collective security arrangements of NATO (the North Atlantic Treaty Organization) and NORAD (the North American Aerospace Defence Command); (2) active cooperation in efforts to achieve equitable and verifiable arms control and disarmament agreements; (3) support for peaceful settlement of disputes and the collective effort to resolve the underlying economic and social causes of international tensions." This long-standing security policy of Canada remains, it is suggested, a further fact of life for Canadians seeking to develop realistic and attainable arms control and disarmament policy options for 1984 and beyond.

The reference made to "deterrence of war" is an important one, the more so in light of the attention now being focused in Canada and in other NATO countries on the whole concept of deterrence. In the statement just quoted, Dr MacGuigan went on to underline that "Canada recognizes the need for collective efforts to deter aggression against the North American and Euro-

pean regions of the North Atlantic alliance. It supports and contributes to this defence effort. We are members of an alliance which relies on a deterrent strategy in which nuclear weapons play an important part. This is unavoidable in the world as we know it. . . . The NATO strategy of flexible response and forward defence depends on our being ready and able to respond to aggression at whatever level is necessary to counter it. The nuclear weapons of the United States and other NATO allies make an essential contribution to the security of Canada and of the alliance as a whole."

It is this very policy, this further "fact of life" for Canadians, which is being questioned by some in Canada, and it may be worthwhile therefore to examine the policy a little further. In the White Paper *Foreign Policy for Canadians — United Nations*, the question is dealt with as follows:

> At the present time and in the foreseeable future, the ultimate preventative of war between the super powers is the mutual balance of nuclear deterrence — that is, the existence in both the United States and the Soviet Union of a credible capability to inflict unacceptable retaliatory damage in a nuclear exchange. However, a sharply accelerated pace in the competitive evolution of strategic nuclear weapons could upset the existing balance, which constitutes a credible deterrent, and make it less stable. Potentially destabilizing developments in the strategic arms race are capable of presenting grave risks for international security in the 1970s. This adds urgency to the search for successful nuclear arms control measures.

The relationship between deterrence and disarmament was dealt with by Dr MacGuigan in the statement previously referred to, in which he emphasized that Canada's support for the maintenance of forces sufficient to deter aggression and to defend the NATO area is entirely consistent with Canada's commitment to a vigorous arms control and disarmament policy. He pointed out that the two policies are more than consistent; they complement and support one another, and together constitute a single coherent policy serving the same goal of enhancing security and preserving peace. Dr MacGuigan emphasized also that only on a basis of undiminished security can nations be expected to accept limitations on the numbers and quality of their weapons. It is suggested that this thesis is a fact of life for all states and all peoples for 1984 and well beyond. It was this concept of "mutual security" that was later emphasized by the Prime Minister at SSOD II and developed further by Canada's present Deputy Prime Minister and Secretary of State for External Affairs at the Committee on Disarmament in the February policy statement.

VII. Attainability of Priority Objectives

The Geneva policy statement indicates very clearly that in the view of the Canadian Government, 1983 is a crucial year for both bilateral and multilateral arms control and disarmament negotiations. It makes equally clear the views of the Canadian Government as to the priority areas for action in 1983 — and, as a consequence, for 1984 and beyond, because few if any of the

Canadian objectives can be attained in the space of a single year. The time it takes to negotiate arms control and disarmament agreements even in the best conditions is, of course, one of the most significant facts of life for those engaged in negotiating on such issues.

It will be noted, moreover, that in attempting to determine which important subjects, all needing urgent attention, should be given priority over others, difficult choices are entailed, the more so because it is already evident that Canada's priorities are not necessarily those of the Soviet bloc or the non-aligned "Group of 21", who have somewhat different perceptions from the West and from each other. Thus, another fact of life is that it is not possible to do everything at once, and Canada's priorities, such as the strategy of suffocation, may not be those of others.

Public opinion is having an important and highly desirable impact in the whole field of arms control and disarmament, at least in Western countries. Those committed to the pursuit of arms control and disarmament, both in and out of government, have long sought to awaken public opinion to the crucial nature of the issues involved. Clearly, public opinion is now deeply engaged in these matters. Equally encouraging is the clear evidence that there is a very broad spectrum of interest groups and individuals from all walks of life who are taking a serious and sustained interest in these crucial issues.

Not infrequently, the question is posed: "What can Canada do?" It is necessary to be realistic and to recognize the constraints within which a country which is not a Great Power can influence events. It is equally essential, however, to ensure that every ounce of pressure that countries such as Canada can bring to bear should be exerted.

The "strategy of suffocation" presented by Prime Minister Trudeau at SSOD I, and developed at SSOD II, includes, for example, a ban on the flight testing of all new strategic delivery vehicles and a ban on the production of fissionable material for weapons purposes. It has been pointed out on a number of occasions by the Prime Minister that the strategy of suffocation will not be implemented by Canada unilaterally. There is a problem as to how much can be achieved with respect to such objectives if they are not supported actively by the Great Powers, as well as by other countries of both the industrialized and developing world. The outlook is not always encouraging, but it reflects the basic fact of life for negotiators. Canada must keep up the pressure by every available means and attempt gradually to expand support for such objectives. It is a lengthy and difficult process. Those charged with the task must bring to it commitment and creativity, coupled with patience and perseverance. It is essential and, indeed, urgent for Canada to participate in the process of developing imaginative, realistic proposals, utilizing every legitimate means to seek support for them.

A Political Agenda for Arms Control: A Canadian View

Allan Gotlieb and Jeremy Kinsman*

In the interwoven complex of politics, security and arms control, Canada, like other non-nuclear powers, has only limited influence over strategic negotiations, though Canadians have as much interest as anyone in their outcome. Is there a role available, for which Canada is specifically suited? What is the most effective way Canada can contribute to the stabilization of international relations? As an advanced industrialized country with a global foreign policy, Canada should continue to use its influence on a comprehensive and global level to help define the direction and character of arms control. This involves playing a creative role in establishing the minimum level of confidence in East-West political relations which viable arms control agreements require.

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"It wouldn't take much to disarm Canada", General Burns is said to have remarked once.

Canada may seem to be an under-spender on the military side of the Government budget, by the norms of most NATO countries, Warsaw Pact countries and many in the Third World. But Canadians generally consider our spending levels — which, incidentally, meet recent NATO numerical commitments — as being in line with our national needs and international role. We have a distinguished war record and a respected peace-keeping record, but less of an arms tradition than most countries, due no doubt to the security of our borders in our 116 years of nationhood.

Our economic and other interests support an active multilateral and bilateral diplomacy, as well as a strong development assistance programme. But Canadian interests also argue decisively for active participation in both collective security and disarmament activity. Canada's commitment to NATO is a function not only of our international role but of the way in which we have linked Canadian interests to the allies with which we have most in common as a nation.

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Canada's strong role in disarmament activity has always been a natural calling, with broad public support and strong specialized constituencies. While arms control is now publicly appreciated as the great over-arching international issue of our times, to the point where public concern approaches a level of crisis, this appreciation has been sporadic, rising with periods of East-West or, more specifically, U.S.S.R.-U.S.A. tension. But Canada has been active throughout the years since World War II. There is not a multilateral arms control discussion in which Canada has not played a leading part.

While the intermediate-range nuclear force [INF] discussions have been the object of almost unprecedented consultations in NATO, strategic arms control negotiations are basically bilateral, between the U.S.A. and the U.S.S.R. Canada, like other non-superpowers, has limited influence over developments. In a general and comprehensive sense, Canada may have a position of some abstract moral authority as the first state which voluntarily eschewed nuclear weapons, particularly in respect of the vital issue of nuclear non-proliferation. But the key negotiations today are exercises in comparative strategic security analysis. Canadians consider that our location is strategic in a global sense, and that Canada's vast expanse of territory makes it particularly so in terms of the calculations of distance and speed which, along with the accuracy and destructibility of modern nuclear weapons systems, form the context for strategic arms control negotiations. In a palpable way, Canadians know that the factor of space in these calculations is often our space.

This is not a distinction which has very much impact internationally. We seem to others a relatively secure state which has decided, in its own interests, not to have any strategic arms, nuclear or conventional, which need be controlled. As such, we do not seem to be in a primary position to influence the points of view of countries which do live with a more concrete sense of threat to their security.

