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A DISSERTION ON

"...the freedom to bear arms may be righteously rejected to encourage the preservation of all corporeal forms of life."

UNDER THE GUIDANCE OF,

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CHAPTER-1

INTRODUCTION

Arms control and disarmament substantially contributed to ending the ruinous and dangerous Cold War period by creating a network of treaties, institutions, and verification capabilities. They contributed to preventing the outbreak of an all-out war, to fostering trust and confidence, and to limiting the consequences of inhuman warfare by reducing or eliminating weapons of mass destruction and conventional stockpiles.

Modern arms control was first invented and implemented under the conditions of the nuclear age, and later expanded to other areas of warfare. Now, in the 21st century, the political, cultural, and technical environment is changing rapidly. Classical arms control concepts are being squeezed in the changing conditions of a more globalized world of many actors, emerging regional conflicts, and new technical and economic developments.

The dismantlement of chemical weapons in Syria underlines the importance and qualities of existing arms control treaties. The largely unsung Chemical Weapons Convention (CWC) from 1993, and its well-qualified Organization for the Prohibition of Chemical Weapons (OPCW), which received the 2013 Nobel Peace Prize, created the foundation for the declaration and elimination of Syria's chemical weapons stockpile. Without the international cooperation of leading UN members, the mutual consent of the international community, and in particular the legal framework of the CWC and the expertise of the OPCW, such an undertaking would not have been possible. The Heinrich Böll Foundation in Berlin, together with the Institute for Peace Research and Security Studies at the University of Hamburg (IFSH) and the German Institute for International and Security Affairs (SWP), held an international expert conference on The Future of Arms Control on September 9–10, 2013. Around 20 speakers from 13 countries and some 30 practitioners and academics came together to discuss the conditions and options for modern arms control, disarmament, and non-proliferation. The conference participants debated what functions arms control can fulfill under the changing conditions of the 21st century as well as the interests of its key actors. Additionally, the participants discussed how disarmament, arms control, and non-proliferation instruments can be rendered more effective and sustainable.

A) HISTORY OF ARMS CONTROL

The starting point: What drives evolution?

Evolution can be an enlightening concept to apply to arms control, provided that evolution itself is correctly understood. It is not synonymous with progress and improvement, nor is it necessarily unidirectional. It focuses on how organisms adapt to their physical and temporal circumstances: The «survival of the fittest» does not mean the triumph of the objectively «best» or most advanced, but rather of those whose adaptation is most successful. Furthermore, in the modern understanding, the process of evolution is not smooth and continuous. It has been called a «punctuated equilibrium»[1] in which things may stay the same for a long time before facing a sudden, rapid change, which might lead either to progress or to regression.

The way that arms control is understood and pursued, its relative standing, and its relative success have similarly varied over time. Arms control – both in Europe and worldwide – has been through numerous crises and changes of direction; many would say that its progress has stalled, or even been reversed at times. At its simplest, evolution in this area seems to be responsive to two sets of forces in the environment: the economics of fear and the economics of economics. What matters most about fear is not its origin or extent, but rather how one-sided it is. If we feel unlimited apprehension about an enemy and/or define our opponents as inherently evil, no level of defensive capability can be enough to satisfy us, and any arms restraint will be assumed only to help the «bad guys.» If, however, we are aware that our own arsenals may also contribute to arms races and trigger conflict; if we would prefer to avoid the responsibility for killing and wounding and pursue instead our interests by non-violent means; and above all, if we have historical reasons for self-mistrust and fear of our own instincts, then we will be more inclined to seek safety at lower and balanced levels of capacity.

The economics of economics is even simpler. Arms and armies cost money, and although we need them to defend the other things we hold dear (territory, population, resources, and welfare), very few countries have been prepared to spend so much on defense that their civil economies stop functioning and their people start to starve.

But there are also some reasons for producing and owning weapons that have less direct links to survival. Some motives are related to status, prestige, and display, both within and beyond the country. Others are linked to the productive economy: the value of arms factories for

[1] A term coined by evolutionary biologists Niles Eldredge and Stephen Jay Gould in the early 1970s.

employment and for regional development, or the profits from defense industry sales. Armed forces can also be used to train young citizens and create a sense of national unity, or to assist in law and order and civilian tasks such as natural disaster responses. These motivations for maintaining a certain level of capacity mitigate the «economics of economics» logic, and may make countries reluctant to go too far in cuts or restraints, even when the «fear» factors are well balanced.

Thoughts on arms control have arguably not gone far enough to address these complications; but at least such factors tend to be less directly linked with risks of conflict.

If the elements line up to make arms restraint – unilateral, bilateral, or multilateral

– possible prima facie , a host of alternative ways exist to pursue it. Most of them have been attempted in some context and to some degree over the last century, The most extreme and comprehensive are the physical interdiction and destruction of (somebody else's) weapons, and the complete prohibition of classes of weaponry, as seen recently with chemical and biological weapons and various weapons/techniques viewed as «causing unnecessary harm and having indiscriminate effects.» [2] At the other end of the spectrum are self-control and voluntary avoidance, which may be prompted both by economic constraints and moral preferences, and includes help given by countries to others to destroy their weapons voluntarily.[3]

In between these extremes, control methods can intervene at every stage of the arms cycle, starting with controls and limitations on production, on ownership, and on trade and transfer. These last methods may take the form of export and technology transfer regimes, but also of physical checks and confiscation. When it comes to the employment of weapons in a military context, there may be limits or conditions placed on where and how the items are used (e.g., demilitarized zones; confidence building measures constraining military movements and activities; transparency and data-exchange stipulations); or there may be actual limitations placed on numbers – freezes, ceilings, or cuts – possibly accompanied by verification.

Viewed in the light of evolutionary theory, whether all these options, or only some of them, should be labeled as «arms control» – or where to draw the line between «arms control» and «disarmament» – is not an interesting issue. Rather, the question should be focused on what works , or what is most likely to work, in improving the aims for any given attempt at arms

[2] The cited definition was used in the international treaty known for (short) as the Certain Conventional Weapons convention of 1980. More broadly, humanitarian-motivated bans or limitations on military techniques and weaponry have evolved out of the Geneva Conventions developed from 1864 to 1949. They now include additional protocols to those conventions as well as separate treaties on items such as anti-personnel mines.

3. A modern example is the Global Partnership, which helps mainly Russia to destroy obsolete and surplus stocks of nuclear and chemical weapons; available at: www.nti.org/treaties-andregimes/ global-partnership-against-spread-weapons-and-materials-mass-destruction-10-plus- 10-over-10-program. Programs to collect and destroy small arms have also been sponsored i.a. by NATO and the Organization for Security and Co-operation in

restraint; the answer will often be some combination of approaches. Indeed, the complex interdependencies between the various methods deserve more thought than they have been given. Just as one example, there are problems in ordering a poor country to give up a certain weapon when it relies economically on selling that weapon, when it believes that that weapon is the only thing keeping its border safe against a troop concentration on the other side, and when it cannot afford to safely destroy its stocks.

From a 20th- to a 21st-century environment

The late 20th century is rightly seen as having been the most productive historical period ever in arms control. Its successes, however, depended on making a shrewd selection from the spectrum of measures just outlined to address a given set of problems – also carefully selected for their urgency and manageability – that typified the age. Its architects proceeded from a number of hypotheses and principles that, by and large, correctly reflected the prevailing realities. In particular – and as this author has argued at more length elsewhere [4]– they could assume a broad balance of military capabilities, of deterrent doctrines, and of what are here called «fears» between the two armed camps of the Euro-Atlantic region. They were addressing the risks of war between states, rather than the internal conflicts or the «wars of liberation» that took place in many former European colonies in Africa and Asia. (This is not to say that the latter were neglected, but they were not associated with arms control measures, except for weapons collection after some of the civil wars.) They worked also to secure universal bans on «inhumane» items such as chemical weapons, incendiaries, and booby-traps, confident in the assumption that all human beings would share an abhorrence toward these on the basis of common experience or knowledge. Finally, they saw the method of negotiating legally binding treaties and conventions – whether open for universal participation or in regional settings such as the Conventional Armed Forces in Europe (CFE) agreements [5] – as the «classic» and most powerful instrument available, both for actual disarmament and for defining other forms of restraint.

Underpinning or flowing from these preferences were other less explicit assumptions, starting with the belief that states were the (only) relevant actors and were equally competent to make and implement such agreements. Thus, with some exceptions, such as the establishment of the Organisation for the Prohibition of Chemical Weapons [6] to service the Chemical Weapons Convention, the implementation of commitments was seen as a national business, and enforcement depended on the vigilance of the community of other signatories. Further, the initiative for action aiming at actual disarmament (other than for «inhumane» weapons), for non-

[4] Alyson JK Bailes, «The Changing Role of Arms Control in Historical Perspective,» in Arms Control in the 21st Century , ed. Oliver Meier and Christopher Daase (London: Routledge, 2012), 15–38.

[5] For background, see: www.armscontrol.org/factsheet/cfe.

[6] See: www.opcw.org.

proliferation measures, and for export controls came overwhelmingly from the Euro Atlantic zone. It had a double logic there, since it not only reduced risks of war in Europe, but lowered the temperature in the East-West strategic rivalry exported by the two blocs to most of the world.

Since the dissolution of the Warsaw Pact and the Soviet Union in the 1990s, and as the world moved into the 21st century, these features of the «classic» arms control environment have changed quite dramatically, more than once. The obvious differences started with the loss of true strategic balance between the East and West, even if the Russian Federation maintained approximate nuclear parity with the United States.

Not only was the United States left with the world's single greatest conventional forces and military-technical capacity, but its notions of national security and the strategic use of military means shifted progressively away from the European focus and from the preservation of an East-West status quo through deterrence. It adopted a more active and truly global posture of transformative intervention (Former Yugoslavia, Gulf War), retaliation, and – under President George W. Bush – even forceful «pre-emption.» [7] Russia's posture, at the same time, became less global through the loss of former Soviet territories and overseas bases, and hence more exclusively territorial and defensive. China also has been focused on its own territory and neighborhood up to the very recent past, and it has not made active war against anyone since Vietnam in 1979. Even more than asymmetry in numbers, this asymmetry in doctrines and strategic visions makes negotiations for mutual restraint particularly difficult, even in regions where the powers concerned are simultaneously present. To take only the most obvious example, the United States has developed its missile defense plans in and around Europe as a shield against possible Middle Eastern nuclear proliferation; for Russia, any such installations near its borders mean a further extension of US military influence and a flaunting of Western strategic superiority in its own backyard.[8]

Broader changes have included the general shifting of the world system toward multipolarity, with other regions no longer divided between the adherents of East and West, leaving more scope both for autonomous regional conflicts (especially intrastate ones) and for emergent regional powerbases. Matching this greater strategic complexity is a greater, and ongoing, diffusion of military power and associated technological knowledge. Over and above the post-9/11 recognition of terrorism as an «asymmetric» threat, cyber technology has emerged as a weapon that an otherwise weak state – or even an individual – can wield with effect against even the most powerful adversary.

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[7] This idea was developed in response to the terrorist attacks of 9/11 and is expounded in theUS National Security Strategy of September 2002; see: www.state.gov/documents/organization/63562.pdf.

[8] Zdzislaw Lachowski, «Foreign Military Bases in Eurasia,» SIPRI Policy Paper no. 18, 2007; available at: http://books.sipri.org/product_info?c_product_id=339. Alyson JK

The proliferation of such multi-use, potentially subversive techniques and unconventional means of attack, and the worldwide smuggling of small arms and light weapons (SALWs) at the other end of the technological spectrum, have both helped to drive a major shift in strategic thinking – led by, but not confined to, the West toward the challenges presented by non-state actors.[9]Whether these be parties to civil wars, terrorist movements, violent criminals, shady businesses, or cyber «hackers,» their negative roles in security processes not only threaten the general monopoly of force by nation-states, but they are also intimately linked with the circulation, use, design, and even the production of weaponry, including weapons of mass destruction.

Yet the classic «treaty method» of defining arms restraints and the classic stateled method of implementing them are almost completely unsuited to handling such actors. The latter have neither the legal personality to make international agreements, nor the executive competence, in many cases, to control their own assets and adherents.[10] National and international laws that define obligations for governments and for traditional actors such as armed forces are ill-designed to «capture» and regulate the actions of such players, especially when working in the new transnational, globalized space, or indeed in a virtual environment. Not only have weak governments in conflict countries been struggling with these conundrums for more than two decades now, but also the world's strongest states and organizations.

Arms restraint: A new mix of tools?

The pattern of endeavors for arms restraint has not evolved unnaturally as a result, driven by conscious choices but also by some less carefully examined assumptions.

Few efforts are made today toward continent-wide restraints, and in the implementation of the East-West CFE Treaty, there has been actual regression.[11] Instead, measures are typically designed either at the global level to involve all poles of power and all possible transnational

[9] See, for example, Alyson JK Bailes, «The Strategic Object of War,» in The Oxford Handbook of War , ed. Julian Lindley-French and Yves Boyer (Oxford: Oxford University Press, 2012).

[10] A new and encouraging way of overcoming these particular problems has been developed by the NGO Geneva Call in its work with non-state groups on honoring humanitarian restrictions; see: www.genevacall.org.

[11] As a result of political disputes connected with Russian deployments in the South Caucasus, NATO states did not proceed to ratify the Adapted CFE Treaty of 1999. In 2007 the Russian Federation stated it would cease implementing CFE commitments as of December that year

dissemination routes, or at the country level (possibly plus immediate neighbors) during conflicts or as part of the peace-building thereafter.[12]

Even more significantly – or, at least, more controversially – the method of promoting restraint has shifted away from the centrality of treaty processes. The Bush Administration was exceptionally forthright in seeing treaties (and other forms of negotiated, law-based institutional action) as hampering the good guys more than restraining the bad guys. But it would be unfair to give the United States sole responsibility for the shift, or to see it reflected only in coercive military action – as with the invasions of Iraq and Afghanistan. Large numbers of Western states and others – often including the other great powers – have joined in actions to «coercively» block supplies to maverick states and violent non-state actors by methods ranging from formal embargoes, sanctions, and regulations[13] negotiated at the UN, to tighter safety standards at production sites (including new nuclear safeguards), wider participation in export-control regimes,[14] improved controls on cargoes by air and sea, monitoring of shipping (the Proliferation Safety Initiative [15]), and more.