Yet, of course, Canadians judge their security to be very much affected by world events. We feel vulnerable. The controversy over the possibility of testing over Canadian territory the guidance systems for U.S. cruise missiles has become a focus for this concern about nuclear risk, as well as the junction point for these different streams of perception of Canadian policy, practice and geography.

Those who oppose the testing of cruise missiles over Canada generally reflect the view that there is an advantage in influence to be gained by Canada not being associated with the testing of this weapon system, even in such an indirect and conditional way, because it diminishes their sense of Canada's moral authority. In their eyes, the exercise would seem to taint us in a way we have not been tainted before, and in their view we shall have helped to accelerate the arms race. The point of view deserves respect.

But we are members of an alliance which has judged the cruise missile as necessary because of Soviet deployments and developments, and unless the U.S.S.R. changes its position on the matter, it is politically essential for the allies to go through with deployment in Europe. As to the cruise missile itself, its introduction is less destabilizing than not responding as an alliance to the U.S.S.R. SS-20s, whose introduction is indeed destabilizing. Only an adequate military balance can bring about the stability necessary for arms reduction. The cruise is a significant change in weapons development but is not in itself particularly destabilizing because it is not in any sense a first-strike weapon. It poses verification challenges, but these are less daunting than the risks represented by other weapons systems of far greater destructive and destabilizing potential, and of more ominous innovative significance, such as small, mobile, multi-warhead ICBMs. In its air-launched mode, cruise missile verifiability is dependent on that of its aircraft launcher, a relatively feasible act of verification by national technical means. In a sea-launched mode, the missile is similarly dependent on ships and submarines which may not always be verifiable, but which possess other, more destructive, missiles as part of their inventory. The ground-launched cruise missile is already almost unique in that its deployment, at least in Europe, is subject to the arms control negotiations (in which Canada does have a consultative part) under the NATO two-track decision of 1979. In other words, there is something of a brake on the deployment of the system, if both East and West together choose to use it.

This is not to dismiss the cruise missile controversy as being irrelevant. But the more pertinent questions are of a broader nature: What can Canada do to promote the increase of mutual security that Mr MacEachen noted in Geneva is "the only sound basis for effective arms control and disarmament" so that the arms race can truly be "suffocated" as Pierre Trudeau proposed to the United States in 1979, by agreement and action on *both* sides?

There are ways. Arms control efforts over time have generally focused on weapons hardware and technology. They still need to pursue that track. But the link between this track and practical political competition at the basis of the arms race needs much more explicit examination. For years, arms control diplomacy has lagged behind developments in technology, political relationships and, ultimately, strategies. The technology curve has outpaced consistently the content of agreements to control weapons. The world has not been able to harness and limit the increasingly menacing threats of new technology, with the exceptions, perhaps, of the 1972 *Anti-Ballistic Missile Treaty* between the U.S.A. and the U.S.S.R. and the *Outer Space Treaty* which limits the emplacement of weapons of mass destruction in orbit in outer space. In one of the seminal observations of our century, Einstein judged that the "splitting of the atom has changed everything save our mode of thinking and thus we drift toward unparalleled catastrophe". The drift is in the be-

haviour of nations, as well as in our inability to devise and negotiate viable arms control agreements, or more precisely, to define the inextricable relationship between the two. Political relations between the U.S.A. and the U.S.S.R. have deteriorated, for a variety of reasons, to a point where arms control agreements which must be founded in mutual confidence and security are much more difficult to negotiate.

The combination of technological advance and political distrust also encouraged the apparent proliferation of war-fighting strategies on both sides which have left the Western public aghast. Strategy, moreover, is adapted to weapons development, rather than *vice-versa*. However, strategy seems to be determined by the emergence of weapons meant to *fight* nuclear wars, rather than to *deter* them, making a military banality of the dangerous doctrine of nuclear use. The public's anxiety has been stirred by offhand public remarks by strategists. In recent months, such loose talk of "prevailing" in a nuclear war or a "limited" war has pretty much ceased. That is good because, as Mr MacEachen noted, any "attempt by any power to develop a policy which assumes that nuclear war can be winnable contributes to mutual insecurity". There are few in authority in the West prepared to believe that there can be a "victor" in a nuclear war. There are few now arguing that a "limited" nuclear war, involving controllable exchanges, can be a legitimate or sensible national pursuit or possibility. The political sentiments in Western Europe have demonstrated amply the unacceptability of such doctrine: a nuclear war "limited" to Europe would of necessity be "total" for Europeans.

All leaders in the West appear genuinely committed to arms control agreements with the U.S.S.R. But views of what is possible inevitably vary.

Canada's contribution to the process should be diplomatic and political, as well as technical. East-West relations have always been an area of emphasis in Canadian foreign policy activity: adapted to the arms control context, this emphasis has the potential for a contribution of real value. Our influence has to be spent on improving the means of preventing nuclear war. We should help to clarify the essential elements in arms control. Canada can continue to contribute to the development of an adequate comprehensive and universal framework for viable arms control agreements between the U.S.A. and the U.S.S.R. Countries other than the superpowers have specific views and interests, and Canada is aptly placed to understand and represent them. Multilateral negotiations toward international agreements on the comprehensive banning of nuclear test explosions, chemical weapons and all weapons for use in outer space remain vital. Moreover, like other countries such as Sweden, the Canadian reputation for multilateral diplomacy and technical skill enables a national contribution to the technical side of arms control negotiations — such as on the principles and techniques of verification.

In our stress on the political and diplomatic context for international security, we should also employ as much diplomatic leverage as possible in favour of preventing further proliferation of nuclear weapons. We should continue to pursue peaceful means for resolving conflicts, in the United Nations and elsewhere.

But above all, we need to do what we can to promote the return of some confidence in the U.S.A.-U.S.S.R. relationship. That relationship is key to arms control and world peace. Without a minimum of confidence in each other, the great powers are inherently insecure, and the rest of the world is hostage to their insecurity. Basic security against nuclear war is unavailable if one side or the other is seeking competitive advantage. Arms control is an act of security. The security of one superpower has to reside in the security of the other. The concept of strategic advantage must be abandoned.

The U.S.A. and the U.S.S.R. need to recognize mutually that arms control agreements require the confidence of better mutual relations. The notion that the negotiation of arms control agreements will in itself be the only real test whether better relations are possible is false, though undoubtedly arms control negotiations are an important test. Better relations are important prior ingredients of arms control negotiations because arms control agreements are by definition rooted in confidence, and the security which only justified confidence can impart.

International behaviour is vital to the process. The negotiations which we associate with the process of detente more than a decade ago did not attempt to determine what sort of international behaviour was acceptable outside the area of Europe. The United States was, after all, heavily engaged in Vietnam at the time, in large part because of the perceived activities of the North Vietnamese, Russian allies. Since then, the Soviet Union has invaded Afghanistan, and has acted elsewhere in ways which have undermined American official confidence in Soviet intentions. Behaviour is vital to building the confidence which permits the sense of security necessary for viable arms control agreements. If arms control agreements are to be viable, they must be supported by restrained international behaviour, both to prevent crisis, and to restore and sustain confidence.

On the other hand, arms control agreements cannot be linked to extraneous disputes between East and West. They are objectively in our interest, if they are fair, and should not be held hostage to concessions somewhere else. Prime Minister Trudeau stressed at The University of Notre Dame that arms control agreements are of such overwhelming importance to the interest of all humanity that they must be set above and apart from the normal intercourse of international politics.

We must be realistic. In saying that improved U.S.A.-U.S.S.R. relations are the key, our concept of "better relations" is of necessity a limited one. We cannot ignore the obstacles to better relations across the board which are formidable. The Soviet Union is a closed, totalitarian society having to cope with threats to its hegemony in Eastern Europe from the open, more attractive societies of the West. As Soviet inability to observe the principles of the Helsinki Accords indicates, truly improved relations across the board of activities are proscribed by the closed nature of Soviet society. However, there are real possibilities for improvement in the Soviet-American relationship if we take specific and objective aim at the primary target of reducing tensions between the U.S. and U.S.S.R., so as to build the necessary political and security confidence, and thus permit viable understandings in the areas of mutual security and arms control.

For this to happen, we need better communication between the principals and better international machinery for dealing with crises. Canada should encourage both. We should not over-estimate our influence over either superpower; each is unwilling to derogate to any third party any part of its control over vital interests in relations with the other.

The U.S. does consult with its NATO allies but on strategic questions it is motivated primarily by its unique responsibilities. But at least Canada can work on encouraging the development of a comprehensive international political framework, leading to consensus about international behaviour. Such a comprehensive, conceptual framework should reflect the belief that disarmament is bound up with concepts of security, stability, confidence, and political relations in such a way and to such an extent that the discussion or presentation of such techniques in a vacuum is without substantive purpose. The framework could be a check list of rules of the game by which the negotiators and the international community could judge the validity of arms control proposals. Canadian diplomacy could promote the acceptance of the rules and promote the conditions whereby each rule could be validated, thereby also contributing to a political consensus.

Here, then, are ten suggested rules of the game:

Rule 1. Simple and urgent proposals: Because there is clearly a climate of public anxiety and confusion over the strategic arms control situation, proposals for arms reductions must be understandable enough to address public concern. They must be aimed as well at a relatively *urgent* conclusion, since there is instability in prolonged negotiations. Moreover, prolonged negotiations become a self-defeating process because technological change makes established positions obsolete.

Rule 2. Comprehensiveness: Proposals should be framed in as comprehensive a strategic-security framework as possible. This means that nuclear equality can probably not be achieved system-by-system across the board.

Rule 3. No strategic gain: Arms control proposals should not be attempts to make strategic gains at an adversary's expense. They should not be attempts to win the war by other means.

Rule 4. Enhance mutual security: Arms control agreements must have as their objective the provision of greater security for both sides, but at a lower level of armament, reinforcing the need that they be as comprehensive as possible. Obviously, both sides have to be convinced that any agreement does enhance its security and the United States has special requirements to be able to sell an agreement publicly and politically on that basis.

Rule 5. Emphasize the destabilizing systems: Since arms control negotiations should be as comprehensive in approach as possible, they should emphasize the most destabilizing factors and features. For this purpose, they should try to address these issues at the outset, to seek agreement on respective perceptions.

Rule 6. Protect the future: Proposals should address explicitly the issue of new weapons systems as well as specific existing ones. They should be careful not to make the environment for arms development innovation in the future too permissive because of vagueness or omission of constraints on novelty.

Rule 7. Quality as well as quantity: — A qualitative freeze: The emphases of arms control proposals should be qualitative as well as quantitative, and the end effect of these proposals should be to bring about a qualitative freeze on testing, development and production of new weapons systems. Obviously, such a freeze has to be verifiable. Research cannot realistically be included. We must assume that research into a higher state of the arms art will not be verifiable, and continuing research can be a function of continuing security.

Rule 8. A code of conduct: Proposals for arms control and reduction should be accompanied by political understandings, such as an agreed code of conduct, to increase confidence on both sides regarding respective intentions and interests. Without linking arms control to extraneous political issues, the ground rules for interuational behaviour bearing upon security interests should be clarified, something which detente did not accomplish.

Rule 9. Crisis communications: Disarmament proposals should be reinforced by more explicit and effective provisions for better crisis communication between all parties, allowing for constant monitoring and interpretation of events. Such crisis communication should be within the context of regular

communication in the sense of continuing meetings and dialogue between the U.S.A. and the U.S.S.R., including summits.

Rule 10. Verification is key: The validity of any proposal has to be subject to reasonably thorough agreed provisions for verification. Indeed, general principles of verification should be explored and negotiated as objective entities. Canada could announce its own special contribution to the development of such principles — an international disarmament verification centre.

These are rules of the game which arms control negotiators will obviously recognize. Indeed, in recent months, some have been given prominent emphasis. However, we suggest them as a balanced set of possible political and behavioural checkpoints along the way to a reliable arms control process.

For decades, Canadians have been at the front of arms control efforts at the United Nations and elsewhere. But our own security position has often seemed to put us more or less on the outside of critical bilateral strategic negotiations. This is more apparent than real. We do have a role in promoting essential arms control. Even though, for the most part, the main burden of negotiations is bilateral, we can try to make better sense of our political world, and assist in the development of international instruments which can provide real security for all the countries concerned.

BOOK REVIEWS

CHRONIQUE BIBLIOGRAPHIQUE

The Fate of the Earth. By Jonathan Schell. New York, N.Y.: Knopf, 1982. Pp. 256 [$11.95 U.S.].

I have read this book three times, and I intend to read it again; for it is one of the most important books that I have ever read. Its message is clear and compelling and, unlike many "serious" books, it is extremely well written. It is even eloquent, but at the same time as logical in its presentation as a mathematical formula. It may even be a masterpiece.

But reading Schell's book is not exactly a pleasant experience. For the conundrum posed — one which our generation must answer — is perhaps the hardest question with which mankind has ever had to cope. Can we save our world, ourselves, the yet unborn, and indeed the very memory of civilization from the imminent peril of nuclear extinction?

There is much about physics and about philosophy in the book, but its central message is political. And that is one reason why the book is especially important for lawyers and law students. For lawyers have a special responsibility and a key role to play in the creation and development of the new world political structures that must be set up if the threat of nuclear extinction is to be met. The contemporary state system is, as Schell demonstrates conclusively, obsolete. It must be replaced by a new and radically different world political and legal order. What is necessary is nothing less than a revolution in world politics and institutions. "We are speaking", he writes, "of revolutionizing the politics of the earth".

Self-styled "realists" may argue that this task is impossible given the kind of people we are and the kind of world we live in. God help us, they may be right. But true realists will put their money on the possibility that they may be wrong. All of Schell's readers may not agree with this analysis or his conclusions; but even the sceptics must agree that, as long as there is even the possibility of a nuclear holocaust, or even of something "less" than that, it is only elementary prudence to begin to take steps to prevent it. The priority item on the world's political agenda is therefore to find a solution to the conundrum. Our political leaders (and we the people who are responsible for keeping them in power) must address themselves, at our peril and without further delay, to the business of creating the new kind of world order that the situation demands. If "reality" means anything, this goal is its urgent business. What may now seem impossible must be made possible. We have no other choice.

There is little room in the world in which we now live for happy-go-lucky optimism. But optimism is still the best working hypothesis. Time however is not on our side. "Evolution was slow to produce us", says Schell, "but our extinction will be swift; it will be literally over before we know it. We have to match swiftness with swiftness".

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The Global Politics of Arms Sales. By Andrew J. Pierre. Princeton, N.J.: Princeton University Press, 1981. Pp. 352 [Cloth $20.00 U.S.; Paper $7.95 U.S.]

Influence or Quid-Pro-Fiasco?: The Global Predicament of Arms Sales

In global terms, measured in constant dollars, arms sales more than doubled from U.S. $9.4 billion in 1969 to U.S. $19.1 billion in 1978. Currently, over seventy-five *per cent* of total arms transfers are destined for the Third World. The United States, the Soviet Union, France, the United Kingdom, and West Germany supply over eighty-five *per cent* of these weapons. Nations supplying arms have justified this activity as an instrument of their respective foreign policies. Yet, the ability of arms sales to bolster or undermine a supplier's foreign policy depends upon a mixture of national motives and often unpredictable international conditions and circumstances. These dynamic variables include: the potential political influence and leverage to be gained against an ideological adversary; the potential access to military bases; the trade-offs of long-term risks and short-term benefits; the dovetailing of weapon sales with other foreign policy goals; the effect of sales on regional stability; the political stability of the recipient nation; and the use to which the delivered weapons are put.

Such a complicated business does carry inherent risks for the "merchants of foreign policy"; what one day was a measure of political influence could the next become a foreign policy fiasco. Examples of *quid pro quos* turned *quid pro fiascos* are easy enough to find. Witness President Nixon's sales of "any arms short of nuclear weapons" to the Shah of Iran, weapons which later fell into the hands of the revolutionary Ayatollah Khomeini; or the Soviet expulsion from Egypt after many years of committing substantial numbers of arms and advisers to that country. Arms transfers can also act as a source of both domestic and foreign political division as was seen in the American sale of Airborne Warning and Control System [AWACS] aircraft to Saudi Arabia, and as is currently being illustrated by the divisive European debate over nuclear arms transfers, namely United States Pershing II and cruise missiles.