All these examples could be argued to reflect adversarial «us against them» thinking and to be inherently asymmetrical, in that the implementing countries have not been restrained in their own military capacities – or have even increased them for the new tasks. Some post-9/11 initiatives, however, also had the effect of improving positive cooperation and sharing, not least between former adversaries. The Organization for Security and Co-operation in Europe, for instance, has adopted common positions on non-proliferation and the control of SALWs that unite EU and NATO member states with Russia and its adherents. The United States, the EU, Norway, and Japan have worked to help Russia destroy its surplus and obsolete nuclear holdings and to close down or convert dangerous chemical production facilities. Regimes developed at the UN for universal application, such as UN Security Council Resolution 1540 on possession and transfer of weapons of mass destruction (WMD), have included follow-up processes to help weaker or less-informed states live up to their obligations. Sizeable funds have been dispensed by states and organizations to help partners build new competences in weaponry and WMD control,

[12] The reference is to arms trade embargoes imposed on specific destinations, and «disarmament, demobilization and reintegration» programs applied in post-conflict locations to dispose of illegal/surplus fighting units and their weapons

[13] These include UN Security Council Resolutions 1373 and 1540 introducing worldwide restraints on terrorist financing and unauthorized possession of or trade in WMD, respectively

[14] Among multilateral export control groups with purely Western roots in the Cold War, the Nuclear Supplies Group and Zangger Committee now include both Russia and China (with totals of 47 and 38 members, respectively), whereas the Wassenaar Arrangement on conventional arms exports (41 members) includes Russia and Ukraine. See also Amitav Mallik, Technology and Security in the 21st Century: A Demand-Side Perspective , SIPRI Research Report no. 20, 2004; available at: http://books.sipri.org/product_info?c_product_id=

[15] Currently with 72 members; see: www.state.gov/t/isn/c10390.htm.

including training for border- and customs officials. Such solutions reflect the «classic» conception of arms control by implying equal recognition, balanced obligations, and the growth of trust. But these solutions also belong within the more general post–Cold War trend of seeking security through active cooperation and intervention rather than restraint – a tendency also seen in the multiplication of «peace missions» worldwide.[16]

At the same time, the treaty method has not, in fact, been extinguished, but rather corralled into more specific areas, and experimented with in newer ones. The latest and largest experiment is the Arms Trade Treaty adopted in the UN General Assembly (itself an intriguing procedure) on April 2, 2013,[17] but the UN Security Council Resolutions already alluded to on terrorist financing and WMD governance represent distinct new forms of universal, legally binding instruments.[18] The process of finding new classes of «inhumane» weapons to be universally banned has continued, most recently with the 2008 Convention on Cluster Munitions.[19]However, in the last two decades, it has focused largely on low-tech, «poor men's» techniques that are less likely to be considered vital by advanced military nations, while avoiding topics linked with new-horizon technologies (with the honorable exception of the ban on using lasers for blinding)[20] and with equipment for use in internal security. The United States and the Russian Federation concluded the New START Treaty in 2010 and brought it into force in 2011, though the two nuclear superpowers remain divided over the need for controls on ballistic missile defense – where President Barack Obama has chosen to continue the Strategic Defense Initiative, albeit in a much reduced form.[21] Last but not least, legally binding agreements made in the context of post-conflict peace settlements have sometime created arms control/reduction obligations for specific states or groups of states, though this method – highly successful in the

[16] Such missions, if civilian and mixed operations are included, have roughly doubled in two decades, mainly as a result of other organizations besides the UN entering the field. Latest details can be found in the contribution by Jane Dundon, «Global Trends in Peace Operations,» in SIPRI Yearbook 2013: Armaments, Disarmament and International Security (Oxford: Oxford University Press, 2013).

[17] See: www.un.org/disarmament/ATT.

[18] As such, they are also controversial; see Christer Ahlström, «Security Council Resolution 1540: Non-Proliferation by Means of International Legislation,» in SIPRI Yearbook 2007 (Oxford: Oxford University Press, 2007); available at: www.sipri.org/yearbook/2007

[19] See: www.clusterconvention.org.

20 Lasers are covered in Protocol IV to the Certain Conventional Weapons convention (see note 2), adopted by the UN in 1995. In another important technological sphere, a convention to Prevent an Arms Race in Outer Space has been on the Conference on Disarmament agenda at Geneva for many years but remains politically blocked

[21] See: www.armscontrol.org/factsheets/usmissiledefense.

Florence Agreement applied to former Yugoslav nations after the Dayton Agreement [22] – has not been as widely experimented with as one might wish.

Should the friends of arms control today be trying to re-extend the treaty method from this surviving foundation and to re-conquer the space taken up since the 1990s by other methods and other actors advocating arms restraint? Trying to turn the clock back in an environment so drastically changed, and still changing, would go against general evolutionary logic. Further, when considered as just one element in an arms control toolbox, it becomes clearer that formal international-legal instruments have their limitations as well as strengths. Not only are they harder to apply to non-state actors, but they take time to negotiate and, once adopted, are hard to amend and adapt. They do not per se create cooperative communities of the kind that have brought most of the world's advances in peaceful coexistence. Rather, they have often spurred blaming-matches over compliance that have exposed (if not actually aggravated) international tensions. The worst-behaving countries can simply decline to sign up, or find a way of withdrawing when the constraints become inconvenient, as North Korea did with the Non-Proliferation Treaty in 2003. Above all, such instruments are difficult to apply to tensions arising from doctrinal asymmetries, such as the uneasy coexistence in Europe between Russia's (and some of its Western neighbors') territorial concerns on the one hand, and intervention-oriented concepts that see the continent more as a launching pad, on the other.

Arms control developed both in theory and in practice during the Cold War, a period between the late 1940s and 1991 when the two military superpowers, the United States and the Union of Soviet Socialist Republics (USSR), dealt with one another from a position of mutual mistrust. Arms control was devised consciously during the postwar period as an alternative to disarmament, which for many had fallen into discredit as a means of reducing the likelihood of war[23]. Germany had been forced to disarm following World War I but became belligerent again during the 1930s, resulting in World War II. Although Germany's weapons had been largely eliminated, the underlying causes of conflict had not. Germany's experience thus illustrated that no simple cause-and-effect relationship existed between the possession of weapons and a tendency to create war.

Following World War II, advocates of arms control as a new approach to limiting hostility between nations emphasized that military weapons and power would continue to remain a part of modern life. It was unrealistic and even dangerous, they felt, for a country to seek complete

[22] See: www.osce.org/item/43725.

[23] Barry Kolodkin. "What Is Arms Control?" (ARTICLE). About.com, US Foreign Policy. The New York Times Company. Retrieved

elimination of weapons, and it would not necessarily reduce the likelihood of war. Whereas disarmament had formerly been seen as an alternative to military strength, arms control was now viewed as an integral part of it. [24]Arms control proponents sought to create a stable balance of power in which the forces that cause states to go to war could be controlled and regulated. The emphasis in arms control is thus upon overall stability rather than elimination of arms, and proponents recognize that an increase in weaponry is sometimes required to preserve a balance of power.

The development of arms control owes a great deal to the existence of Nuclear Weapons as well. By the 1950s, when both the United States and the Soviet Union possessed nuclear weapons, the superpowers became convinced that they could not safely disarm themselves of those weapons. In the absence of guaranteed verification—the process whereby participants in a treaty monitor each other's adherence to the agreement—neither side could disarm without making itself vulnerable to cheating by the other side. The goal of the superpowers and other nations possessing nuclear weapons therefore became not total elimination of those weapons, but control of them so that a stable nuclear deterrent might be maintained. According to the idea of nuclear deterrence, a state possessing nuclear weapons is deterred, or prevented, from using them against another nuclear power because of the threat of retaliation. No state is willing to attempt a first strike because it cannot prevent the other side from striking back. Nuclear deterrence is therefore predicated upon a mutual abhorrence of the destructive power of nuclear weapons. This idea has come to be called mutual assured destruction (MAD).Many experts see deterrence as the ultimate goal of nuclear arms control.

Because many civilians generally assume that arms control and disarmament are the same thing, there has often been public disappointment when treaties have resulted in an increase in the number or power of weapons. An advantage of arms control over disarmament, however, is that even states with a high degree of suspicion or hostility toward each other can still negotiate agreements. Disarmament agreements, on the other hand, require a high degree of trust, and their formation is unlikely between hostile nations.[25]

Arms control is often used as a means to avoid an arms race—a competitive buildup of weapons between two or more powers. Such a race can be costly for both sides, and arms control treaties serve the useful purpose of limiting weapons stockpiles to a level that preserves deterrence while conserving the economic and social resources of a state for other uses.

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[24] Anup Shah (6 May 2012). "Arms Control" (ARTICLE). Global Issues

25 TREATY ON THE PROHIBITION OF THE EMPLACEMENT OF NUCLEAR WEAPONS AND OTHER WEAPONS OF MASS DESTRUCTION ON THE SEABED AND THE OCEAN FLOOR AND IN THE SUBSOIL THEREOF. US Department of State. Retrieved 13 May 2012.

1.(b) Modern Arms Control

Although disarmament and arms control agreements were forged prior to World War II (1939–45), the modern arms control effort began in earnest after the Cuban Missile Crisis of 1962. That situation erupted when the United States discovered that the Soviet Union was constructing launch sites for nuclear missiles on the island of Cuba, thereby threatening to put nuclear weapons very close to U.S. soil. President JOHN F. KENNEDY declared a naval blockade of the island, and for two weeks, the United States and the USSR existed in a state of heightened tension. Finally, the USSR and the USSR faced off in what became a white-hot international drama of brinksmanship, each side waiting to see who would blink first. With the United States' promise not to overthrow Fidel Castro's government in Cuba, the Soviets canceled plans to install the missiles. After the crisis, Kennedy wrote to Khrushchev, "I agree with you that we must devote urgent attention to the problem of disarmament. … Perhaps … we can together make real progress in this vital field.[26]"

Among the earliest arms control treaties were the Limited Test Ban Treaty (LTBT), an agreement that prohibited nuclear test explosions in the atmosphere, under water, or in space, which was signed in 1963 by the United States, Britain, and the USSR, and the 1972 Biological Weapons Convention, a superpower treaty that banned biological weapons and provided for the destruction of existing stockpiles. The 1972 convention was the first and only example, since 1945, of true disarmament of an entire weapons category. Although negotiation on a comprehensive test ban—an agreement that would prohibit all nuclear testing—continued, this solution remained elusive. Nevertheless, in 1974, the superpowers signed the Threshold Test Ban Treaty (TTBT), which limits nuclear tests to explosive yields of less than 150 kilotons. (A kiloton represents the explosive force of one thousand tons of TNT). But the TTBT did not prevent the superpowers from developing nuclear warheads (the bomb-carrying segments of a nuclear missile) with power exceeding 150 kilotons; warheads on the Soviet SS-17 missile possess as much as a 3.6-megaton capacity. (A megaton equals 1 million tons of TNT.) In 1976, the superpowers signed the Peaceful Nuclear Explosions Treaty (PNET), which banned so-called peaceful nuclear testing.[27]

Numerous arms control agreements have been designed to improve communications between the superpowers. The first of these, coming just after the Cuban Missile Crisis, was the 1963 HOT LINE AGREEMENT, setting up a special telegraph line between Moscow and Washington. In 1978, the hot line was updated by a satellite link between the two superpowers. The United States and the USSR also sought to create protocols designed to prevent an accidental nuclear war. This effort led to the 1971 agreement, Measures to Reduce the Risk of Outbreak of Nuclear

[26] "The Arms Trade Treaty". UNODA. the United Nations. Retrieved 10 December 20

[27] Jonathan Medalia (3 August 2011). "Comprehensive Nuclear Ban Treaty: Background and Current Developments" (REPORT). CRS Report for Congress. Congressional Research Service. Retrieved 17 May 2012

War, which required advance warning for any missile tests and immediate notification of any accidents or missile warning alerts.

One highly celebrated arms control agreement is the 1968 Treaty on the Non-Proliferation of Nuclear Weapons, or Non-Proliferation Treaty, designed to prevent the spread of nuclear weapons to other countries. The agreement involves well over one hundred states. Under it, countries not possessing nuclear weapons give up their right to acquire such weapons, and countries with nuclear weapons waive their rights to export nuclear weapons technology to countries lacking that technology.

Another class of arms control treaties seeks to ban weapons from as-yet-unmilitarized areas. These include the 1959 ANTARCTIC TREATY, which prohibits military bases, maneuvers, and tests on the Antarctic Continent; the 1967 Outer Space Treaty, a ban on the testing or deployment of "weapons of mass destruction" in Earth's orbit or on other bodies in the solar system; the 1967 Tlatelolco Treaty, prohibiting nuclear weapons in Latin America; and the 1971 Seabed Treaty, banning the placement of weapons of mass destruction on or below the seabed.[28]

1.(c) SALT I and After

The STRATEGIC ARMS LIMITATION TALKS (SALT I and SALT II) were first undertaken in the era of détente in the early 1970s, when relations between the United States and the USSR became more amicable. SALT I led to two agreements: the Anti-Ballistic-Missile Treaty of 1972 (ABM Treaty), which eventually limited each superpower to one site for antiballistic missiles (ABMs), the missiles designed to intercept and destroy incoming missiles; and an "interim" arms agreement limiting the number of inter-continental ballistic missile (ICBM) launchers and submarine-launched ballistic missiles (SLBMs) to those already deployed by specific dates in 1972. It also required that any modernization and replacement of ICBMs and SLBMs be on a one-for-one basis and prohibited any development of new, more powerful ICBMs. The agreement was meant to set limits before a more definitive SALT II treaty could be negotiated. When the SALT II Treaty was signed in 1979, it set a limit of 2,400 strategic missiles and bombers for each side. Although the U.S. Senate did not ratify this treaty, the United States abided by it for several years. The ABM Treaty of SALT I was much more successful than the interim ICBM-SLBM agreement. Because the SALT agreements limited only the number of ICBM launchers, or missiles, both superpowers went on in the 1970s to develop missiles with multiple warheads, called multiple independently targetable reentry vehicles (MIRVs). Launcher

[28] "Draft Fissile Material (Cutoff) Treaty, or FM(C)T". *Library: International Panel on Fissile Materials*. International Panel on Fissile Materials. Retrieved 17 May 2012.

totals thus remained constant, but the number of warheads increased dramatically. Adding warheads to missiles also made nuclear deterrence more unpredictable; a superpower with MIRVs could have enough warheads to destroy the opponent's retaliatory capability, thereby making MAD ineffective. Both superpowers felt that their land-based missile forces had become vulnerable to a first strike from the other side.[29]

Compliance with the SALT treaties became a contentious issue in the 1980s when the United States accused the USSR of violating treaty provisions on the development of new missiles. The administration of President RONALD REAGAN decided that alleged Soviet violations made it necessary to end U.S. compliance with the agreements. In 1986, the United States exceeded limits set by SALT II when a B-52 bomber equipped with cruise missiles (nuclear missiles that fly at a low altitude) entered active service. Another U.S. military proposal, the Strategic Defense Initiative (SDI), also complicated the ABM Treaty. In 1983, Reagan made a televised speech in which he announced plans to develop a space-based missile defense system. He presented SDI as an alternative to MAD. SDI would, he claimed, effectively shield the United States from a Soviet missile launch, including an accidental or third-party attack. SDI would also protect the land-based leg of the United States' nuclear triad, the other two legs of which are aircraft bombers and submarine-launched missiles. Many doubted whether such a missile defense system could actually be created, and others criticized SDI as a dangerous upset in the nuclear balance. A debate also arose as to whether SDI was in violation of the ABM Treaty.

Relations between the superpowers eventually warmed when Mikhail Gorbachev emerged as leader of the Soviet Union in the mid-1980s. Relatively young and dynamic compared with his predecessors, Gorbachev initiated reforms for increased openness in the Soviet Union that facilitated arms control agreements. In 1987, President Reagan and Soviet General Secretary Gorbachev signed the Intermediate-Range Nuclear Forces (INF) Treaty, another major step in arms control. The INF Treaty called for the elimination of an entire class of short- and intermediate-range (300- to 3,400-mile) nuclear missiles. These included 1,752 Soviet and 859U.S. missiles. It was the first treaty to result in a reduction in the number of nuclear weapons. The agreement also involved the most complete verification procedures ever for an arms control treaty. These included data exchanges, on-site inspections, and monitoring by surveillance satellites.

After the INF Treaty, the superpowers continued to try to work out a strategic arms reduction treaty that would cut the number of long-range missiles by 50 percent. By that time the superpowers each had nuclear arsenals that could destroy the other many times over, and a 50 percent reduction would still leave nuclear deterrence well intact.

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[29] Jeff Abramson. "Small Arms Conference Nets Agreement" (ARTICLE). *Arms Control Association*. Arms Control Association. Retrieved 17 May 2012.

1.(d) A New World Order

Between 1989 and 1991, a number of significant events brought about the end of the Cold War. In 1989, Gorbachev surprised the world when he led the Soviet Union in its decision to give up its control over Eastern Europe. By the summer of 1991, not only had the Warsaw Pact a unified group consisting of the Soviet Union and its allies in Eastern Europe dissolved, but so had the Soviet Union itself. Soviet Communism, one-half of the superpower equation for over 40 years, had imploded.