Risks for Third World recipients are also considerable. The drive toward nationalism and self-reliance, combined with an inadequate technological base for arms production, serves to spur on Third World demand for the acquisition of sophisticated weapons from abroad. One result is that expendi-

tures on arms have risen twice as fast as development assistance. Scarce resources that could be used more efficiently for economic development are often diverted for arms purchases, making domestic stability even less firm. Guns instead of butter may cause local populations to take up guns in the name of butter; of course, guns can be used to stifle domestic opposition as well. In this way, arms transfers can create fiascos in the developing world.

Andrew Pierre explores this global predicament in his Council on Foreign Relations book, *The Global Politics of Arms Sales*. Pierre, travelling to twenty countries to compile his well-researched findings, concludes that "arms sales are foreign policy writ large" and "must be seen, essentially, in political terms".[1] Organizing his work into sections on dilemmas, suppliers, recipients, and restraints, the author has added constructively to an increasing body of literature on this complicated subject. Much academic attention has already been focused upon these issues by the Stockholm International Peace Research Institute [SIPRI], the International Institute of Strategic Studies [IISS], and by the Council on Foreign Relations [CFR].[2] A more journalistic treatise, by Anthony Sampson,[3] has discussed the Realpolitik of "the merchants of death". Pierre's book is a balanced blend of academic research and anecdotal journalism, making for an informative and readable volume.

There do seem to be, however, some lacunae in Pierre's analysis. The author expressly delineates the problems that arms transfers pose for the suppliers *as nations*, with particular emphasis on the United States, without discussing adequately the role that private companies play in creating these dilemmas. The politics of arms sales also involve the corporate politics of contracts and profits. A chapter on the "politics of financial reward" would help explain the micro-economic motivations of the arms trade.

While suggesting that President Reagan replaced an inconsistent Carter Administration arms sales policy with an "overly permissive" one, Pierre could have gone further to elaborate upon the ramifications of transfers for regional security and nuclear proliferation. In his short subsection on "Nuclear Proliferation and Conventional Arms Sales",[4] the author says that "the Reagan administration is far more inclined to sell arms for the purpose of reducing motivations for obtaining nuclear weapons",[5] but he does not seem to recognize that this very policy could serve to create the regional instability that whets the atomic appetite.

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[1] A. Pierre, *The Global Politics of Arms Sales* (1982) 3.

[2] See, *e.g.*, A. Cahn, *et al.*, *Controlling Future Arms Trade* (1977). See also United States Congress, *Changing Perspectives on U.S. Arms Transfer Policy* (1981) (A Library of Congress Congressional Research Study).

[3] A. Sampson, *The Arms Bazaar* (1978).

[4] *Supra*, note 1, 29-31.

[5] *Ibid.*, 30.

Pierre prefers instead to focus upon proliferation in the quantity and sophistication of conventional arms sales. In the past, most arms transfers to less-developed countries were made up of obsolete weapons of the major powers. Increasingly, and particularly in the case of American and Soviet exports, more advanced weaponry has been delivered. In 1960, for instance, only four developing nations had supersonic aircraft; by 1977, the total was forty-seven. The Middle East receives fifty *per cent* of total world arms sales and holds the largest regional share of transferred sophisticated weaponry. Latin American acquisitions have tripled over the last decade, and the sale of F-16 fighter aircraft to Venezuela will introduce one of the world's most advanced weapons into that region for the first time.

The proliferation of sophisticated arms transfers, according to Pierre, is an integral element in the conduct of foreign policy, especially for the U.S. and U.S.S.R. As an intended vehicle for the extension of ideological influence through the demonstration of technological prowess, arms sales have become a prime element in superpower competition. Though ideological concerns dominate the arms transfer policies of the superpowers, other suppliers such as France, the U.K. and West Germany are motivated primarily by other national concerns: access to vital raw materials, maintenance of employment in industry and balance of trade. France continues to pronounce a goal of national independence and autonomy, even though its arms industry has become excessively dependent on exports.

Considering the diverse motives of both suppliers and recipients, is there any real hope for controlling arms sales? Fuelled by competing national interests, the increasing volume and sophistication of arms transfers is fast racing beyond the international political means of control. It is paradoxical that international law is predicated upon the principle of cooperation between sovereign states, and yet the self-defined interests of states act consistently as obstacles to agreement and consensus. Pierre calls for a "supplier's code of conduct". In so doing, he is not the first to suggest the need for multilateral restraint. Unfortunately, effective multilateral mechanisms have proven more elusive than the general recognition of the need for them. Perhaps Mr Pierre can elaborate upon this dilemma in his next book. For the time being, however, he has accomplished what he set out to do in his preface: he has increased our knowledge of this perplexing global predicament.

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New Directions in Disarmament. By William Epstein and Bernard T. Feld, eds. New York: Praeger, 1981. Pp. 222 [$31.95 U.S.].

The efforts to work out meaningful disarmament arrangements through treaties and other less explicit understandings which are designed to arrest nuclear proliferation and to achieve control over conventional armaments have confounded for far too long both political leaders and international negotiators. The management of this man-made disaster has remained beyond the grasp of world leaders, whether they are relatively strong and in office for extended periods, or refreshingly new and blessed by the imprint of open democracy. The agony and frustration of this failure, with its attendant consequences for human survival, have been the subject of scholarly analysis for the past four decades. In the vast literature on disarmament, the writings of William Epstein have been outstanding and widely influential.

New Directions in Disarmament, edited by Epstein and Bernard Feld, is a compilation of short papers prepared by a group of some twenty scholars drawn from varied social, political and physical science backgrounds. They met informally as an international Pugwash group to search for new ideas and new directions. They hoped that their contribution would be helpful to the ensuing deliberations of the Second Special Session on Disarmament of the United Nations General Assembly. For a number of reasons, this goal remained unfulfilled. Not unexpectedly, the Soviet side found itself unable to take part in the Pugwash deliberations, and the resulting product reads more like the reports on disarmament we are accustomed to reading in *Scientific American* or *Time* magazines. It is not that the product is pedantic or its treatment pedestrian; the perspectives brought to bear on this, the most important and vital issue confronting humanity remain, nevertheless, those of North American liberal thinkers, mostly from the United States. There is a token Canadian presence and some less prominent "international" participation. In any case, the events of the past two years have largely overtaken the limited hope or guarded optimism manifested by the participants at this symposium. Despite all these negative aspects, *New Directions in Disarmament* is a most useful and admirably written book.

In the substantive introduction to the book, the editors explain the history, purpose and nature of their deliberations. The issues they cover extend, happily, beyond the highly technical, acronym-jargoned specifics to include such matters as confidence-building measures, the scope for a global monitoring system through the United Nations, the problems of arresting new armament technologies in outer space and on the deep seabed, unilateral initiatives, and the role of non-nuclear states in achieving a balance and, possibly, some progress in disarmament negotiations.

Alessandro Corradini discusses the role of the United Nations Disarmament Commission and the usefulness of a smaller working body such as the Committee on Disarmament. Herbert Scoville Jr, a retired United States Government official, describes the problems created by advancing military technology. Paul Warnke and George Ignatieff both deal with reforms of the SALT negotiating process. Bernard Feld, a physicist, proposes a freeze on the development and deployment of new weapons. William Epstein makes a strong argument for cutting off the production of fissionable material, for a phased reduction in the militarized uses of such material, and for its ultimate transformation to peaceful uses. Rod Byers and Joel Wit discuss "sanctuary" proposals.

An equally important aspect discussed in the book is the role of non-nuclear-weapon states in disarmament negotiations. Sayed Yassin (Egypt), Shalheveth Freier (Israel) and Joseph Rotblat (United Kingdom) explore in a scholarly manner the value of the presence of a third party in negotiations. Hans Christian Cars of the Swedish Ministry of Defence presents a thoughtful paper on military budgets, and points out the need for standardized procedures for monitoring military expenditures. Daniel Gallick of the U.S. State Department points out the difficulties of verifying any actions by governments purporting to comply with such measures.

There is an awareness among participants that one of the crucial questions facing any analyst is: What is it that must be "negotiated" to achieve disarmament? Is it merely the numerical strength of the military arsenals in each other's possession? Or, more subtly, the reliability of the political strategies at the disposal of each side? Do the governments of the superpowers believe they can achieve strength and security through military means? Do the leaders of the superpowers believe that their mutual policy of excessive militarization can achieve for them anything other than a myopic vision of their own virtuousness? What role, if any, do the smaller, economically- and technologically-advanced nations, such as Canada, Japan and West Germany, have in this foolish but deadly game of chess in which they have unwittingly become the expendable pawns? Some of these issues are raised and discussed in the papers of Jonathan Alford (British Army) and Hans Gunter Brauch (Heidelberg University) in their analysis of confidence-building measures. This discussion is the most useful part of the book because confidence-building measures can lead to meaningful measures of actual disarmament. Examples such as the *Simla Agreement* (on the Kashmir issue) and the Helsinki "non-binding" international treaty are mentioned. However, the crucial issues remain unanswered.

How can one "build" confidence if, despite advanced technology and extensive military saturation, the necessary spiritual strength is lacking? Professor Charles Osgood (Illinois), George Rathjens (M.I.T.) and Betty Lall

(a U.S. disarmament expert) all examine this question from their respective vantage points when they raise for discussion the possibilities for taking unilateral initiatives aimed at achieving a modicum of self-imposed discipline and restraint in the military field. If negotiations *proceed* from a premise of sustained spiritual strength, it will negate the idea that "a chip, once acquired, may not be expendable".[1] However, the vision projected here appears to be somewhat too simplistic: "[C]onfidence-building agreements are essentially declarations of intent and are not enforceable. They need to have a mandatory character".[2] But, is virtue verifiable?

The high level of discussion brought to bear by the participants in the symposium on these and many other related issues makes this book a useful and stimulating study. In a book of such broad focus and such diversity of participant skills and expertise, it is unfair to expect greater uniformity in treatment and more depth of analysis or detail. That is not to suggest that the Pugwash Movement cannot bring original ideas to light in exploring the specific reasons for reticence on each side. For example, serious analysis of why each superpower has not found the negotiating process useful or successful to achieve concrete and enduring results might reveal unique attitudes that are susceptible to modification. If a nation's armament policy is, in fact, "controlled" by its military commanders — the least likely sector in any society to be enlightened enough to see the wisdom of unilateral disarmament — who then makes the policies pertinent to the negotiation process? It is not helpful to assert simply that both superpowers are *equally* guilty of spoiling the broth.[3] If a third, fourth or fifth cook were to enter the negotiating "kitchen", is there any guarantee that they will not be one too many? One should also examine carefully the essential dissimilarity of the interests of the two powers engaged in the negotiating process. Any threat, real or imagined, from land-based installations in Europe is far greater to the U.S.S.R. than to the U.S. If so, why can't the European Community declare *unilaterally*, and without any caveats, a nuclear weapon-free zone on the condition of a joint superpower guarantee of non-intervention? Would that make the United States more vulnerable in the negotiation process?

The concern for nuclear disarmament, it is worth noting, is beginning slowly but unmistakeably to slip away from the traditional confines of secret diplomacy into the realm of public, open and populist debate. Indeed, this movement is gaining ground not only within the constituencies of those two superpowers but in the public domains of their surrogates as well. The threat of unilateral reform championed by *private groups* may yet have a destabiliz-

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[1] W. Epstein and B. Feld, eds, *New Directions in Disarmament* (1981) 174.
[2] *Ibid.*, 132.
[3] As is done *ibid.*, 2.

ing effect. The momentum is in favour of a reform, notwithstanding the seeming lack of interest, or more plausibly, the incapacity, of political leaders to deliver the goods. Therefore, the public pressure in favour of a "total freeze" cannot be ignored for too long without an inevitable institutionalized backlash in one form or another. That is why, at every level of public discourse and decision-making, it is important to be informed of the complex issues involved and of the critical choices required to be made by the world public. Toward that end, *New Directions in Disarmament* is an important contribution.

Perhaps the inclusion of a brief current bibliography and an appendix of international conventions relevant to the topic would have enhanced the value of the book as a tool for instruction. Even so, this is an excellent source book and an important addition to the ongoing process of public education.

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The Canadian Charter of Rights and Freedoms and the United States Bill of Rights: A Comparison

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Although formal constitutional provisions are not exhaustive of the individual rights enjoyed by citizens of Canada or of the United States, a comparison of the new Canadian *Charter* and the United States Bill of Rights is illuminating. After discussing certain general topics relating to the scope of protcctcd rights, including the requirement of governmental action, the assertion of affirmative rights and the degree of protection offered to victims of the incidental effects of discrimination, the author undertakes a comprehensive cataloguing of rights protected by the relevant United States and Canadian provisions. He concludes that, in broad outline, the list of rights textually protected in each country is similar, but that

Même si les droits dont jouissent les citoyens du Canada et des États-Unis ne se limitent pas aux termes de dispositions constitutionnelles formelles, une comparaison de la *Charte* canadienne et du *Bill of Rights* des États-Unis est révelatrice. L'auteur examine certaines questions d'ordre général se rattachant à l'étendue des droits protégés, y compris la nécessité d'interventions gouvernementales, la revendication de droits positifs et le degré de protection offert aux victimes des effets indirects de la discrimination. L'auteur dresse ensuite un inventaire complet des droits expressément protégés par les constitutions du Canada et des États-Unis, et conclut généralement que quoique les degrés de protection ainsi offerts sem-

*Of the School of Law, University of Pennsylvania. The author first became interested in the *Canadian Charter of Rights and Freedoms* and its relationship to the U.S. *Constitution* while teaching at the summer course in human rights sponsored by the Canadian Human Rights Foundation and held for the past four years at the University of Prince Edward Island. This article is based upon lectures on the U.S. Bill of Rights that have been delivered in connection with that course. A special debt is owed to the P.E.I. students and faculty and to Professor John P. Humphrey, of the McGill University Faculty of Law, the guiding spirit of the P.E.I. program.

Some of the ideas in this article were further developed during the author's appointment as a visiting lecturer at the University of Alberta Law School during January 1983. The author wishes to acknowledge the wonderful hospitality of the faculty, staff and friends of that school, with special thanks to Dean Frank D. Jones, and Mr Justice David C. McDonald.

there are distinctions which may be of importance, depending upon the approach taken ultimately by the Canadian judiciary. For example, the *Charter* seems to provide greater opportunities to assert collective minority rights than does the U.S. Bill of Rights. On the other hand, the *Charter* does not prohibit the "establishment" of religion, nor does it protect property rights explicitly. Drawing upon the wealth of United States case law, the author suggests potential difficulties for Canadian courts grappling with the *Charter*, and he points to some possible solutions that have been devised by U.S. courts dealing with similar problems.

blent similaires, certaines divergences entre les textes pourraient s'avérer importantes selon l'approche éventuellement prise par les tribunaux canadiens. Par exemple, la revendication de droits collectifs semblerait plus aisée sous l'empire de la *Charte* que du *Bill of Rights*. En outre, la *Charte* ne prohibe pas l'appui de croyances religieuses par l'État et ne protège pas explicitement les droits de propriété. S'inspirant d'une jurisprudence abondante aux États-Unis, l'auteur fait état de certaines difficultés d'interprétation dans la *Charte*, et signale quelques-unes des solutions inventées par les tribunaux des États-Unis face à des problèmes semblables.

Synopsis

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Introdnction

The United States has, for many years, afforded significant constitutional protection[1] to a broad range of individual political, civil and personal rights. These rights have been a prominent aspect of government in the U.S. The constitutionally protected rights and freedoms of U.S. residents are, indeed, often cited as one of the main positive factors that distinguish life in the U.S. from that in other countries.

U.S. constitutional rights are ordinarily enforceable through the courts. Judicial enforcement has become inextricably intertwined with the U.S. system of constitutional rights and is essential to the strength and quality of U.S. rights in their present form. Judicial enforcement has, however, also been a source of deep controversy in the U.S. as the courts have, from time to time, seemed to play an unusually active role regarding important and widely debated issues of social policy that are more often left to legislative resolution in other democratic nations.

Now that Canada has adopted a *Charter of Rights and Freedoms* with constitutional status[2] — and provided explicitly, as well, for judicial enforcement of those rights[3] — it seems natural to compare the two systems. Are the protections for rights offered by Canada's new *Charter* basically similar to the protections that have existed in the United States? Where significant differences exist, what, if anything, do those differences suggest about the relative scope and strength of the constitutional protections of individual rights in the two countries? Will the Canadian judiciary come to play a role regarding questions of social policy similar to that which the U.S. courts have sometimes seemed to assume? This article and a subsequent one will seek to compare some of the main features of the new Canadian *Charter* with corresponding aspects of the protection of rights under the U.S. *Constitution* in an attempt to provide a background for addressing these interesting questions.