During this time of increasingly warm relations between the superpowers, a number of major arms control treaties were created. On November 19, 1990, the United States, the USSR, and 20 other countries signed the Conventional Forces in Europe Treaty (CFE Treaty), which President GEORGE H. W. BUSH called "the farthest-reaching arms agreement in history," an accord that "signals the new world order that is emerging." The treaty grew out of a 1989 proposal by Bush that the superpowers each be limited to 275,000 troops in Europe. As events unfolded in Eastern Europe, however, and the countries of the former Eastern Bloc became independent from the USSR, that number of troops began to seem high. Under the CFE Treaty, each side was allowed to deploy, in the area between the Atlantic Ocean and the Ural Mountains, no more than 20,000 tanks, 30,000 armored troop carriers, 20,000 artillery pieces, 6,800 combat airplanes, and 2,000 attack helicopters. The treaty required the Soviet Union to disarm or destroy nearly 20,000 tanks, artillery pieces, and other weapons, to give a 27 percent reduction in Soviet armaments west of the Urals. That decrease was small, however, compared with the 59,000 weapons the USSR shipped east of the Urals to central Asia between 1989 and 1990 as it sought to realign its forces in response to world events. On the other side, the North Atlantic Treaty Organization (NATO) forces—the postwar alliance of Western European and North American states, including the United States—were required to destroy fewer than 3,000 pieces of military equipment. In May 1991, NATO decided to reduce its forces even further. The United States, for its part, reduced the 320,000 troops it had in Europe by at least 50 percent.

Arms agreements on nuclear weapons were also reached during this period. On July 31, 1991, Bush and Gorbachev signed the first Strategic Arms Reduction Treaty (START I). Negotiations on the technically complex accord had begun as early as 1982. The agreement required the USSR to reduce its nuclear arsenal by roughly 25 percent and the United States to reduce its arsenal by 15 percent, within seven years after ratification by both nations. Numerically speaking, the USSR would reduce its nuclear warheads from 10,841 to 8,040, and the United States would reduce its warheads from 12,081 to 10,395. These amounts would bring the nuclear arsenals of each nation roughly back to levels that existed in 1982, when START negotiations

began. The agreement also limited the development of new missiles and required a number of verification procedures, including on-site inspections with spot checks, monitoring of missile production plants, and exchange of data tapes from missile tests.

Arms Control in the Post-Cold War Era

In June 1992, President George H. W. Bush met with Russian president Boris Yeltsin. In a "joint understanding," the two sides agreed to reductions of nuclear weapons beyond the levels provided for in the 1991 START agreement, with the ultimate goal of decreasing the total number of warheads on each side to between 3,000 and 3,500 by the year 2003. The two presidents also agreed to eliminate MIRVs by 2003. This agreement was signed, as START II, in early 1993.

The administration of President BILL CLINTON, who became president of the United States in 1993, revived the debate surrounding missile defense systems—and created fears that a new arms race might begin—when it developed proposals for the Theater High-Altitude Area-Defense System (THAAD). THAAD would be an elaborate missile defense system aimed at protecting allied nations from short-range missile attacks launched by countries such as North Korea. Critics maintained that THAAD would violate the ABM provisions of SALT I, widely believed to be the most successful arms control provisions ever; upset the nuclear balance; and possibly lead to an arms race. Proponents of THAAD maintained that the ABM Treaty was a relic of the Cold War and that missile defenses could protect against accidental nuclear launches.[30]

As for Europe, the new structure of power there would also create new challenges for arms control. Agreements such as the CFE were made when the Soviet Union still existed, and did not necessarily conform to current realities. As the war in the former Yugoslavia demonstrated during the early 1990s, a new political situation posed new risks. Would certain states become regional powers and upset the balance of power? Would agreements that were stabilizing for the Soviet Union turn out to be destabilizing for Russia and other states of the former USSR? Would nationalism rise as a destructive force, as it had before and during previous wars?

Some experts were proposing that the Conference on Security and Cooperation in Europe (CSCE) develop conventional arms control agreements to replace the CFE Treaty. The CSCE was formed in 1973 in an attempt to promote détente between the United States and the USSR. It includes 52 countries—50 European nations plus the United States and Canada. European leaders hoped the CSCE would play a greater role in determining a peaceful, stable future for Europe, with efforts in arms control being one of its major goals. Formally declaring this goal,

[30] aw Library. Retrieved 16 May 2012.
"Declaration (XIV) Prohibiting the Discharge of Projectiles and Explosives from Balloons. The Hague, 18 October 1907.". Humainitarian Law. International Committee of the Red Cross. Retrieved 13 May 2012

European leaders signed the Pact of Paris in November 1990. Some leaders were proposing that the CSCE replace NATO as the chief military and political organization in Europe.

During the early 2000s, U.S. defense policy changed dramatically. The election of President GEORGE W. BUSH signaled the rise of neo-conservative policy thinking about post-Cold War security, a framework that no longer prioritized defense against nuclear attack from Russia or the states of the former Soviet Union. Instead, Terrorism and so-called rogue states were said to pose the greatest danger.

In a profound departure from the super-power analysis that had formed the basis of Cold War planning, the threat was now said to come from smaller, weaker nations. Defense planners identified potential threats from North Korea, Iraq, and Iran, which were said to be developing—or as in the case of Pakistan, had already developed—nuclear weapons. They pointed to the failure of international non-proliferation agreements as reasons for the United States to reconfigure its defenses and rethink its previous agreements. Accordingly, the Bush administration moved swiftly on both fronts. In 1999, Bush had campaigned on the promise of reviving the Reagan-era SDI project to provide an anti-missile defense system. In 2001, the president unilaterally withdrew from the ABM Treaty of 1972 in order to remove any legal hindrance from testing and development of missile defense.

The end of the ABM Treaty proved controversial. Advocates of preserving the treaty praised it for preserving strategic stability, allowing for easy verification of each side's nuclear capacity, and maintaining the concept of deterrence. Sharply critical of U.S. unilateral withdrawal, both the Russians and Chinese announced they would respond by increasing their nuclear arsenals. Downplaying this threat, critics of the ABM Treaty doubted that either nation could afford to do so.

Great uncertainties began to cloud the future of arms control. Following the SEPTEMBER 11TH TERRORIST ATTACKS on the United States, the White House announced its radical new doctrine of preemptive attack: departing from historical tradition, the Bush administration declared its intention of attacking enemy nations first. [31]Accordingly, despite global objection to the doctrine, the Bush administration ordered the invasion of Iraq in 2003. Meanwhile, the risks of nuclear proliferation were starkly demonstrated in 2002 when Pakistan and India came to the brink of nuclear war, and again that year when North Korea, abrogating its non-proliferation agreement, defied the United States to stop it from developing nuclear weapons. With Washington laying out its largest defense spending in a quarter century, arms control and disarmament were clearly perceived to not be a priority of the Bush administration.

[31] Kofi Annan, Secretary General UN (10 July 2006). "SECRETARY-GENERAL'S STATEMENT" (PRESS RELEASE). Small Arms Treaty Review Conference 2006. United Nations. Retrieved 17 May 2012

The way forward

What to do? To be «fit» for survival in a Darwinian sense, arms control must constantly review its instruments and perhaps work harder on using them in conjunction. To survive in a multipolar environment with widely diffused destructive capacities, it must similarly broaden the ownership of – which is more than just participation in – all phases of weaponry restraint. This means assimilating more varied interests and cultures, but it should not be impossible at a time when «rising» states are creating more constituencies with a stake in a peaceful status quo. The latter is also true of the great majority of lawful non-state actors, whose understanding and expertise in their own fields should be better harnessed to deal with the maleficent minority.

Two more specific thoughts: When in discussions with transitioning or postconflict governments on how to reform their security sectors, topics of defense budgeting, procurement, and arms management – including export control – should be more strongly and systematically integrated than they have been hitherto. And it would be worth considering whether a wider global buy-in could be assured for «humanitarian» efforts by opening up the concept to address topics such as human rights in military service, anti-corruption in procurement, and stronger «green» standards on weapons production, use, and disposal worldwide.

With such a wide range of possible options, arms control will only become obsolete and infertile if it allows itself to do so. Yet the short-term environment for its survival is not promising. To return to our starting points: The economics of economics after the global crash have prompted many defense cuts, but they are also shifting balances between the worst-hit – and less-affected – players in a potentially destabilizing way. They encourage new export drives by hard-pressed defense producers, and increase the temptation to rely on relatively cheap nuclear weapons, or perhaps new mass-destruction techniques. Nor is an early solution visible to the disrupted and dysfunctional economics of fear. Although the United States has a president inclined toward caution, both in military investment and deployment, Russia continues to strive to make up what it sees as a 20-year shortfall in defense production and force strength. The US policy «pivot» toward Asia[32] merely highlights another, Asia-Pacific strategic complex that involves multiple powers in rapid evolution and includes few, if any, arms control traditions.[33] Problems of balance and mutual comprehension in other regions such as the Middle East and South Asia are getting no easier. None of this is made better by 12 years of relative international downgrading of arms control «culture» and the imperatives of restraint since 9/11. Clearly, the supporters of these causes are going to have to tap new energies and seek better synergy between their efforts in different fields if arms control is to survive. They should also ponder the complex and sometimes unwelcome lessons of evolutionary history.

[32] A notion introduced in the US National Security Strategy of May 2010; see: www.whitehouse.gov/sites/default/files/rss_viewer/national_security_strategy.pdf.
[33] China and Russia do apply force restraints and confidence-building measures on their mutual border.

Historians have been slow to grasp the significant, occasionally dominating, role that arms control negotiations played in Cold War diplomacy—a situation undoubtedly the result of the often mind-numbing technical aspects of these lengthy deliberations. In the prenuclear era, political disputes might spark threatening military buildups, but political dimensions remained the focus of subsequent negotiations. This changed after 1950 as weapons systems themselves took on a political character. "The arms race … was both a result of the Cold War and a cause," as the former Soviet President Mikhail Gorbachev emphasized, "as it constantly provided new stimuli for continued rivalry." The arms control pacts that gradually emerged from various multilateral and bilateral negotiations helped neutralize the insecurities brought on by the constant arrival of new weapons systems. "The decision to reduce arms," Gorbachev concluded, "became an important step on the road to ending confrontation and creating healthier relations between East and West."

Arms control and disarmament agreements were traditionally designed to accomplish two essential purposes: to stabilize the military climate and to diminish the military violence in any subsequent hostilities. The various arrangements, which reduced, limited, and regulated armaments, provided a more stable international environment; but could not themselves resolve other threatening, contentious issues. Controlling armaments had to be coupled with diplomatic resolve so that in an atmosphere temporarily cleared of insecurities inspired by unregulated weaponry, statesmen might deal with critical political, social, and economic differences.

1(e) DEFINING ARMS CONTROL AND DISARMAMENT TECHNIQUES

Although the terms "disarmament" and "arms control" have been widely used, there often has been, and still is, considerable confusion over their meanings. "Disarmament" became the fashionable term during the nineteenth century, particularly during and after the Hague Conference of 1899, to describe all efforts to limit, reduce, or control the implements of war. While some individuals may employ disarmament in the literal sense—the total elimination of armaments—most diplomats and commentators do not. The United Nations and its subsidiary agencies use it as a generic term covering all measures, "from small steps to reduce tensions or build confidence, through regulation of armaments or arms control, up to general and complete disarmament."[34]

In the early 1950s, academic specialists linking the technology of nuclear weaponry to the strategies of the Cold War began substituting the term "arms control." For them "disarmament" not only lacked semantic precision but carried utopian expectations, whereas "arms control"

[34] . Deadly Gambits: The Reagan Administration and the Stalemate in Nuclear Arms Control. New York, 1984.

involved any cooperation between potential enemies designed to reduce the likelihood of conflict or, should it occur, its scope and violence. Most arms controllers sought to enhance the nuclear deterrence system, and only occasionally sought force reductions, while literal "disarmers" dismissed arms control as a chimera and supported proposals seeking general and complete disarmament.[35]

From a historical perspective the basic techniques that comprise arms control and disarmament undertakings may be divided into six general categories:

1. Limitation and Reduction of Armaments. These pacts put specified limits on the mobilization, possession, or construction of military forces and equipment, and may result in reductions. The restrictions may be qualitative, regulating weapons design, as well as quantitative, limiting numbers of specific weapons.

2. Demilitarization, Denuclearization, and Neutralization. Demilitarization and denuclearization involve removing or placing restrictions on military forces, weapons, and fortifications within a prescribed area of land, water, or airspace. Neutralization is a special status that guarantees political independence and territorial integrity, subject to a pledge that the neutralized state will not engage in war except in defense. The essential feature of all three is the emphasis on geographical areas.

3. Regulating or Outlawing Specific Weapons. These agreements regulate the military use or the possession of specific weapons. Their rationale is that the unrestricted use, or any use, of a particular weapon exceeds recognized "just use of force.[36]"

4. Controlling Arms Manufacture and Traffic. This approach involves restrictions, including embargoes, on the sale or transfer of weapons and munitions. It may prohibit the manufacture of specific weapons.

5. Laws of War. These efforts seek to lessen the violence and damage of war. The principles underlying the rules of war (or laws of war) are (a) the prohibition of weapons that cause unnecessary or disproportionate suffering; (b) the distinction between combatants and noncombatants; and (c) the realization that the demands of humanity should prevail over the perceived necessities of combat.

6. Stabilizing the International Environment. This technique seeks to lower international tensions through lessening the possibility of an uncontrollable cause célèbre provoking an

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[35] *The United Nations Disarmament Yearbook, 1976–*. New York, 1977–.

36"Disarmament:The Biological Weapons Convention". UNOG. UNOG. Retrieved 13 May 2012.

unwanted war. In addition, it seeks to protect the environment from lasting damage due to the testing or use of military weapons[37].

Obviously, the six categories are not exclusive. The outlawing of weapons has the same effect as limiting them. Thus, a treaty that prohibits placing weapons of mass destruction in outer space (1967) is also an example of geographic demilitarization. In addition, a treaty may incorporate several arms control techniques: the Treaty of Versailles (1919), for example, limited the number of German troops, demilitarized specific zones, and outlawed German manufacture of military[38] aircraft, submarines, and tanks.

The methods of achieving arms control and disarmament objectives may be classified into three broad categories—retributive measures, unilateral measures, and reciprocal measures—which can be subdivided into six general methods:

1. Extermination. A retributive measure, extermination is an ancient and drastic means of ensuring no future warlike response from one's opponent, dramatized by Rome's destruction of Carthage or the elimination of some American Indian tribes.

2. Imposition. Also a retributive measure, imposition results when victors force arms limitation measures on the vanquished, such as the terms imposed upon Germany and other enemy states in 1919 and

3. Unilateral Neglect. Often confused with unilateral decisions, unilateral neglect refers to a nation's decision not spend for defense, as in the U.S. unilateral reduction of army and naval forces after the Civil War (1866) or the British and U.S. self-imposed arms reductions between the world wars.

4. Unilateral Decision. A consciously decided policy of self-imposed military restrictions or limitations, as in Japan's post–World War II constitution and the Austrian Peace Treaty (1955), both restricting armaments to defensive purposes[39].

5. Bilateral Negotiation. A reciprocal measure, bilateral negotiation is a traditional method by which two nations seek mutually acceptable solutions to tensions heightened by armaments, as with the Rush-Bagot Agreement (1817) and the SALT, START, and INF treaties.

6. Multilateral Negotiation. Another reciprocal measure, multilateral negotiation is a common twentieth-century approach to regional and global military-political problems that involve the interests of several nations. The Hague treaties (1899, 1907) and the Nuclear Non-

[37] Same as above
[38] Same as above
[39] START I was a successor to the expired SALT agreement

Proliferation Treaty (1968) are multilateral agreements. The Latin American denuclearization treaty of 1967 is a regionally negotiated pact.

Most American leaders, at one time or another, have defined the United States as a "peace-loving nation" that deplores the existence of large military forces and believes that their reduction will lead to a more peaceful world. Yet while American diplomats have frequently supported arms control objectives, they also have opposed them. For example, they rejected the idea of naval reductions at the 1899 Hague Conference and refused to consider political-military "guarantees" that might have brought about arms reductions during the League of Nations negotiations. Thus, early U.S. involvement in the efforts to limit weapons and warfare has been mixed.

Apart from early efforts to halt the trading in arms with various Indian tribes, the United States pursued three major undertakings during this period: demilitarizing the Great Lakes; formulating "rules of war" to govern the actions of its armed forces; and participating in the two Hague peace conferences.[40]

Rush-Bagot Agreement The War of 1812 demonstrated that the Great Lakes were of strategic importance to the United States and Britain's eastern Canadian provinces. At war's end, the British flagship on the lakes was a three-decker more powerful than Admiral Horatio Nelson's Victory, and two even larger vessels were being built at Kingston, Ontario. The Americans responded by beginning construction of two vessels that would be the world's largest warships.

These undertakings conflicted with the U.S. Congress's economy drive, so, on 27 February 1815, President James Madison was authorized "to cause all armed vessels of the United States on the lakes to be sold or laid up, except such as he may deem necessary to enforce proper execution of revenue laws." Economies also led Great Britain to curtail construction and dismantling of warships.

Despite these unilateral actions, many in Washington were concerned that minor border incidents between Canadians and Americans might lead to a renewed naval race. In November 1815, President Madison endorsed efforts to negotiate with the British to limit the number of armed ships on the lakes. If the building of warships began again, he feared, a "vast expence will be incurred" that might lead to "the danger of [a] collision" between the two countries. In London, Lord Cast lereagh agreed that such a naval race was "ridiculous and absurd.[41]"

The 29 April 1817 bilateral agreement limited the naval forces of each party "on Lake Ontario, to one vessel, not exceeding one hundred tons burden, and armed with one eighteen pound cannon. On the upper lakes, to two vessels, not exceeding like burden each, and armed with like force," and "on the waters of Lake Champlain, to one vessel not exceeding like burden, and armed with

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[40] "Declaration (XIV) Prohibiting the Discharge of Projectiles and Explosives from Balloons. The Hague, 18 October 1907.". Humainitarian Law. International Committee of the Red Cross. Retrieved 13 May 2012.

[41] Tower, John G., James Brown, and William K. Cheek, eds. Verification: The Key to Arms Control in the 1990s

like force." However, the pact did not end competitive armaments in the Great Lakes region. Fortifications continued[42] to be built, and there were violations of the naval terms, and during the Civil War, the U.S. Senate voted to terminate the agreement. Despite these obstacles, the Rush-Bagot Agreement remains one of the most successful U.S. arms control undertakings—and certainly its most enduring, for it enhanced the security of both parties and saved them a great deal of money. Also, it paved the way for the Treaty of Washington (1871), which resolved remaining political issues between the parties and led to the "unguarded frontier" between Canada and the United States.[43]

Rules of War In 1863 a Columbia University professor, Francis Lieber, submitted his Code for the Government of Armies of the United States in the Field to the War Department. The Lieber Code, as it became known, was drawn from medieval jurists and was incorporated into the Union army's General Order No. 100. Among other things, it recognized the status of noncombatants, regulated treatment of prisoners of war, prohibited the use of poison, forbade the seizure of private property without compensation, and ordered that cultural treasures not be willfully destroyed. Lieber's contribution later influenced the Declaration of Brussels (1874) on the rules and customs of war.

Hague Conferences Peace advocates everywhere welcomed Czar Nicholas II's 1899 invitation for a meeting of the great powers at The Hague to deal with the threatening international arms race. The Americans were optimistic about the conference's prospects for peace even though their own government had recently concluded a war against Spain and was committed to a naval buildup and army modernization.

President William McKinley took the position that "it behooves us as a nation to lend countenance and aid to the beneficent project." Yet the active military force of the United States "in time of peace [is] so conspicuously less than that of the armed powers of Europe," he said, "that the question of limitations had little practical importance for the United States." Thus, while the U.S. peace movement collected petitions registering popular support for reducing armaments, at The Hague, Captain Alfred T. Mahan, the U.S. delegate, joined Admiral John A. Fisher, the British naval delegate, to prevent any limitation of naval forces. Other proposals sought to restrict military budgets, prohibit the use of new types of firearms and explosives, restrict the use of certain munitions, prohibit the dropping of projectiles or explosives, prohibit the use of submarines or similar engines of destruction, and revise and codify the laws and rules of war, especially those from the Conference of Brussels that were still unratified.

Secretary of State John Hay stated that the first four restrictions "seem lacking in practicability, and the discussion of these propositions would probably prove provocative…. But it is doubtful if wars are to be diminished by rendering them less destructive, for it is the plain lesson of

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[42] Talbott, Strobe. Endgame: The Inside Story
[43] Stares, Paul B. The Militarization of Space

history that the periods of peace have been longer as the cost and destructiveness of war have increased." Despite Washington's lack of interest, declarations prohibiting the use of asphyxiating gas and expanding (dum-dum) bullets and the throwing of projectiles from balloons were approved. With the U.S. delegation's support, rules of war aimed at preventing armies from committing excesses—such as those at the expense of noncombatants and prisoners of war—also were endorsed by the conferees.

At the Second Hague Conference of 1907, some thirteen new declarations clarifying and codifying the law of war were agreed upon. These were revised in 1929 and 1949. The conventions relating to prisoners of war and noncombatants were the basis of considerable diplomatic activity during World War II, the Korean War, and the Vietnam War.

Prior to the Second Hague conference, President Theodore Roosevelt indicated that the United States might support naval limitations; however, none of the major European powers would consider reducing or limiting their military forces. In June 1910 both houses of Congress unanimously endorsed naval limitations, a decision sparked by the British launching of the dreadnoughts, a new class of battleship, which promised another round of expensive ship construction. The proposal failed to gain support abroad, but it pointed to new efforts a decade later

The enormity of death and destruction wrought by World War I focused the attention of the American public and its government on ways of preventing future war. America's role in these interwar undertakings included the introduction of disarmament in the League of Nations Covenant, sponsorship of the Washington naval limitation system, 1922–1935, endorsement of the Kellogg-Briand Pact aimed at "outlawing" war, and belated, ambivalent support of the League of Nation's disarmament efforts.

League Covenant and Disarmament In January 1918, President Woodrow Wilson emphasized disarmament in Point Four of his Fourteen Points (a statement of the Allies' war aims) and in his endorsement of it as Article Eight of the League of Nations Covenant. Point Four called for "adequate guarantees given and taken that national armaments will be reduced to the lowest point consistent with domestic safety." Wilson did not consider arms reduction a high priority, but he clearly saw it as in the U.S. interest. A commitment to general disarmament, no matter how ambiguous, would justify the imposition of arms restrictions on Germany and its allies.

At the Paris Peace Conference Wilson reduced his emphasis on arms reductions because of considerations of national sovereignty, the threat of Bolshevism, and demands of economic nationalism. He even threatened a new naval race by urging Congress to fund the construction of 156 warships, including ten super-dreadnoughts and six high-speed battle cruisers, called for in the Naval Appropriation Act of 1916, in order to obtain political concessions. British Prime Minister David Lloyd George was unwilling to accept U.S. naval parity, nor did he agree with Wilson's desire to append the Monroe Doctrine to the League Covenant. Unwilling to undertake

a costly naval race, Lloyd George relented on the latter point and agreed to future negotiations on the former.[44]

Wilson tried the same strategy during the Senate's ratification hearings (May 1919–March 1920), insisting there were only two alternatives: the League of Nations and disarmament, or increased naval construction and higher taxes. The Senate rejected league membership on the grounds it impinged upon the nation's sovereignty and left the naval problems for the Harding administration.

The Washington Naval System In the spring of 1921, President Warren G. Harding and Secretary of State Charles Evans Hughes confronted a burgeoning naval race—before the year was out, more than 200 warships were under construction. Hughes invited the other major naval powers—Great Britain, Japan, France, and Italy—to meet at Washington, D.C., on 12 November 1921. Over-ruling his admirals, Hughes developed a detailed plan grounded on two themes: an immediate halt of all capital ship construction and the defining of national strategies in terms of "relative security." By presenting his proposal for capital ship reductions and limitations in his opening speech, Hughes seized the diplomatic initiative and gained widespread public support.

The Washington Conference produced seven treaties and twelve resolutions, two of which contained arms control provisions. The most significant was the Five Power Naval Treaty of 6 February 1922, which established a reduction in battleships, quantitative limits (or ratios—United States 5:Britain 5:Japan 3) on capital ships and aircraft carriers, qualitative restrictions on future naval construction, and restrictions on fortifications and naval bases in the central Pacific. The ratios established battleship parity between the United States and Britain and acknowledged Japan's de facto preeminence in the western Pacific. Naval limitation was realized because the United States, Britain, and Japan had temporarily resolved their political differences, especially regarding China, and desired to reduce naval expenditures.

Attempts to abolish or restrict submarines failed, and the agreement to prohibit the "use in war of asphyxiations, poisonous or other gases" was not ratified, but the two concepts did reappear—the former in the London Naval Treaty of 1930, and the latter in the Geneva Protocol of 1925.

Since a formula for limiting smaller warships was not found, a new naval race appeared as admirals rushed to build cruisers that would fall just below the 10,000-ton limit that defined capital ships. Facing an expensive naval building program, Congress urged President Calvin Coolidge to negotiate limits on cruisers, destroyers, and submarines. At the Geneva Naval Conference (1927), the administration wanted to extend the Washington Treaty's Big Three capital ship ratios (5:5:3) to auxiliary categories. However, the U.S. delegation abandoned Hughes's earlier approach of considering naval armaments as one thread in existing political relationships, and instead focused on technical issues.

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[44] Council on Foreign Relations: Global Governance Monitor on Nonproliferation, available at http://www.cfr.org

With Japanese negotiators on the sidelines, American and British naval experts agreed on the idea of parity, but could not define it because the British and U.S. fleets were structured quite differently. Whereas the British sought strategic equality that acknowledged commercial and imperial obligations, the Americans demanded mathematical parity. The U.S. insistence on fewer large cruisers with eight-inch guns and Britain's determination to have more, smaller cruisers with six-inch guns deadlocked negotiations.

The failed Geneva effort paved the way for the London Naval Conference of 1930. Herbert Hoover's election in 1928 coincided with that of British Prime Minister Ramsay MacDonald, who, like Hoover, believed that the reduction of armaments could contribute to world peace. Secretary of State Henry L. Stimson indicated that he and the president, employing naval experts as advisers, would seek a "yardstick" to bridge the difficulties that had plagued the 1927 Geneva Conference[45]—but no yardstick was forthcoming. The yardstick episode emphasized a recurring dilemma that plagued U.S. arms control efforts well into the Cold War era: arms control requires a perspective beyond technical considerations, for by concentrating on mathematical or other engineering factors, U.S. policymakers often tended to obscure or avoid basic political problems.

The 1930 London Naval Treaty refined the Washington naval system by applying a 10:10:7 ratio to capital ships and aircraft carriers. All five powers agreed not to build their authorized capital ship replacements between 1931 and 1936, and to scrap a total of nine capital ships. By 1936 the United States would have eighteen battleships (462,400 tons), Britain eighteen battleships (474,750 tons), and Japan nine battleships (266,070 tons). Aircraft carrier tonnage remained unchanged, despite attempts to lower it.

While the United States and Britain ultimately reached an agreement on naval "equality," many senior Japanese naval officers believed that applying the "battleship ratio" to all classes of warships would be disastrous for their nation's security. Reluctantly, however, the Japanese government accepted negotiated ratios for cruisers, destroyers, and submarines.

Naval arms control pleased most American politicians and their constituents, and President Herbert Hoover estimated that the United States saved $1 billion. However, the limits outraged professional naval officers in all three countries. The Japanese lamented that they must stop cruiser construction; the British complained that fifty cruisers did not provide protection for long sea-lanes; and the Americans felt that Japan's higher cruiser ratio reduced the chance of a U.S. victory in a western Pacific war[46].

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[45] http://www.opcw.org/chemical-weapons-convention/articles/ geneva convention

[46] *Arms Control in the Johnson Years.* Lexington, Mass., 1987.

The years following the signing of the London Naval Treaty saw increased political tensions in the Mediterranean and undeclared wars in Ethiopia and Asia. Japan demanded naval parity, but Britain and the United States refused. Subsequently, Japan withdrew from the Second London Naval Conference (1935) and abrogated the Washington naval system. On 31 December 1936, the quantitative and qualitative limitations on naval armaments ended.

Naval arms control had rested on the assumption that Japan was satisfied with its world position. However, Japanese expansionists, both military and civilian, who dominated policy by 1934 believed that the United States and Britain were hindering Japan's economic expansion, and thus keeping that nation's industries depressed. Consequently, Japan's admirals argued that, if freed from treaty restrictions, they could build a strong fleet, dominate China and Southeast Asia, and become the leading power in Asia.

Throughout the interwar negotiations over naval limitations, U.S. policies were clearly motivated by a desire to reduce military expenditures and, at the same time, gain whatever strategic advantages were possible. The desire for the former drove most civilian policymakers, while efforts to achieve the latter were foremost in the minds of senior naval officers. Only the most single-minded analyst would suggest that U.S. negotiating positions involved any significant measure of altruism.[47]

Outlawing War The Kellogg-Briand Pact, also known as the Pact of Paris for the Renunciation of War (1928), renounced offensive war as "an instrument" of national policy. It called on nations to settle their differences by pacific means. The idea originated with a Chicago lawyer, Salmon O. Levinson, who argued that international law should declare war a criminal act. While this idea appeared to be utopian, many opponents to the League of Nation's concept of collective security saw an alternative in the movement to outlaw war.

The Kellogg-Briand Pact emerged as an attempt by the Coolidge administration to induce Paris authorities to alter their position that France's security needed to be enhanced by British or U.S. political-military commitments before they agreed to arms limitations. Secretary of State Frank B. Kellogg's offer to French Foreign Minister Aristide Briand acknowledged the virtue of a world tribunal to enforce the outlawry of war, but he was realistic enough to know that the Senate and the American people (and those of most other nations) were not ready for such a commitment.

Most historians have criticized the pact for its failure to provide for enforcement. Only a few believe it influenced international law, even though after World War II major war criminals were found guilty of violating the treaty. Any reappraisal of the Kellogg-Briand Pact should take into consideration that it did not abolish "defensive" war and that the United States and other nations made various reservations upon signing.

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[47] Stuart Hughes (1 August 2010). "Treaty enacted to ban cluster bombs". *BBC World News* (BBC).

The League of Nations and Disarmament After several early committees failed to come up with a disarmament proposal, the League of Nations created an "independent" preparatory commission in 1926 to prepare a draft treaty. President Calvin Coolidge accepted the league's invitation to send a representative. In a message to Congress on 26 January 1926, he declared that "the general policy of this Government in favor of disarmament and limitation of armaments cannot be emphasized too frequently or too strongly. In accordance with that policy, any measure having a reasonable tendency to bring about these results should receive our sympathy and support."