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[1] "Constitutional protection" is used here to refer to guarantees of individual rights that are "entrenched" in a formal constitutional document. Unlike common law or statutory rights, constitutionally protected rights cannot be diminished or eliminated by ordinary legislative action, but only through a specified amendment process. The amendment process applicable to the Canadian *Charter* is spelled out in Part V of Schedule B, *Canada Act 1982*, 1982, c. 11 (U.K.). The amendment procedures for the U.S. *Constitution* are in art. V of that document.

[2] Part 1 of Schedule B, *Canada Act 1982*, 1982, c. 11 (U.K.) [hereinafter the *Charter*]. Paragraph 52(2)(a) states that the *Charter* is "the supreme law of Canada". Any law inconsistent with it "is, to the extent of the inconsistency, of no force or effect" (subs. 52(1)).

[3] See the *Charter*, subs. 24(1).

A Clarification and Caution — At the outset of such a comparison, it is appropriate to insert some preliminary words of clarification and caution about the nature and significance of the task at hand.

In comparing the U.S. and Canadian systems, it is tempting to focus primarily, or even exclusively, upon the two relevant constitutional texts. In the case of the *Charter*, its text is, unquestionably, the proper main focus. Having come into effect just over a year ago (on 17 April 1982), that document is as yet unadorned by binding judicial interpretations in the Supreme Court of Canada.[4] The U.S. text,[5] on the other hand (the most

[4] However, judicial interpretations under the *Canadian Bill of Rights*, R.S.C. 1970, Appendix I, while not dispositive of the meaning of similar *Charter* provisions, may nevertheless be relevant as Canadian courts begin to constue the *Charter*. See Hovius, *The Legacy of the Supreme Court of Canada's Approach to the Canadian Bill of Rights: Prospects for the Charter* (1982) 28 McGill L.J. 31. For general background on the Supreme Court's interpretations of the *Bill of Rights*, see, *e.g.*, W. Tarnopolsky, *The Canadian Bill of Rights*, 2d rev. ed. (1975); Tarnopolsky, "A New Bill of Rights in the Light of the Interpretation of the Present One by the Supreme Court of Canada" in *The Constitution and the Future of Canada* [1978] L.S.U.C. Special Lectures 161; P. Hogg, *Constitutional Law in Canada* (1977); Gibson, *-And One Step Backward: The Supreme Court and Constitutional Law in the Sixties* (1975) 53 Can. Bar Rev. 620; and Berger, *The Supreme Court and Fundamental Freedoms: The Renunciation of the Legacy of Mr. Justice Rand* (1980) 1 Supreme Court L.R. 460.

Some *Charter* provisions are also similar to provisions in the constitutions of countries other than the U.S., in international documents such as the *Universal Declaration of Human Rights*; the *International Covenant on Civil and Political Rights*, United Nations G.A. Res. 2200, 21 U.N. GAOR, Supp. (No. 16) 52, U.N. Doc. A/6316 (1967), reprinted in (1967) 6 I.L.M. 368; the *European Convention for the Protection of Human Rights and Fundamental Freedoms*, European T.S. No. 5 (signed 4 November 1950; entered into force 3 September 1953); and the *American Declaration of the Rights and Duties of Man*, Res. XXX, O.A.S. Off. Rec. OEA/Ser. L/V/I.4 Rev. (1965). Interpretations of these provisions by national supreme courts and by bodies such as the European Court of Human Rights are also of potential relevance in construing the *Charter*.

[5] Although the term "Bill of Rights" is commonly used to refer to all U.S. constitutional protections for individual rights, the usage is not technically accurate. Strictly speaking the "Bill of Rights" was the first group of Amendments to the U.S. *Constitution*. The *Constitution* dates from 1789; these Amendments were adopted in 1791. Some of the most important U.S. individual rights provisions can be found in these 1791 amendments. See, for example, the protections for the freedoms of speech and religion (First Amendment); the restriction on unreasonable searches and seizures (Fourth Amendment); the prohibition on compelled self-incrimination (Fifth Amendment); and the prohibition upon cruel and unusual punishments (Eighth Amendment). As originally adopted, however, these Amendments did not apply to the U.S. states (or to local governmental units established under state authority), but constituted limits only upon the newly formed federal government. See *Barron* v. *The Mayor and City Council of Baltimore*, 7 Pet. 243 (1833). It has only been through a gradual process of "selective incorporation" into the due process clause of the Fourteenth Amendment (adopted in 1868, shortly after the U.S. Civil War) that most of the provisions of the original 1791 Bill of Rights have ultimately come to be applicable to state and local governments in the U.S. See, *e.g.*, *Palko* v. *Connecticut*, 302 U.S. 319 (1937); and *Duncan* v. *Louisiana*, 391 U.S. 145 (1968). For more on this process of incorporation, see *infra*, note 19.

important parts of which date from either shortly after the original U.S. *Constitution* of 1789 or shortly after the U.S. Civil War of the 1860s), has been subjected to an enormous amount of authoritative judicial interpretation. These decisions and opinions often deal with questions on which the U.S. constitutional text is completely or almost entirely silent, and they also give meanings to U.S. provisions that could hardly be confidently anticipated — or in some cases anticipated at all — by a reading of the relevant text. In the case of the U.S. *Constitution*, then, primary attention must be focused not on the bare text, but on the text as it has been authoritatively interpreted in the Supreme Court of the United States.

In comparing the *Charter* with the U.S. *Constitution*, therefore, one is, to some extent, comparing apples with oranges — the comparison being between a bare Canadian text, at the beginning of its life, and an elaborate and complex system that has been intricately worked out over the years by U.S. courts. Moreover, the text of the Canadian *Charter*, like that of the U.S. *Constitution*, is quite general in nature; it, too, will undoubtedly undergo a process of repeated judicial interpretation before the answers to many fundamental questions begin to emerge. When we "compare" today's *Charter* with U.S. constitutional rights, therefore, we will often more accurately not be "comparing" at all, but rather speculating on what the *Charter* may come to mean, while using the resolution of similar issues under the U.S. *Constitution* as a point of reference and, where it seems appropriate, as a guide.[6]

Individual rights provisions also appear in the body of the original 1789 *Constitution*. Provisions in that document, for example, prohibit either the federal government or the states from enacting *ex post facto* laws or bills of attainder (art. I, §9, cl. 3; art. I, §10, cl. 1); prohibit the states from impairing the obligation of contracts (art. I, §10, cl. 1); and guarantee jury trials in federal criminal prosecutions (art. III, §2, cl. 3). Additionally, some of the most significant U.S. individual rights protections are contained in constitutional amendments adopted after the Bill of Rights. Most prominent today is the Fourteenth Amendment, which contains two of the currently most important U.S. provisions — that states shall not deprive persons of life, liberty or property without "due process of law", or deprive persons within their jurisdiction of the "equal protection of the laws". In addition to serving as the vehicle for applying the 1791 Bill of Rights to the states, the due process clause also had independent significance as a protection for liberty and property, and a vast jurisprudence has, of course, also developed in connection with Fourteenth Amendment equal protection guarantees. Other Civil War and subsequent amendments also contain important individual rights protections. See, for example, the Thirteenth Amendment (1870) (prohibiting slavery); the Fifteenth Amendment (1870) (prohibiting racial discrimination in voting); the Nineteenth Amendment (1920) (gender discrimination in voting); and the Twenty-Fourth (1964) and Twenty-Sixth (1971) Amendments (outlawing the poll tax in federal elections and prohibiting age discrimination in voting for persons over eighteen). This article treats all of these U.S. constitutional protections, not just those in the 1791 "Bill of Rights".

[6] As noted *supra*, note 4, U.S. interpretations and solutions are by no means the only relevant comparative decisional materials.