The American delegation, headed by Hugh Gibson, U.S. minister to Switzerland, maintained a fairly consistent policy between 1926 and 1930. He emphasized that the U.S. Army had been unilaterally reduced after World War I from some 4 million men to 118,000, which he acknowledged America's geographical situation made possible. Gibson also emphasized—pointing to the Washington naval system—that his government favored the limitation of naval forces by categories and approved qualitative restrictions only when accompanied by quantitative limitations. Still, the United States opposed budgetary limitations and any regulation that might restrict industrial potential.

The Conference for the Reduction and Limitation of Armaments—also known as the World Disarmament Conference—convened in Geneva on 2 February 1932 and began negotiations on the preparatory commission's draft convention. Secretary of State Stimson declared that President Hoover would not authorize discussions involving political arrangements to facilitate arms control measures. Nevertheless, on 9 February 1932, Gibson assured the gathered diplomats that the United States wished to cooperate with them to achieve arms limitations. As the disarmament conference bogged down, President Hoover and, later, President Franklin D. Roosevelt attempted to stimulate negotiations. Citing the Kellogg-Briand Pact's outlawing of aggressive war, Hoover on 22 June 1932 proposed a one-third reduction in all armies and battle fleets. Additionally, he urged the abolition of tanks, large mobile guns, and chemical weapons and the prohibition of aerial bombardment.[48]

When the French argued that his plan must be anchored to some kind of verification, Hoover reversed the earlier U.S. position. President Wilson initially rejected permanent supervision of German disarmament at Versailles because this precedent might run counter to America's future interests. "The United States," he declared, "will not tolerate the supervision of any outside body in [disarmament], nor be subjected to inspection or supervision by foreign agencies or individuals." Secretary of State Frank Kellogg restated this policy in January 1926. "The United States will not be a party to any sanctions of any kind for the enforcement of a treaty for the limitation of armaments," he asserted, "nor will it agree that such treaties to which it may be a party shall come under the supervision of any international body—whether the League of Nations or otherwise." Arms limitation measures, he insisted, "so far as we are concerned, must

[48] KIRIT RADIA . "Nuclear Treaty: A Guide to Disarmament" (NEWS ARTICLE).

depend upon the good faith of nations." On 30 June 1932, Stimson announced that the United States was prepared "to accept the right of inspection" if there was any likelihood of concluding "a treaty of real reduction." This belated change of policy was insufficient because the French now also demanded a guarantee of military assistance in case of attack.[49]

On 16 May 1933, President Roosevelt proposed abolition of modern offensive weapons. He also announced America's willingness to consult with other states in the event of threatened conflict, but since the Senate showed little interest in abandoning neutrality for international cooperation, this initiative failed. Confronted by French intransigence and German aggressiveness, the World Disarmament Conference slowly dissolved without any accomplishments.

At the beginning of the Cold War, some American leaders were wary of entrusting any element of national security to arms control and disarmament, even if the agreements were linked to functioning international organizations. Harking back to the U.S. lack of military preparedness on the eve of World War II,[50] these individuals believed that interwar disarmament activities had compromised national security. Bernard M. Baruch, who presented the initial U.S. proposal for international control of atomic weaponry, recalled that in preparing the plan "the [interwar] record of meaningless disarmament agreements and renunciations of war" was "very much in my mind."

Other policymakers believed that Japan's decision to challenge the United States was the result of naval limitation treaties that had left the United States with an inferior navy. After World War II, James Byrnes, President Harry Truman's secretary of state, recalled that as a young congressman he had approved of the Washington Naval Treaty and that "what happened thereafter influences my thinking today." Byrnes felt that "while America scrapped battleships, Japan scrapped blueprints. America will not again make that mistake." Secretary of State Dean Acheson, who assisted in developing the Baruch Plan, reportedly saw in international efforts to control atomic energy "a parallel with the Washington Disarmament Conference of 1921–1922. The idea of heading off a naval race had been a good one, but the content of the treaties was wrong. Worse, the United States did not build all the ships allowed by the treaty limits and the Japanese fortified their island bases."

[49] See: www.osce.org/item/43725.

[50] A notion introduced in the US National Security Strategy of May 2010; see: www.whitehouse.gov/sites

CHAPTER- 2

MAJOR WEAPONS

NUCLEAR WEAPONS

The world's first nuclear weapons explosion on July 1, 1945 in New Mexico, when the United States tested its first nuclear bomb. Not three weeks later, the world changed.

On August 6, 1945, the United States dropped an atomic bomb on the Japanese city of Hiroshima. It killed or wounded nearly 130,000 people. Three days later, the United States bombed Nagasaki. Of the 286,00 people living there at the time of the blast, 74,000 were killed and another 75,000 sustained severe injuries[51]. Japan agreed to an unconditional surrender on August 14, 1945; it also resulted in the end of World War II.

In subsequent years, the United States, the Soviet Union and Great Britain conducted several nuclear weapons tests. In 1954, President Jawaharlal Nehru of India called for a ban on nuclear testing. It was the first large-scale initiative to ban using nuclear technology for mass destruction.

In 1958, nearly 10,000 scientists presented to United Nations Secretary-General Dag Hammarskjold a petition that begged[52], "We deem it imperative that immediate action be taken to effect an international agreement to stop testing of all nuclear weapons."

France exploded its first nuclear device in 1960 and China entered the "nuclear arms club" in October 1964 when it conducted its first test.

The United States, Soviet Union and some sixty other countries signed a treaty to seek the ends of the nuclear arms race and promote disarmament on July 1, 1968. The treaty bars nuclear weapons states from propogating[53] weapons to other states and prohibits states without nuclear weapons to develop or acquire nuclear arsenal. It permits the use of nuclear energy for peaceful purposes. It entered into force in 1970 and was extended indefinitely and unconditionally on May 11, 1995.

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[51] . See Bipartisan Security Group, Status of Nuclear Non-Proliferation Treaty, Interim Report (Global Security Institute, June 2003), preface.

[52] Mohamed ElBaradei, "Towards a Safer World," The Economist (October 18, 2003), pp. 47-48; Ariel

[53] . George Bunn, Arms Control by Committee: Managing Negotiations with the Russians (Stanford University Press, 1992), pp. 59-72.

In 1974, India conducted its first nuclear test: a subterranean explosion of a nuclear device (not weapon). India declared it to be a "peaceful" test, but it announced to the world that India had the scientific know-how to build a bomb.

At this time, the five declared nuclear weapons states are the USA, USSR, UK, France and China.

In December, 1986, The South Pacific Nuclear-Weapon-Free Zone was put into effect.

American and North Korean delegations met in Geneva in autumn 1994 to establish a framework to resolve nuclear issues in the Korean peninsula. Under the agreement, North Korea would sign a treaty on the non-proliferation of nuclear weapons in exchange for U.S. support in building safe nuclear energy facilities and formal assurance against the threat or use of nuclear weapons by the U.S. against North Korea. Both sides agreed to take steps towards better political and economic relations. In subsequent years, South Korea and Japan have invested billions to help build safe nuclear energy plants in North Korea. By 2003, North Korea has cancelled this and all other international agreements on non-proliferation.

The United Nations, on December 12, 1995, decreed an immediate ban on all nuclear testing and urged disarmament with the vision of a world free of nuclear weapons.

Later that month, ten Southeast Asian countries signed the Bankok Treaty, establishing the Southeast Asia Nuclear-Weapon-Free Zone. In Spring 1996, 43 African nations sign the Pelindaba Treaty establishing the African Nuclear-Weapon-Free Zone.[54]

On September 10, 1996, the United Nations, in a landslide vote, adopted the Comprehensive Test Ban Treaty and two weeks later, the United States was the first to sign. (The U.S. Senate, however, rejected the treaty three years later.)

On May 11, 1998, India shocked the world by exploding three nuclear devices amounting to about six times the destructive power of the American bomb dropped on Hiroshima in 1945. The next day, it tested two more nuclear explosions. The world was stunned when Pakistan responded with six nuclear arsenal tests of its own[55].

World leaders admonished the two long-time adversaries in breaking the Comprehensive Test Ban Treaty (put into force in 1970). The U.S. imposed strict economic sanctions against both countries and lobbied for the World Bank, International Monetary Fund, and other countries to do the same. The sanctions were lifted in 2001 when the U.S. needed Pakistan and India's support to fight al Qaeda and other terrorist cells in Afghanistan.

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[54] Leonard Weiss, "Atoms for Peace," Bulletin of the Atomic Scientists (November-December 2003), pp. 34, 37, 41
[55] Bunn, Arms Control by Committee, pp. 64-66

In 1998 North Korea alarmed Japan by test-firing a medium range-missile (without weapons) over the Japanese mainland. The missile's apparent range, some 1,000 kilometers or 600 miles, meant that any part of Japan -- and by default any part of South Korea -- was within range of North Korean weaponry. Japan is the only country ever to have been attacked by nuclear weapons and anti-nuclear sentiment runs particularly deep.

In 2002, American President George W. Bush named Iran, Iraq and North Korea as the Axis of Evil, in part due to U.S. suspicions of those countries having weapons of mass destruction. Later that year, unofficial reports suggest that North Korea has confirmed the existence of nuclear arsenals, and intelligence reports indicate that the dictatorial power will have enough plutonium to build five or six nuclear bombs by May 2003.

On October 9, 2006 North Korea tested a nuclear weapon with the approximated power of the Hiroshima bomb. North Korea announced to the world that it has become the world's eighth declared nuclear weapons state. Its missiles have the range to hit targets in South Korea, Japan as well as U.S., Chinese, and Russian territories.

The United States is the only known country to have missles with range to attack any target on earth, but over thirty countries have unmanned planes that are undetected by missle defense sys‘The explosive force of nuclear fission has changed everything except our modes of thinking and thus we drift towards unparalleled catastrophe. We shall require an entirely new pattern of thinking if humankind is to survive.’ Albert Einstein, 1946

The Manhattan Project

Scientific breakthroughs in the 1930s made atomic bomb production possible. Fearing the prospect of Hitler developing nuclear [56]weapons, top physicists from around the world joined the secret ‘Manhattan Project’ to develop them first. Unprecedented funding came from the US. When Germany surrendered in May 1945, the Manhattan Project had not yet developed a working weapon. Many scientists lobbied for their research to be turned to peaceful purposes. But US President Harry Truman saw the advantage of possessing the bomb ahead of the Soviet Union, and ordered the first test in July, resulting in the mightiest explosion humanity had ever witnessed[57].

Hiroshima

Truman immediately decided to use this awesome weapon to attack Japan, with which the Allies were still at war. Officially, this was to force the stubborn Japanese leadership to capitulate. In fact, Japan was already seeking a negotiated surrender. It seems likely that the US nuked Japan to show the world that it had a unique and devastating weapon and was prepared to use it.

[56] News article in new York times,dated-3-5-2010
[57] Same as above

On 6 August 1945, a bomb known as 'Little Boy' was dropped on Hiroshima. Resident Dr Shuntaro Hida was visiting a patient outside the city at the time: 'My whole heart trembled at what I saw. There was a great fire ring floating over the city. Within a moment, a massive deep white cloud grew out of the centre and a long black cloud spread over the entire width of the city, the beginning of an of an enormous storm created by the blast. I decided I had to return as soon as possible. I looked at the road before me. Denuded, burnt and bloody, numberless survivors were in my path; some crawling on their knees or on all fours, some stood with difficulty or leant on another's [58]shoulder. No-one showed any sign that helped me to recognize him or her as a human being. The cruellest sight was the number of raw bodies that lay one upon the other. Although the road was already packed with victims, the terribly wounded, bloody and burnt kept crawling in. They had become a pile of flesh.'

After shock

'About a week after the bombing unusual symptoms began to appear in the survivors,' remembers Dr Shuntaro Hida. 'When patients raised their hands to their heads while struggling with pain, their hair would fall out. Experiencing severe symptoms of fever, throat pain, bleeding and depilation, the survivors fell into a dangerous condition within an hour of the onset. Very few escaped death. Our patients were dying from a bomb which could kill them long after the blast.' The total number of deaths in the first hours was 75,000, but many more died within a week from acute radiation poisoning. By December 1945, 140,000 were dead, and by the end of 1950, 200,000.

Three days later, the US dropped a second bomb – nicknamed 'Fat Man' – on Nagasaki. Around 40,000 died immediately, rising to 140,000 by the end of 1950. Truman promised to eliminate Japanese cities one by one in a 'rain of ruin'. Japan surrendered on 15 August, on the same conditions it had asked for before the bombings.

Test victim: an abandoned baby in Semipalatansk, Russia's nuclear test site. Over a million people in the region have been contaminated with radiation from over 500 bomb explosions. Photo: paul lowe / panos

The H-bomb

Moscow had obtained information from spies involved with the Manhattan Project. After the War, it took the Soviets only four years to produce their first fission bomb. Truman retaliated with a crash programme to develop a weapon thousands of times more powerful again: the 'hydrogen' or thermonuclear bomb. Although many scientists objected, their concerns were ignored. The US tested its first fusion bomb (code-named 'Mike') in 1952. More than 450 times

[58] News article inew York times,dated-3-5-2010

the power of the Nagasaki bomb, it obliterated Elugelab atoll in the Marshall Islands. Not to be outdone, the Soviet Union exploded its first thermonuclear device in August 1953.

Jellyfish babies

The tit-for-tat nuclear escalation of the Cold War had begun. The US conducted a catastrophic H-bomb test at Bikini Atoll, which yielded twice the expected destructive power, producing a fireball three miles high. A cloud of radioactive fallout contaminated 11,265 square kilometres. Marshall Islanders fell ill with radiation sickness, their homes rendered permanently uninhabitable. Over time, many suffered horrific after-effects. In 1996, Lijon Eknilang from Rongelap Atoll told the International Court of Justice how she and other Marshallese women had given birth to 'monster babies': 'One woman on Likiep gave birth to a child with two heads. There is a young girl on Ailuk today with no knees, three toes on each foot and a missing arm. Her mother had not been born by 1954, but she was raised on a contaminated atoll. The most common birth defects have been "jellyfish" babies, born with no bones in their bodies and with transparent skin. We can see their brains and hearts beating. The babies usually live for a day or two before they stop breathing.[59]'

Throughout the 1950s the US and USSR competed for nuclear supremacy. By the 1960s both had developed intercontinental ballistic missiles which could be launched far away from their target, and submarine-launched missiles which could sneak up without any radar warning. This situation came to be known as Mutually Assured Destruction (MAD) or 'deterrence'. Never mind who attacked first – both nations would be damaged to the point of collapse. This meant, the theory went, that war would be suicide and so no country would risk it. But far from keeping the arms race under control, MAD provoked the production of thousands of nuclear weapons by both superpowers, each striving to possess enough firepower to launch a nuclear first strike that destroyed the ability of the attacked country to respond.

The climax of diplomatic brinksmanship came in early 1962 when the US discovered that Russia was placing missiles in Fidel Castro's Cuba, allowing for a nuclear attack on the US mainland. The two superpowers came terrifyingly[60] close to a nuclear war, averted by a last minute compromise[61].

In the meantime, three more countries had joined the nuclear club. The British Government was determined to get its own bomb. As Foreign Secretary Ernest Bevin bluntly put it: `We have got to have this thing over here whatever it costs… and we've got to have the bloody Union Jack on top of it.' Bevin got his wish in October 1952. From 1958, Anglo-American co-operation meant

[59] A Strategic Choice: New Bunker Busters vs. Nonproliferation," Arms Control Today (March 2003), p. 3.

[60] , Stemming the Tide: Arms Control in the Johnson Years (Lexington Books, 1987), p. 305

[61] Same as above

that Britain's nuclear arsenal was dependent on the US for its operation. France launched a civil nuclear research programme in the 1950s, a by-product of which was weapons-grade plutonium. Under Charles de Gaulle it successfully tested a nuclear bomb in 1960. China – with help from a subsequently regretful Russia[62] – was able to test an A-bomb in 1964, a nuclear missile in 1966, and an H-bomb in 1967. China is the only state committed to using its nuclear weapons only in retaliation to a nuclear attack.