The caution that should be interposed is this: Although national constitutions unquestionably play an important role in determining the level of respect for individual rights in a nation, their role is by no means exclusive. Neither the Canadian *Charter* nor the U.S. *Constitution* represent the only — or even the primary — protections for individual rights in their respective countries. Both nations protect rights extensively through the common law, and through national, provincial, state, and local legislation. Rights may also be protected through adherence to international treaties and, in the U.S., under State constitutions, provisions of which were the model for the original U.S. Bill of Rights and which have continued to play an important role in some areas. Indeed, both the Canadian *Charter* and the U.S. *Constitution* make absolutely clear that the federal constitutional protections they embody are not intended to preclude the application of other sources of rights.[7]

The *Charter* and U.S. *Constitution* thus represent national *minimum* protections of individual rights. Comparing such constitutional protections is emphatically not equivalent to comparing the actual status of individual rights in Canada and the U.S. as a whole, or within a particular state or province. Rights weakly protected through a national constitution, or not protected at all by that constitution, may not need to be protected — given national traditions and prevailing societal attitudes and practices — or they may be protected by other sources of law. In the U.S., for example, most federal constitutional provisions, as we shall see, apply only as against "governmental" action. There is, however, an extensive body of federal and state legislation prohibiting similar private violations, such as private racial or gender discrimination in employment or housing. In the U.S. there are also presently few, if any, affirmative constitutional entitlements, such as to public assistance or medical care for the indigent. Legislatively created rights to these benefits are quite common, however. On the other hand, drafters or interpreters of constitutions may be motivated to state or develop strong constitutional protections largely because other mechanisms have not proved satisfactory in practice. To take another U.S. example, it is likely that the judicial development of the "exclusionary rule" (excluding the fruits of unconstitutionally obtained evidence from criminal trials) was influenced heavily by the failure of other, non-constitutional mechanisms (such as private tort actions and criminal prosecutions) adequately to control police misbehavior.

Three Modes of Comparison: The Scope, Strength and Enforceability of Rights — In comparing the quality and character of the protection of indi-

[7] See the U.S. *Constitution*, Amendment IX: "The enumeration in the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people". See also the Canadian *Charter* s. 26: "The guarantee in this Charter of certain rights and freedoms shall not be construed as denying the existence of any other rights or freedoms that exist in Canada."

vidual rights under different constitutions, three important subjects need investigation. First, it is necessary to examine the catalog of rights that enjoy protection under each constitution. Does each constitution, for example, protect freedom of speech? Does each protect the rights of defendants in criminal proceedings? Is there protection for "property" rights? Are certain kinds of discrimination or unequal treatment prohibited? Does the constitution in question confer any "affirmative" rights, such as mandatory entitlements to welfare, employment or public education? When rights *are* within the constitutional catalog, against whom do they apply? If there is a constitutional right to be protected from racial discrimination, for example, does that include a right to be protected from private discriminatory behavior, or only from governmentally imposed racial discrimination?

Once the applicable constitutional rights are identified, a second vital question — less obvious, perhaps, but at least equally important in the long run — has to do with the level or strength of the protection that is afforded to rights under each constitution. Some constitutional rights may perhaps be absolute, admitting of no interference or impingement, no matter how strong the asserted governmental justification. Under the U.S. *Constitution*, for example, the right to be free from governmentally compelled self-incrimination and the prohibitions upon the establishment of national and state religions probably fall into this category. A large number of important U.S. constitutional rights, however, *do* bow to sufficiently strong governmental justifications, and among these are some of the most well recognized and fundamental of rights, such as the freedoms of expression and religion.

Once a right is thus established as what might be called a qualified, rather than an absolute, right, the critical question concerns the strength of the justification requirement that the applicable constitution imposes as a condition of governmental interference. This requirement may be so strong as to make the right virtually absolute; on the other hand, a justification requirement may, if weak enough, result in no effective constitutional protection at all. And there is, of course, a large middle ground; the variety of possible standards of justification for permissibly impinging upon constitutionally protected interests is almost infinite. In the United States, for example, some constitutionally protected interests may be overridden by regulations that are found merely to be conceivably relevant to "legitimate" governmental interests; in other areas, regulations must be shown to be "substantially" related to "important" governmental concerns; in still other areas, rights may be restricted only upon a demonstration that doing so is "necessary" to serve "compelling" governmental interests.

The third important area for inquiry has to do with the available means for enforcing rights. The most prominent questions here concern judicial

enforcement. In what circumstances is judicial enforcement available? What sorts of remedies, such as damages, injunctions, exclusion of evidence, and declaratory judgments, will courts afford? Do doctrines exist that permit or require courts to decline to enforce rights, even when they are violated without sufficient justification, or that permit legislatures to forbid or prevent courts from enforcing rights in some circumstances? Even the strongest of rights will lose much (although certainly not all) of their strength when no judicial enforcement is available and when resort must be had to more informal or political remedies.

These three topics cover an enormous range. The present article restricts itself to the first of these subjects. It undertakes a comparison of the individual rights interests afforded at least some protection under the Canadian *Charter* and the U.S. *Constitution*. A subsequent article will consider the remaining two questions: the relative strengths of rights *vis-à-vis* asserted governmental justifications in the two systems, and the availability of judicial enforcement of rights under each system.

I. The General Scope of Rights Under the *Charter* and the U.S. *Constitution*

The lists of individual rights afforded protection under the Canadian *Charter* and the U.S. *Constitution* bear a great deal of similarity. Both constitutional texts, for example, protect explicitly the freedoms of expression and assembly,[8] and the freedom of religion.[9] Both texts expressly protect a range of important rights of defendants in criminal proceedings, including the rights to counsel and jury trial,[10] and protection against arbitrary or unreasonable searches and arrests,[11] compulsory self-incrimination,[12] cruel and unusual punishments,[13] *ex post facto* laws,[14] and double jeopardy.[15] Both constitutions also offer protection against certain forms of discriminatory treatment.[16] The text of the Canadian *Charter*, in addition, offers explicit protection to mobility rights,[17] to the rights to vote in federal and provincial

[8] *Charter*, subss 2(b) and 2(c); U.S. *Constitution*, Amendment I.
[9] *Charter*, subs. 2(a); U.S. *Constitution*, Amendment I.
[10] *Charter*, subss 10(b) and 11(f); U.S. *Constitution*, Amendment VI, and art. III, §2, cl. 3.
[11] *Charter*, ss 8 and 9; U.S. *Constitution*, Amendment IV.
[12] *Charter*, subs. 11(c); U.S. *Constitution*, Amendment V.
[13] *Charter*, s. 12; U.S. *Constitution*, Amendment VIII.
[14] *Charter*, subs. 11(g); U.S. *Constitution*, art. I, §9, cl. 3; art. I, §10, cl. 1.
[15] *Charter*, subs. 11(h); U.S. *Constitution*, Amendment V.
[16] *Charter*, s. 15; U.S. *Constitution*, Amendment XIV, §1.
[17] *Charter*, s. 6.

parliamentary elections and to the right to be a candidate in such elections.[18] These rights are not explicit in the text of the U.S. *Constitution*, but a number of Supreme Court decisions show that they do, in fact, receive a substantial degree of federal constitutional protection in the United States.[19]

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[18] *Charter*, s. 3.

[19] See, *e.g.*, *Edwards* v. *California*, 314 U.S. 160 (1941); *Shapiro* v. *Thompson*, 394 U.S. 618 (1969); and *United States* v. *Guest*, 383 U.S. 745 (1966) (mobility rights); *Harper* v. *Virginia State Board of Elections*, 383 U.S. 663 (1966); and *Kramer* v. *Union Free School District No. 15*, 395 U.S. 621 (1969) (voting); *Williams* v. *Rhodes*, 393 U.S. 23 (1968) (candidacy).

Several constitutional textual bases have been suggested in the cases for the U.S. protection of rights of mobility and travel. These include the U.S. due process clauses (prohibiting federal or state deprivations of "liberty" without "due process of law"); art. V, §2, cl. 1 ("the citizens of each state shall be entitled to all privileges and immunities of citizens in the several States"); the "privileges or immunities" clause of the Fourteenth Amendment ("no state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States"); and the "commerce clause" of art. I, §8, cl. 3 ("the Congress shall have power...to regulate commerce...among the several States").