RESIST OF CONTROL

As the danger grew, public opposition to the bomb snowballed. In 1950, the 'Stockholm Peace Appeal' secured 500 million signatures from 79 countries calling for nuclear weapons to be banned. Shock at the scale of radioactive contamination at Bikini Atoll provoked calls for a ban on nuclear testing. In 1958, the Campaign for Nuclear Disarmament was launched in Britain. Anti-nuclear marches attracted tens of thousands, and dedicated activists engaged in civil disobedience, some undergoing lengthy prison sentences.

The first serious attempts by politicians to reduce tensions and control the spread of nuclear weaponry were prompted by the Cuban Missile Crisis. A military hotline was installed between the US and Soviet presidents, aimed at improving communication and avoiding dangerous misunderstandings. The two superpowers signed the Partial Test Ban Treaty in 1963, agreeing not to test nuclea[63]r weapons in the atmosphere, underwater, or outer space. Testing underground continued.

Pros & Cons of Nuclear Weapons

The use of nuclear weapons would result in complete devastation and destruction, which is why the Cold War dragged on for so long. America and the USSR both realized that if either side decided to use nuclear weapons, the results would be catastrophic. There is very different political landscape today, though, and it is not nuclear weapons which are seen as the greatest threat, but rather terrorist cells. However, there is still some concern that less stable regimes have, or may have, access to nuclear weapons. There is anxiety that if Iran, for instance, began to develop nuclear weapons, this could be dangerous for the west

Little Boy was dropped on Hiroshima and it was the first generation of nuclear weapons. Compared to today's nuclear bombs (bottom), Little Boy is tiny in terms of it's power and destruction capabilities. Nevertheless, Little Boy did some massive damage to Hiroshima. Imagine what the latest nuclear arsenal could do.

[62] S.k. kapoor,international law ,pg-34 and 35
[63] Same as above

Power to destroy

The trouble with nuclear weapons is that once one nation has the capabilities to produce nuclear weapons, every other nation wants access to the technology. Clearly, if one nation has nuclear weapons and none of the other nations do, then they are at a disadvantage. The country with nuclear weapons can hold the other nations to ransom and get them to whatever they want, since no national representative can refuse when their country could potentially be destroyed. That is why it is difficult for nations to give up their nuclear weapons; because they don't want to be the first to give them up and leave their nation vulnerable.

Fat Man was dropped on Nagasaki and it was way more powerful than Little Boy. After 2 bombs were dropped, Japan surrendered.

Sense of security

Nuclear weapons[64] are expensive to keep; they're hard to destroy safely; and, in the end, they are unlikely to be put to use. If they were ever to be used, the outcome will affect international relations profoundly. Innocent citizens would be killed and following generations would suffer from the ill effects of radiation poisoning. No national representative is likely to stand up and condone the use of nuclear weapons, yet all are too afraid to give them up. If they have nuclear weapons, at least they can feel safe that their nation won't be attacked, since to do so would ensure mutual destruction. Cost money and doesn't deal with current threat

Surely, the money used to produce and maintain nuclear weapons could be put to better use, especially when modern warfare is so different from what existed during the Cold War. In today's society, it is guerrilla warfare and terrorism which pose the greatest threat. Being in possession of nuclear weapons is unlikely to do anything to lessen this threat, yet politicians have difficulty admitting this. They don't want to be seen weak, especially in the media, and so every national leader who has access to nuclear weapons decides to hold on to them.

The nuclear weapon effect

It is difficult to see a good reason for the existence of nuclear weapons, especially when everyone is aware of what[65] will happen if they are ever used. Perhaps their continued existence

[64] wikepedia
[65] Wikepedia

means that people have to remain alert to the dangers posed by nuclear weapons and maybe that is one reason we have not seen another world war.

More on nuclear weapons - The Cons of Nuclear Weapons

From hippy protest groups to large international organizations, there is an incredible push to rid the world of nuclear weapons. From first hand experience of the horrors that nuclear weapons cause to fears as to the ending of the world, nuclear weapons are widely considered more trouble then they are worth. Below are a few of the major reasons why.

1. Fallout on Populations Outside Of Target Zone

Nuclear weapons are a challenge to use if you are targeting only military targets. For example, it is impossible to target a bunker in the center of a city while sparing anything less then an incredible number of collateral casualties. As a result, nuclear weapons are limited to very specific uses, decreasing their utility.

If used, then there is considerable fallout outside the target zone. Winds and the prevailing climate of the area will spread radioactive debris across a very wide area. This means that otherwise inhabited areas are no longer capable of being lived in. Famine may result. If nothing else, large populations will have to relocate, adding incredible stress to the local economy[66].

2. The Long Term Health Effects of Radiation

One of the most troubling concerns created by nuclear weapons are the potential health risks created by the use of nuclear weapons. While there may be a notable amount of deaths caused by the initial explosion, far more people will die long and painful deaths as a result of the radiation created by the blast. Cancers, painful tumors, and more will create a generation of individuals who will suffer. In addition, there are the effects radiation has on pregnancy, dramatically increasing the risk of health defects in babies and children[67].

While the area hit with a nuclear weapon will be uninhabitable for an extended period of time, the surrounding area where radiation goes to will also be unsafe. Food grown in radioactive areas cannot be eaten. Local wildlife will die and any local eco-system will completely collapse. Entire parts of the area will be uninhabitable for decades, if not centuries after.

3. Nuclear Winter

[66] Wikepedia

[67] Article on arms control in international law by rahul bose,29,4,2010

Taking the above into consideration, nuclear weapons are capable of inflicting tragedy and disaster on a global scale. Known as a nuclear winter, nuclear weapons can be used to end society as we know it.[68] A nuclear winter will occur if enough nukes are launched on the ground or if a nuclear weapon is exploded in the upper atmosphere. In either case, the sun will be blocked out by air born debris, effectively killing most of the plants and animals humanity survives on. Along with widespread radiation poisoning and starvation, entire governments will fall apart, leading to a state of global anarchy never before seen. It will take decades to centuries for the earth to recover after such an event.

4. Accidental Use

Mistakes happen all the time. An alarming, and deeply unsettling truth is that accidents occur with nuclear weapons. There have been several reported cases where nuclear weapons were almost launched due to human error. Regardless of what else may have happened, simple human error, along with these weapons, could spell the end of our times as we know it. In addition, computer programs can theoretically malfunction as well, accidently starting a nuclear winter due to a software glitch. In both cases, the threat of accidental use, as well as the threat of a nuclear winter, are two of the leading reasons why people do not want nuclear weapons to be used at all. As to what you believe, that is ultimately up for you to decide.

BIOLOGICAL WEAPONS

[68] Deadly Arsenals: Tracking Weapons of Mass Destruction (Carnegie Endowment for International Peace, 2002), pp. 271, 273-275; George Bunn and Chaim Braun, "Terrorism Potential of Research Reactors

Definitions

Biological agents are living organisms capable of infecting and causing both sickness and death in people, animals and plants. There are seven types of biological agents: parasites, fungi and yeasts, bacteria, rickettsia and chlamydia, viruses, prions, and toxins. Of these biological agents only bacteria, viruses and toxins are considered when referring to agents that can be used in a biological attack. While toxins are included in the list of biological agents, they are not living organisms, but small proteins produced by bacteria that can poison a person, animal or plant. Bacteria, viruses and toxins can be spread through the contamination of food, water or fomites; via vectors such as insects; or as aerosols suspended in wet or dry formulations.[69]

There are four classifications for how biological agents can be used to harm or kill a person, animal or plant. Biological Warfare (BW) is the military use of biological agents, where targets of agents are predominately soldiers, governments, or resources that might hinder a nation's ability to attack and/or defend itself. Bioterrorism (BT) is the threat or use of biological agents that, like most forms of terrorism, is intended to make political, religious or personal statements to governments and populations through attacks primarily aimed at civilians or resources that affect the civilian economy. With few exceptions, bioterrorism is non-state sponsored. Biocrime (BC) is the threat or use of biological agents for individual objectives such as revenge or financial gain. The fourth classification is Bioaccident (BA), defined as the unintentional release of an agent from a laboratory or other facility. [70] Biocrimes and Bioaccidents comprise events that typically have small effects on populations and do not require specific plans for large-scale preparedness and response.

In order for a biological agent to be effective for use in biological warfare or bioterrorism it should have the following characteristics: high toxicity, fast action, predictable in its impacts, capacity for survival outside of a host for sufficient time to establish itself in a victim, relative indestructibility with simple air, water and food purification methods, and susceptibility to treatments or vaccines available to the attacker, but not readily accessible to the victims.[71] In addition, according to criteria developed by the United States Army in 1964, biological agents should be manufacturable on a large scale, capable of efficient dissemination, stable after

[69] Zilinskas, R. Assessing the Threat of Bioterrorism. Congressional Testimony to Subcommittee on National Security, Veteran's Affairs and International Relations, US House of Representatives. October 20, 1999

[70] Definitions for Biocrime and Bioaccident taken from a talk given by Arnold Kaufmann on Basic Concepts of Infectious Diseases and Bioterrorism at the OFDA/CDC Workshop on Bioterrorism: A Public Health Emergency. 22 August 2001

[71] Adapted from list by Victor Utgoff, in Roberts and Browder. Biological Weapons: Weapons of the Future? Center for International Studies. Washington DC, 1993.

dissemination, difficult to detect or protect against, and able to produce desired psychological results. [72]

The Critical Agent List classifies a relatively short list of possible biological weapons to be used in either biological warfare or bioterrorism, and was created by the Centers for Disease Control and Prevention (CDC) in conjunction with military, intelligence, medical and public health agencies:

• Category A includes the highest priority agents because they are most likely to cause mass casualties, create panic and require a specific public health response.

According to intelligence sources, these are the agents that are most likely to be used in a future attack, and are being researched and weaponized by biowarfare programs around the world.

• Category B are the second highest priority agents, including those agents that could contaminate food or water, are relatively easy to disseminate, and require enhanced disease surveillance and diagnostic capacity. Many of these agents, such as brucellosis, glanders and ricin, were either weaponized by state sponsored programs in the past, or utilized successfully in biological warfare or terrorist incidents.[73]

• Category C includes emerging pathogens that could be weaponized in the future because of the relative ease of accessing, producing and disseminating the agents, as well as the high levels of morbidity and mortality these agents would cause.

Although the CDC has been able to categorize a list of agents that are likely to be used as bioweapons, there are additional diseases and variations of biological agents that are of great concern. The Critical Agent List specifies only twenty-one diseases, but there are at least seventy different types of biological agents that can be weaponized, not including agents that do not already exist in nature. Of the disease caused by these seventy agents, only 20-30% are currently treatable through reliable methods. Of greater concern are the agents that have been altered by scientists. It is known that the former Soviet Union created antibiotic resistant strains of anthrax, changed smallpox in order to reduce the incubation period, and developed new diseases by combining agents such as Ebola and anthrax.7 In addition, there are reports and suspicions that other nations and organizations are working towards genetically altering agents to target specific populations.[74]

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[72] US Departments of Army and Air Force, Military Biology and Biological Agents, Departments of Army and Air Force manual TM 3-216/ AFM 355-56, March 12, 1964, as quoted by Carus, Seth W. The Poor Man's Atomic Bomb?: Biological Weapons in the Middle East. The Washington Institute for Near East Policy

[73] brief history of BT/BW. Brucellosis, for example, was the first agent ever weaponized by the United States government for use against humans and animals. Glanders was used by Germany in WWI to poison allied horses

[74] Finnegan, William. The Poison Keeper. The New Yorker. January 15, 2001

Brief History

There is a long history of nations and peoples using biological agents as weapons. Many examples of use have been cited from as long ago as 190 BC, where Hannibal usedvenomous snakes to disrupt the enemy ships of Pergamus in Eurymedon. It is difficult to determine if early examples of deliberate spread of biological agents, however of It cited, were effective in causing disease, or if the acts were confounded by other naturally occurring factors. For example, most references on the historical uses of biological weapons cite the siege of Kaffa in 1346, where De Mussis, leader of the attacking army, thought to use his plague stricken force to his advantage by catapulting corpses of plague victims into the city. An outbreak of plague broke out in the Kaffa, now known as Feodosia, Ukraine. The Genoese forces retreated back to Genoa, Venice and other Mediterranean ports, sparking the second wave of the plague epidemic in Europe. While the outbreak of plague in Kaffa is usually attributed to the efforts of the attacking V Tartars, other epidemiologic factors may have been responsible, such as the spread of Vflea-infested rats.

Another example of biological warfare often referred to in the historical record is the use of smallpox during the French and Indian War in 1763. Through the combined ingenuity of British Officers Sir Jeffrey Amherst and Colonel Henry Bouquet, smallpox infested blankets were given to the Indians at Fort Pitt, setting off an epidemic of smallpox that rendered the Indian tribes incapable of fighting off the British settlers.[75]

16 In this instance, it is not clear if the blankets themselves caused the outbreak of V smallpox or whether it was due to previous exposure to the Europeans. Regardless, this method of biological warfare was used again during the American Civil War, when Dr. Luke Blackburn of Kentucky sold smallpox and yellow fever infected clothing to Union troops in an effort to support the efforts of the Confederacy. [76]

Use of biological agents continued over time, and the evidence of their effectiveness strengthened in the post Koch's postulates age. In World War I, the Germans utilized biological warfare by attacking allied horses and cattle, covertly inoculating them with anthrax (Bacillus anthracis) and glanders (Burkholderia (Pseudomonas) mallei) as they were shipped out of ports in the United States to allied forces in Europe[77]. There were also reports that the Germans used plague against the Russians in 1915, and attempted to use cholera against Italy. Between 1933 and the late 1940's, Japan researched biological warfare at a compound known as Unit 731,

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[75] Dennis, C. "The bugs of war".

[76] Same as above

[77] Bellamy, R., Ed. Textbook of Military Medicine: Medical Aspects of Chemical and Biological Warfare. Washington DC, Borden Institute, Walter Reed Army Medical Center. 1997, Chapter 2: History of Chemical and Biological

where over 10,000 prisoners of war used for research purposes died of anthrax, meningitis, cholera and plague. Japan followed its experiments with prisoners of war by using biological agents against the people of China, causing outbreaks of typhus, cholera and plague, resulting in the deaths of tens of thousands of Chinese civilians. One method used by the Japanese in Manchuria was dropping rice and plague infected fleas out of airplanes. The rice attracted rats, which then became infected[78] with the fleas, thus creating efficient epidemiologic conditions by which the disease spread to humans over a large geographic area. When the League of Nations sent a commission to investigate Japan's actions in Manchuria, Japanese military officials attempted, unsuccessfully, to poison their food with cholera.

Following World War II and revelations about the Japanese biowarfare program, the United States initiated its own biological weapons program, focusing initially on the weaponization of anti-plant pathogens for use primarily against cereal crops. The first agent weaponized by the United States for use against humans was Brucellosis (Brucella suis), an agent that also infects animals. Other agents weaponized and stockpiled by the US military were anthrax, botulism, tularemia, Q-fever, staphylococcus enterotocin B, Venezuelan Equine Encephalitis, rice blast, rye stem rust, and wheat stem rust.By 1969, however, the United States had disbanded its offensive biological warfare program and in 1972 signed the Biological Weapons Convention of 1972, banning the development, production and stockpiling of biological agents for offensive use.[79]

The only successful recent biological attack in the United States, before the events of September-October 2001, was in 1984. Members of the Rajneeshee cult in The Dalles, Oregon used Salmonella typhimurium to poison salad bars at ten local restaurants. Their purpose was to influence a local election by reducing the number of local citizens who would go to the polls. Seven hundred and fifty-one cases of Salmonella were documented, and authorities only found out about the Rajneeshee role in the outbreak during an unrelated investigation a year later. This example underscores the difficulty of detecting biological attacks and the inability of surveillance methods to determine the cause of the outbreak.

Characterizing The Threat of Biological Weapons

[78] 12Derbes VJ. De Mussis and the great plague of 1348: A forgotten episode of bacteriological warfare. JAMA 1966: 196

[79] Christopher G, Cieslak TJ, Pavlin J, Eitzen E. Biological warfare; a historical perspective. JAMA. 1997, 278(5): 412-417

On 11 September 2001, terrorists used hijacked passenger planes loaded with jet fuel as explosion devices at the Pentagon and World Trade Center, killing approximately 3000. This attack awakened the American public to the idea that terrorists have the will and the means of inflicting harm on citizens of the United States within their national borders. Following the September 11th attack, letters with anthrax were mailed to a targeted list of media and political personalities. There are many reasons why biological agents are effective means of spreading terror and may become the weapon of choice, or at least a very real part of the arsenal for terrorist organizations and hostile states contemplating an attack against the United States. Depending on the choice of agent and method of dissemination, biological agents can be used as indiscriminate weapons of mass destruction (WMD)[80], a means of targeting racial or ethnic groups, or a way to attack a population at a specific place and time. Even the threat of biological weapons can provoke widespread panic; the actual use of an agent against the United States could create mass disorder, leading to a breakdown of civil society. A government or organization eager to incapacitate or kill Americans and incite disorder might be tempted to use biological weapons because of their availability, increasing ease of production through technology and information, cost, dissemination techniques, lethality, anonymity and difficulty of detection, and lack of collateral damage. These characteristics of biological weapons make them a prime candidate for use in an attack against the United States[81].

Availability

Biological agents are often simpler to acquire and produce than nuclear, chemical or some conventional weapons. The material for biological agents can be easily grown or purchased. Some agents, such as anthrax or brucellosis, occur naturally in animals in certain parts of the world, and individuals can easily travel the globe to acquire biological agents from regions where such diseases occur naturally. For example, the Aum Shinrikyo cult was reported to have gone to Zaire to collect strains of Ebola for use in it bioweapons program.[82] Until recently, anyone could order agents from supply houses around the world. In 1995, American Type Culture Collection (ATCC), a mail order company that provides biological products, shipped

anthrax to Saddam Hussein's biowarfare program in Iraq, and plague to Larry Wayne Harris- a right wing zealot associated with Aryan Nation[83].

[80] Inglesby, T. The Germs of War: how biological weapons could threaten civilian populations. The Washington

[81] Derbes VJ. De Mussis and the great plague of 1348: A forgotten episode of bacteriological warfare. JAMA 1966: 196

[82] Christopher G, Cieslak TJ, Pavlin J, Eitzen E. Biological warfare; a historical perspective. JAMA. 1997, 8(5): 412-417

[83] Garret, L other nations are less strict about

Access to Technology

Technological advances over the last two decades in the field of biology have made it easier to produce biological weapons. Techniques once considered beyond the capacity of scientists are now commonplace, particularly in the field of genetic engineering. Bioengineers are now armed with the knowledge needed to create antibiotic resistant strains of agents, combine aspects of two agents, weaponize agents, and possibly target particular populations. The creation of antibiotic resistant strains of anthrax was a key component of the Soviet biowarfare program. [84] The Soviets were also successful in creating a more virulent strains of the disease, capable of bypassing the available anthrax vaccine currently given to United States active duty forces. [85]Bioengineers are also now able to combine two agents to complicate the presentation of a disease in humans. Again, it was the Soviets who first used this technology by using recombinant DNA to combine features of smallpox and Ebola, and in 1995, Russian scientists presenting at a scientific conference in England, reported that they had combined a food poisoning organism with anthrax. In congressional testimony in 1999, Ray Zilinskas, a biological weapons expert at the Monterey Institute of International Studies, suggested that protein engineering might be used to stabilize toxin molecules. This would enable the toxin to withstand exposure to a dissemination device and remain dangerous to humans for a longer period of time. Yet another area of research enabled by advances in molecular biology and the unlocking of the human genome is the creation of biological warfare agents that could target a particular race or ethnic group. [86] In an article in The New Yorker on Dr. Wouter Basson of South Africa, the author revealed that Dr. Basson directed research on biological agents that would target only Black Africans in the community. A researcher working for Basson concluded that in fact, it was possible to bioengineer such a germ weapon. Creating sophisticated biological weapons that could be deployed in missiles or bombs requires vast expertise and an expensive infrastructure. However, it is relatively simple and inexpensive to create biological weapons for deployment through less complicated means, such as through the contamination of food or water. According to Ken Alibek, who supervised the Soviet biowarfare program, [87] "Although the most sophisticated and effective versions [of biological weapons] require considerable equipment and scientific expertise, primitive versions can be produced in a small area with minimal equipment by someone with limited training…. They would be relatively inexpensive and easy to produce." The equipment needed to create a biowarfare laboratory is widely available through commercial means, because it is often the same equipment used in legitimate research laboratories. To prove

[84] Same as above

[85] 1991- Congress passed export control laws barring US companies from trading with countries believed to have biowarfare programs. And in 1989, Congress passed the Biological Weapons Act- prohibits any American to possess, trade, sell or manufacture biological weapons. Although these laws are in place for the United States,

[86] same as above

[87] Same as above

how easy it is to build a germ warfare facility, the Pentagon secretly and successfully constructed a germ factory in Nevada using only commercially available material. [88]

To generate bioweapons, a state or terrorist organization must have access to scientists with at least some graduate training in microbiology or genetic engineering, expertise that is widely available around the world. More specific training, however, might be needed to establish more complicated bioweapons programs that would include fitting biological agents to missiles or warheads. This expertise is available to states or organizations with strong financial resources. The political and economic situation in Russia created a supply of biowarfare scientists who were not being paid and were unable to provide for themselves or their families. Regardless of the political, moral and ethical standards of these scientists, it is reasonable to expect that a sufficient number are now working for terrorist organizations or states with bioweapons programs that were able to offer inviting financial incentives.

Access to Information

However, information on how to weaponize simpler biological agents is widely available and understandable to people with limited technological training. The Internet has created a forum by which terrorists or rogue groups can reach out, recruit members, spread messages and engage in topical dialogues. It has also made a large library of information accessible to just about anyone who is interested. One such resource is Bacteriological Warfare: A Major Threat to North America, written by Larry Wayne Harris of the Aryan Nation. This manual describes the reproduction and growth of biological agents and can be purchased over the Internet for less than $30. [89] Another book available through the Internet is called Silent Death, which instructs readers in ways to kill using chemical and biological poisons. According to the book's author, who is trained in biology and chemistry, it sells thousands of copies each year.[90] In addition to books like these, there are numerous web pages with detailed description of how to create and use biological weapons.

Cost

The cost of producing and deploying biological weapons is much less expensive than either chemical or nuclear weapons. The materials, equipment and production space are all inexpensive. According to an Office of Technical Assessment (OTA) Report, the cheapest overt production of one nuclear bomb costs around $200 million, with larger programs costing up to 50 times more. In contrast, a large arsenal of biological weapons costs less than $10 million. 38 Kathleen Bailey, an expert on defense and arms control issues at the National Institute for Public Policy, found through interviews with professors, students and pharmaceutical companies, that

[88] Miller J, Engelberg S, Broad W. US germ Warfare Research Pushes Treaty Limits. New York Times. September 4, 2001
[89] Alibek, K arms control article
[90] Same as above

all that was needed to create a biological weapons program capable of producing large amounts of an agents would be several biologists with $10,000 worth of equipment- all of which could fit into a small room. [91]

Difficulty of Detection

Unlike conventional or nuclear weapons, it is possible to covertly launch a biological attack. Biological agents are small and easy to transport. William Patrick, who led the US biological weapons development program until 1969, regularly carries a vial containing a simulant for anthrax to test whether or not it is detected. In 1999, he brought the vial with him into a hearing of the House Permanent Select Committee on Intelligence without being detected, and claimed to have done the same thing at the State Department, the Pentagon and the CIA. 46 Others have traveled through airports around the world carrying equipment for deploying biological agents through the air, and were never stopped or asked to explain the purpose of the equipment.

The first signs of an attack may not come until weeks after an agent has been deployed, due to the long latency periods of some biological agents. Thus, by the time authorities determine that an attack has taken place, the perpetrators could be anywhere in the world. Biological attacks may also be mistaken to be naturally occurring disease outbreaks, in which case no one even thinks to looka biological weapons attack, it is almost impossible to lay blame on a particular group or individual for a would be assailant. Because of the difficulty in detecting therefore virtually eliminating fears of reparation.

Biological Weapons and Public Health

In order to understand how bioterrorism relates to the public health system, one must first understand what public health means. The World Health Organization (WHO) defines health as " a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." 60 In contrast to the field of medicine where the physician's main responsibility is to the health of an individual, a public health official's main responsibility is the greater community. A 1988 Institute of Medicine (IOM) report on the future of public health defined the mission of public health as to "fulfill society's interest in assuring conditions in which people can be healthy."[92]

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[91] Dennis, C. an international law article

[92] Carus, S. Testimony before the subcommittee on national security, veteran's affairs and international relations of the house at the system

The scope of public health is enormous. According to the IOM, it is the responsibility of the American public health system to "serve as stewards of the basic health needs of entire populations, but at the same time avert impending disasters and provide personal health care to those rejected by the rest of the health system."62 The public health system is the champion of clean water, safe food, sanitary living conditions, personal hygiene, and overall safe and healthy living. Given all of its responsibilities, the public health system worksforcing it to prioritize. The CDC recently published of what it felt are the ten major public health challenges currently facing the American public health system. Included on this list was the need to prepare and respond to emerging infectious diseases, with the dual purpose of preparing for a bioterrorist attack.

Infectious Disease- A public health priority

As long as humans have roamed the earth, there have been infectious diseases. By the middle of the 20th century, however, medical and public health professionals began to feel that they were winning the war against infectious diseases and the microbes that cause them through the development and use of vaccines and antibiotics. In 1967, then Surgeon General William H. Stewart declared a victory against infectious diseases, and by the 1970's resources were being diverted to fight chronic illness and medical students were being steered away from infectious diseases as a specialty. [93]

Infectious diseases, however, did not disappear from the earth by the grace of drugs and vaccines. Problematic infectious diseases never left less developed countries with limited resources to care for citizens. Additionally, infectious diseases have rematerialized in more developed nations over the last 20 years. Infectious diseases are currently the second leading cause of death worldwide and the leading cause of morbidity measured by disability adjusted life years (DALY). In the United States, infectious diseases are the third leading cause of death, and are predicted to become even more pervasive.[94] The prevalence of infectious diseases in the 21st century is primarily due to a combination of emerging diseases, re-emerging diseases and antibiotic resistant microbes.

Emerging diseases refer to infections that are either new in the population or are rapidly moving into new geographic regions or new species.[95] Since the mid- 1970's emerging diseases have included Legionnaires' disease, E. coli 0157:H7, HIV, Hepatitis C and E, Vibrio cholerae 0139,

[93] Lauder, John. Unclassified Statement for the Record by Special Assistant to the DCI for Nonproliferation on the Worldwide WMD Threat. Commission to Assess the Organization of the Federal Government to Combat the Proliferation

[94] Same as above

[95] Carus, S. Testimony before the subcommittee on national security, veteran's affairs and international relations

Hantavirus pulmonary syndrome (Sin Nombre), Hendra virus, New Variant Creutzfelt-Jacob disease (human version of mad cow), H5N1 (avian influenza A), Lyme Disease and Nipah virus.[96] Many factors have contributed to emergence of these diseases. The earth is more densely inhabited than ever before, which has led to urbanization and overcrowding, creating unsanitary living conditions and increasing people's exposure to communicable diseases. Overcrowding has also been a factor in the increasing number of humans venturing into tropical forests to both mine resources and establish homes, both of which alter the balance of microbes in tropical regions and expose humans to new diseases. Changes in human behavior also lead to disease emergence, such as HIV and the spread of the virus through shared needles.

Increased travel and the globalization of the food trade give microbes new ways to travel [97]Fauci, A. Infectious diseases: considerations for the 21st century. Clinical Infectious Disease around the world and enter new geographic regions. Microbes themselves also contribute to emergence of diseases by continuously adapting in an effort to survive.

Re-emerging diseases are those that were once a great problem for humans, were seemingly controlled through treatment and control measures, and have recently come back to infect large numbers of people. Re-emergence of diseases can be caused by the same factors that contribute to emergence, and often happens when immunization, control and surveillance of a disease are neglected. This is the case for Diphtheria in Russia (cessation of universal vaccination with fall of Soviet Union), plague in India (neglecting of surveillance and control program) and Tuberculosis in New York (drop in funding for surveillance and control, combined with increase in homelessness and rise in an compromised population).

The rise in antibiotic resistant microbes results from human activity, notably antibiotic over prescription and use and the behavior of the microbes themselves.

Bacteria are amazingly adaptable. It can be assumed that over time, bacteria will outwit an antibiotic in order to ensure its survival. As a result of human and microbial behavior, resistant strains of a number of infectious diseases, including pneumococci, staphylococci, malaria and tuberculosis, have appeared around the world. of Humans contribute to the development of the microbes through the inappropriate use of antibiotics. Resistant strains of a number of infectious diseases have appeared around the world, including pneumococci, staphylococci, malaria and tuberculosis.

Infectious diseases as a public health problem may be much more widespread than most experts feared. (With the notable exception of certain scientists and infectious disease experts.) New research suggests that infectious agents may actually cause many of the diseases classified as chronic. Chronic diseases whose etiologies have proven to be infectious include peptic ulcers

[96] same as above

[97] Same as above

(caused by Helicobacter pylori), cervical cancer (caused by human papilomavirus), Hepatocellular cancer (caused by Hepatitis B and C), and Lyme disease (caused by Borrelia burgdorferi). It is currently estimated that approximately 16% of all cancers are associated with an infectious agent.68 Paul Ewald of Amherst College proposes that, in fact, many cancers and other chronic diseases may require the presence of an infectious agent.[98]

Emerging infections, re-emerging infections, antibiotic resistance microbes, and infections causing chronic diseases all contribute to establishing infectious diseases as a public health priority that will continue to threaten the health of Americans. Despite the overwhelming evidence of new threats to the public's health, the public health infrastructure does not presently have the resources needed to effectively manage outbreaks of infectious diseases without quickly becoming overwhelmed. For example, one case of meningitis on a college campus rapidly monopolized an entire state's office of communicable diseases, stretching even a well-funded state's resources to care for the sick patient, provide prophylactic antibiotics for everyone the sick student came into contact with during a given period of time, distribute vaccinations for the rest of the student body, and quell the fears of panicked parents and the general public. [99]It is essential to note that in this meningitis outbreak, only one person became ill. This incident makes the important point that a communicable disease outbreak where hundreds or thousands of people become ill and die is completely beyond the scope of most health departments.