Most U.S. voting and candidacy cases rely on equal protection principles. See, in addition to the cases cited above, *San Antonio School District* v. *Rodriguez*, 411 U.S. 1 (1973). Other relevant U.S. constitutional provisions in these areas are the First Amendment (protecting the freedoms of speech, press, assembly and petition, and sometimes seen as protecting political activity generally); the Fifteenth, Nineteenth and Twenty-Sixth Amendments (prohibiting discrimination in voting on account of race, gender or age); the Twenty-Fourth Amendment (prohibiting poll taxes in federal elections); art. I, §2, cl. 1 and the Seventeenth Amendment (providing that the House of Representatives and Senate shall be chosen "by the people"); and art. IV, §4 (providing that the United States "shall guarantee to every State...a Republican form of government").

Close scrutiny of the U.S. constitutional provisions cited in this and the preceding footnotes will create some doubt in the reader's mind about whether it is strictly accurate to say, as the text implies, that the rights mentioned in the paragraph are, in fact, generally applicable in the U.S. to all governmental action, whether under federal or state authority. For example, the U.S. First Amendment, the primary textual basis for constitutional expression and religious rights, provides that "*Congress* shall make no law" interfering with speech or the free exercise of religion [emphasis added]. And although the U.S. Fourth, Fifth, Sixth, and Eighth Amendments (the primary textual bases for most of the rights of defendants in criminal proceedings) do not contain this explicit textual limitation to acts of the federal Congress, the Supreme Court authoritatively held, in *Barron* v. *The Mayor and City Council of Baltimore*, *supra*, note 5, 249, that all of the first eight Amendments were, like the First Amendment, intended solely as limitations "on the exercise of power by the government of the United States, and [are] not applicable to the legislation of the states". A converse textual problem applies to the equal protection clause of the Fourteenth Amendment, which is in terms applicable only to "state" action. (Other rights provisions, such as the Fifteenth, Nineteenth, Twenty-Fourth and Twenty-Sixth Amendments are, however, expressly made applicable to action by "the United States or by any State". See also art. I, §9, cl. 3 and art. I, §10, cl. 1, prohibiting *ex post facto* laws by the federal and state governments, respectively).

In fact, the implication in the text, that the rights mentioned are applicable to both state and federal governments in the U.S., is generally correct. This result has been reached through construction of the "due process" clause of the Fourteenth Amendment. Over the years after the adoption of the Fourteenth Amendment, the free expression and religion guarantees of the First

Although there is thus a broad range of basic similarity between the rights protected under the *Charter* and the U.S. *Constitution*, there appear to be some significant differences in coverage as well. The official languages and minority language educational rights in the *Charter*,[20] for example, have no apparent U.S. counterparts, in either text or judicial decision.[21] Nor does the U.S. *Constitution* contain any general principle resembling that contained in s. 27 of the *Charter*, which requires that the *Charter* be interpreted "in a manner consistent with the preservation and enhancement of the multicultural heritage of Canadians". On the other hand, the *Charter* contains no prohibition, as does the U.S. First Amendment, upon governmental "establishment" of religion. Nor does the *Charter* explicitly protect property rights to the extent found in the U.S. constitutional text. The U.S. due process clauses, for example, apply to deprivations of "life, liberty, *or property*",[22] whereas the corresponding language in the *Charter* covers deprivations of "life, liberty and *security of the person*".[23] The U.S. Fifth Amendment, moreover, provides that "private property" shall not "be taken for public use, without just compensation" and the original *Constitution* provides further that states shall not enact laws "impairing the obligation of contracts".[24] The *Charter* contains no directly equivalent provisions.

In addition to these evident textual differences, there appear to be other significant differences as well, due to the fact that the U.S. *Constitution* has, through judicial interpretation, come to embrace some rights that are not at all

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Amendment were gradually made fully applicable by the U.S. Supreme Court to state and local governmental action through "incorporation" of those guarantees into the due process clause of the Amendment, which applies to "state" action. See, *e.g.*, *Gitlow* v. *New York*, 268 U.S. 652 (1925); *Palko* v. *Connecticut*, *supra*, note 5; and *Everson* v. *Board of Education*, 330 U.S. 1 (1947). The same process occurred with regard to most of the criminal procedure guarantees of the Fourth, Fifth, Sixth, and Eighth Amendments. See *Duncan* v. *Louisiana*, *supra*, note 5. In the opposite direction, the equal protection guarantee of the Fourteenth Amendment has been effectively "incorporated" into the due process clause of the Fifth Amendment, which applies to federal governmental action. See *Bolling* v. *Sharpe*, 347 U.S. 497 (1954).

[20] *Charter*, ss 16 to 23.

[21] But see *Lau* v. *Nichols*, 414 U.S. 563 (1974), suggesting possible U.S. constitutional objections, on grounds of equal protection, in a situation where a public school system offered education only in the English language, but where a substantial number of students in that system did not speak English and were not offered supplemental remedial instruction in English.

[22] These clauses appear in the Fifth and Fourteenth Amendments, the former applicable to federal governmental action, the latter to state action [emphasis added].

[23] *Charter*, s. 7 [emphasis added].

[24] Article I, §10, cl. 1. Nor does the *Charter* appear to protect "the right of the people to keep and bear arms" (in the U.S. Second Amendment) or limit the right of government to use private homes to quarter soldiers (Third Amendment). These rights have not been important ones in judicial applications of the U.S. *Constitution*, although the right to bear arms is often invoked in political debates concerning gun control legislation in the U.S.

apparent in the constitutional text. Chief, perhaps, among these potential differences, is the quite recently developed U.S. right to "privacy" — the right responsible, for example, for the 1973 decision of the U.S. Supreme Court that most abortion prohibitions are unconstitutional.[25] The Canadian *Charter* has no provision clearly embodying this privacy right, although it may emerge ultimately in the course of judicial interpretation, as it has in the U.S. United States law also contains a general principle of "substantive" due process, requiring that all regulations impinging upon liberty and property be, to some degree, "reasonable" in light of some legitimate government policy,[26] and a similar general "rationality" requirement for governmental classifications that has been developed under the equal protection clause of the Fourteenth Amendment.[27] These are relatively weak rights at the present time, but they have some theoretical and practical significance. It is not clear whether — or to what extent — either of these general rationality rules will be recognized under the *Charter*.

Before exploring, in greater detail, some of the most important potential similarities and differences in the catalogs of rights protected under the *Charter* and U.S. *Constitution*, it is useful to consider three general topics concerning the scope of protected rights that are relevant in examining the breadth of all of the rights covered by the two documents.

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[25] *Roe* v. *Wade*, 410 U.S. 113 (1973). See also *Griswold* v. *Connecticut*, 381 U.S. 479 (1965) (contraceptive use by married persons protected by a similar principle). The U.S. privacy right also applies, in some circumstances, to "informational" privacy, *i.e.*, to situations where the government seeks to collect or disseminate data about "private" behavior without directly regulating that behavior. See *Whalen* v. *Roe*, 429 U.S. 589 (1977).

[26] The degree of judicial review of reasonableness has varied considerably under this doctrine over the years. Compare the relatively substantial level of review indicated in *Lochner* v. *New York*, 198 U.S. 45, 56 (1905) ("Is this a fair, reasonable and appropriate exercise of the police power of the State, or is it an unreasonable, unnecessary and arbitrary interference with the right of the individual to his personal liberty or to enter into those contracts in relation to labor which may seem to him appropriate or necessary for the support of himself and his family?") with the extremely low level of review suggested by the currently applicable standard of *Williamson* v. *Lee Optical of Oklahoma, Inc.*, 348 U.S. 483, 488 (1955) ("It is enough that there is an evil at hand for correction, and that it might be thought that the particular legislative measure was a rational way to correct it. The day is gone when this court uses the Due Process Clause. . . to strike down state laws, regulatory of business and industrial conditions, because they may be unwise, improvident, or out of harmony with a particular school of thought").

[27] As with the substantive due process rule of rationality, the equal protection rationality standard has varied in its strength over the years. Compare the relatively substantial test of *F.S. Royster Guano Co.* v. *Virginia*, 253 U.S. 412, 415 (1920) ("The classification must be reasonable, not arbitrary, and must rest upon some ground of difference having a fair and substantial relation to the object of the legislation, so that all persons similarly circumstanced shall be treated alike") with the much more permissive standard of *Railway Express Agency, Inc.* v. *New York*, 336 U.S. 106, 110 (1949) (a legislative classification is reasonable if the local authorities "may well have concluded" that it responded to the legislative concern).