Bioterrorism preparedness- as a public health priority Bioterrorism can be viewed as a public health priority through two mechanisms:

1. As a stand-alone threat that the public health system must be prepared for, and

2. As a subset of emerging infections and infectious diseases.

In the event of a biological weapons attack on the United States, it can be assumed that a large number of people will fall ill and possibly die. Although the likelihood of an attack is much smaller than, for instance, the likelihood of people developing diabetes or lung cancer, the incredible number of people whose health and lives would simultaneously be affected necessitate that the public health community appropriate time and resources towards developing a bioterrorism response plan. The second reason why bioterrorism preparedness should be considered a top public health priority is that it overlaps with preparedness for emerging infectious disease and naturally occurring outbreaks of communicable and non-communicable diseases. The core functions of public health are assessment, policy development and assurance. Therefore, among other responsibilities, the public health system is tasked with providing ongoing surveillance of infectious diseases, as well as ensuring that people will have access to

[98] Tucker, Jonathan. Motivations for and Against Proliferation: The Case of the Middle East. In: In Biological Warfare

[99] Tucker, Jonathan. Motivations for and Against Proliferation: The Case of the Middle East. In: In Biological Warfare

health services if necessary. The infrastructure needed to quickly identify and properly respond to a naturally occurring infectious disease outbreak will also identify an infectious disease outbreak caused by a biological weapon attack.[100]

Preparedness and Response to Biological Weapons in the United States

Even before the September 11th attack, there was an increase in political attention to the threat of bioterrorism, resulting in Congress assigning to government agencies the responsibility of ensuring that if and when a biological attack happens, America will be prepared. Preparedness for biological weapons comes in two phases: pre- and post attack strategies.

CHEMICAL WEAPONS

[100] Osterholm, M an article on arms control

Experts believe that terrorist use of chemical agents is an event with low probability, but potentially high consequences. While terrorist groups may or may not have an increased interest in chemical agent acquisition and use, the domestic vulnerability of the United States to chemical attack remains an issue. Both the United States and Russia have signed and ratified the Chemical Weapons Convention (CWC), and are reducing, and eventually eliminating, their chemical weapon stockpiles.[101] The possibility that terrorist groups might obtain insecure chemical weapons led to increased scrutiny of declared Libyan chemical weapon stockpiles following the fall of the Qadhafi regime. Experts have expressed similar concerns regarding the security of Syrian chemical weapons, reportedly including stocks of nerve (sarin, VX) and blister (mustard gas) agents, and their potential use.

Policy approaches to reducing chemical agent vulnerability have generally treated them as a group, rather than addressing specific agents. Additionally, military and civilian chemical agent detection has developed with little coordination, so that civilian toxic industrial chemical kits and military chemical weapons detectors have varying sensitivities and detection capabilities.

Treatments for chemical exposure vary on a chemical by chemical basis. Because comparatively few individuals have been exposed to modern chemical weapons, health care providers have limited practical experience in treatment of chemical casualties, especially among civilians. While national efforts to reduce vulnerability to terrorist chemical agent use continue, it is not clear whether these efforts address the risks from those specific agents that pose the greatest danger.

Types of Chemical Agents

Chemical agents are, for the purpose of this report, chemicals posing exceptional lethality and danger to humans.[102] Some chemical agents are toxic industrial chemicals used for commercial purposes, while others are chemicals developed predominantly as weapons.

Different chemical weapons cause different symptoms in and injuries to their victims. Because of this range of potential effects, identifying the chemical agent is a key step to determining the most effective treatment. Also, chemical weapons may produce their effects by multiple different

[101] CRS Report RL31559

[102] Experts might disagree about which chemical compounds pose the highest terrorist threats. The discussion in this report does not represent a complete list of all potential threats. For example, it does not address incapacitating agents or riot control agents

exposure routes, for example by skin contact or by inhalation. As a consequence, depending on the encountered chemical, those affected must employ different protective equipment and approaches; for example, a gas mask alone does not provide sufficient protection against chemicals that can damage through skin contact.

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Military planners generally categorize chemical agents into at least four classes: nerve, blister, choking, and blood agents.[103] This method organizes chemical agents by their biological effects.

Modern militaries have generally focused on nerve and blister agents as weapons. Several choking and blood agents are chemicals widely used in industrial processes.

Nerve Agents

Chemicals categorized as nerve agents disrupt normal functioning of the nervous system. Nerve agents do not occur naturally. Rather, they are manmade compounds that require manufacture and isolation for high purity and toxicity. Most nerve agents belong to a group of chemicals called organophosphates. Organophosphates have a wide range of toxicity. Some insecticides contain organophosphates, though these are significantly less toxic compounds than those developed as chemical weapons. Nerve agents are mainly liquids.

The first nerve agent, tabun or GA, was made in Germany in the 1930s. Following this discovery, a series of nerve agents similar to tabun were developed. This series, known as the G-series, includes the weapons sarin (GB) and soman (GD). In the late 1940s, another series of nerve agents, the V-series, was invented in England. This series includes the chemical weapon VX.

Historically, multiple countries, including the United States and the Soviet Union, manufactured and maintained stockpiles of nerve agents. As signatories to the Chemical Weapons Convention (CWC), both the United States and Russia are reducing, and eventually eliminating, their nerve agent stockpiles.

Military and terrorist use of nerve agents has been rare. Public intelligence assessments issued by the United Kingdom and the United States on August 29 and August 30, 2013, respectively, stated that the Syrian government used a nerve agent on August 21, 2013, against opposition forces outside of Damascus, Syria.4 During the 1980-1988 Iran-Iraq war, Iraq used nerve agents against Iranian troops and later against members of its Kurdish population in northern Iraq.5 In 1995, the Japanese apocalyptic cult Aum Shinrikyo used sarin on the Tokyo subway and reportedly carried out an attack in the city of Matsumoto as well.

[103] whole page taken from news article from times of india

Production

National chemical weapons programs have produced nerve agents for decades. A terrorist group might overcome technological barriers to synthesize these agents by using commercially available equipment, though the extreme toxicity of these compounds would pose appreciable danger to the manufacturer. Nerve agent production requires the use of toxic chemicals during 3 A fifth category is incapacitating agents, which this report does not address. Department of the Army, Multi-Service Doctrine for Chemical, Biological, Radiological, and Nuclear Operations, FM 3-11, July 2011. 4 Office of the Press Secretary, [104] The White House, Government Assessment of the Syrian Government's Use of Chemical Weapons on August 21, 2013, August 30, 2013; and Chairman of the Joint Intelligence Committee, Joint synthesis and specialized equipment to contain the nerve agents produced.7 Of the nerve agents, VX is the most difficult to manufacture.[105]

An alternative to the direct manufacture of nerve agents is to manufacture certain chemicals that, when mixed, react to form the desired nerve agent. These chemical combinations are called binary chemical weapons. Binary chemical weapons have certain advantages and disadvantages when compared with the actual nerve agent. The chemicals comprising a binary chemical weapon are much less toxic than the actual nerve agent and thus are less dangerous to manufacture, transport, and handle.8 The nerve agent obtained through the use of a binary chemical weapon may be less pure or effective than directly manufactured nerve agent, since the conditions under which the nerve agent is manufactured are less controlled.[106]

Effects

Nerve agents are extremely dangerous and can enter the body through the lungs or by skin contact. For the G-series nerve agents, such as sarin, the inhalation toxicity is significantly greater than the dermal toxicity. Of the nerve agents, VX is the most deadly and tabun is the least deadly, though all are exceedingly toxic.

Nerve agents interfere with the nervous system, causing overstimulation of muscles. Victims may suffer nausea and weakness and possibly convulsions and spasms. At higher concentration, loss of muscle control, nervous system irregularities, and death may occur. The action of nerve agents can be irreversible if victims are not quickly treated.

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[104] Organization for the Prohibition of Chemical Weapons, "Brief History of Chemical Weapons Use," http://www.opcw.org

[105] same as above

[106] Same as above

Treatment

Treatment for nerve agent exposure relies on two drugs, atropine and pralidoxime chloride, as antidotes.[107] Atropine prevents muscle spasm and allows the body time to clear the nerve agent. Pralidoxime chloride limits the effects of nerve agents by reversing the agent's action. U.S. troops during the Persian Gulf War received both of these drugs in the form of an antidote kit. Anticonvulsants, such as Diazepam (Valium), may reduce convulsions and seizures brought on by exposure to nerve agents.[108]

The treatment window for nerve agent exposure is agent-dependent. Some agents quickly and irreversibly act within the body, while others require a much longer time. The most effective treatment occurs before or immediately after exposure to the nerve agents has taken place. For example, treatment of soman must begin within minutes to be effective, while tabun treatment can occur up to several hours after exposure. Prophylactic use of some compounds, pyridostigmine bromide, may allow effective treatments for some nerve agents to occur with longer delay.[109]

Blister Agents

Chemicals categorized as blister agents, also known as vesicants, cause painful blistering of the skin. Such blistering is not generally lethal. Militarily, blister agents produce casualties and reduce the combat effectiveness of opposing troops by requiring them to wear bulky protective equipment.[110] The most common blister agents are called mustard agents, due to their odor.

Mustard agents are oily liquids that range in color from very pale yellow to dark brown, depending on the type and purity, and have a faint odor of mustard, onion, or garlic.[111] These liquids evaporate quickly, and their vapors are also injurious.

Blister agents are not naturally occurring compounds. Mustard agents, for example, were first developed in the late 1800s. During World War I, both sides in the conflict used these weapons against their enemies. Mustard-type blister agents produced the greatest number of chemical

[107] A fifth category is incapacitating agents, which this report does not address. Department of the Army, Multi-Service Doctrine for Chemical, Biological, Radiological, and Nuclear Operations, FM 3-11, July 2011.

[108] Same as above

[109] Same as above

[110] Same as above

[111] Organization for the Prohibition of Chemical Weapons, "Brief History of Chemical Weapons Use," http://www.opcw.org

casualties during World War I, though fewer than 5% of these casualties died. Countries have stockpiled blister agents in their chemical weapon inventories.[112] Mustard agent was also used by both sides in the Iran-Iraq war. As a signatory to the CWC, the United States is in the process of destroying its stockpile of blister agents.

Production

Production of blister agents is less complicated than that of nerve agents. Similar to manufacture of nerve agents, it requires the use of toxic chemicals and specialized equipment to contain the agent produced. The most common blister agents have many different methods for their production published in the open literature.[113]

Effects

Blister agents can enter the body by inhalation or contact with the skin or eyes. Some agents can penetrate through normal clothing material, causing burns even in cloth-covered areas. While blister agents react quickly upon skin contact, their symptoms may be delayed. In the case of mustard agent, damage occurs within one to two minutes of exposure, but symptoms damage, it is unlikely that exposed individuals can remove these agents from the skin prior to injury.

The initial symptoms of blister agent exposure are a reddening of the skin, resembling sunburn, combined with pain in the affected area. Swollen skin, blisters, and lesions may then develop, depending on the degree of exposure. Systemic symptoms, such as malaise, vomiting, and fever, may also develop in extreme cases. Exposure to large amounts of liquid mustard agent may prove fatal. The eyes are also very sensitive to blister agents. Following exposure to high concentration vapor, great pain, corneal damage, and scarring may occur. Liquid agent often causes the most severe eye damage. This may come from contact with airborne droplets or by self-contamination of the eyes from contaminated clothing or body parts.

Victims inhaling blister agents may suffer damage to their lungs. While a single, low-level exposure may produce only temporary impairment, high concentrations or repeated exposures may cause permanent damage. Inhalation victims may have symptoms ranging from mild bronchitis to blistering of the lungs.[114]

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[112] same as above

[113] Same as above

[114] Whole page taken from, www. opcw.org

Treatment

Damage from blister agent exposure, lesions and other skin irritations, is symptomatically treated. Hospitalization may be required for respiratory tract injuries. Victims who suffer severe lung damage may require mechanical ventilation. Exposure to large amounts of mustard agent may weaken the whole immune system, requiring special precautions to avoid opportunistic infections during recovery.[115]

Choking Agents

Chemicals categorized as choking agents act on the lungs, causing difficulty in breathing and, potentially, permanent lung damage. Examples of choking agents include chlorine, ammonia, and phosgene. Choking agents are generally gases, have marked odors, and may color the surrounding air.

Choking agents were manufactured for wartime use, and were extensively used during World War

I. The first major, successful, chemical attack of the war used chlorine gas at Ypres in 1915.23 Chlorine gas was later supplemented by phosgene use, which caused greater casualties. More recently, Iraqi insurgents attempted to use chlorine gas as part of improvised explosive devices in 2006 and 2007.24 Choking agents are encountered during industrial accidents.[116]

Production

Many choking agents no longer have a military purpose, and instead industrial users predominantly employ them. Commercial applications use chlorine and ammonia in large quantities for water disinfection and food refrigeration. Methods for producing choking agents are well-known, but may be technically challenging. Choking agents require specialized equipment to produce, compress, and contain them.

Effects

[115] Same as above
[116] Same as above

Choking agents injure their victims through inhalation and have a comparatively mild effect on the skin. Exposure to low chemical concentrations causes chest discomfort or shortness of breath, irritation of nose and throat, and tearing eyes. High agent concentrations may quickly cause swelling of the lungs, respiratory failure, and possibly death. Symptoms of lung damage can occur up to 48 hours after inhalation of moderate concentrations, and may not manifest themselves until physical effort aggravates the lungs.[117]

Treatment

Victims of choking agents are generally treated symptomatically. Because exercise may\ exacerbate lung damage, victims are kept at rest until the danger of fluid in the lungs is past. Symptoms such as tightness of the chest and coughing are treated with immediate rest and comfort. Shallow breathing and insufficient oxygen may require supplemental oxygen.27

Swelling and accumulation of fluids in the lungs are likely after exposure to a high dose of choking agent. Administration of corticosteroids has been recommended in cases of fluid accumulation, but their beneficial effects have not been proven.28 Rest, warmth, sedation, and oxygen are still the primary treatments, even in the case of marked edema.

Blood Agents

Chemicals categorized as blood agents interfere with oxygen utilization at the cellular level. This category includes hydrogen cyanide and cyanide salts. Hydrogen cyanide is a very volatile gas, smelling of almonds, while cyanide salts are odorless solids.

Militaries have considered hydrogen cyanide for use as a chemical warfare agent, but it has rare use in military situations because it quickly disperses. France manufactured hydrogen cyanide as a military agent during World War I.[118] Hydrogen cyanide was used in other situations though; the principle agent used to kill individuals in German World War II concentration camps, Zyklon B, used hydrogen cyanide as its active agent.[119] Hydrogen cyanide use was attributed to both sides during the Iran-Iraq war.

Production

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[117] For an overview of the Aum Shinrikyo use of sarin in the Tokyo subway system, see David E. Kaplan, "Aum Shinrikyo (1995)" in Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons, Jonathan B. Tucker, Ed. (Cambridge, MA: MIT

[118] Same as above

[119] Department of the Army, Multiservice Tactics, Techniques and Procedures for Treatment of Chemical Agent Casualties and Conventional

Hydrogen cyanide and cyanide salts have industrial applications in the chemical, electroplating, and mining industries. As with choking agents, methods for producing blood agents are relatively well-known. However, the gaseous nature of hydrogen cyanide complicates production and storage.

Effects

Blood agents act through inhalation or ingestion and impair cellular oxygen use. The central nervous system is especially susceptible to this effect. The symptoms of blood agent exposure depend upon the agent concentration and duration of exposure. In mild cases, headache, dizziness, and nausea may occur for several hours, followed by complete spontaneous recovery.

Higher concentration or longer exposure may cause convulsions and coma. Very high concentrations may lead to powerful gasping for breath, violent convulsions, and cardiac failure within a few minutes.[120]

Treatment

Treatment with specific antidotes, amyl or sodium nitrite combined with sodium thiosulfate, may reverse the effects of blood agents. The combination of these two chemicals removes cyanide, the active compound in blood agents, from the body. When convulsion or depressed breathing are present, treatment includes ventilation with oxygen and administration of anticonvulsant. Cyanide is metabolized more readily than most chemical weapons; with prompt treatment, victims may recover from otherwise-fatal doses.[121]

Protection Against Chemical Agents

Protection against chemical agents is predominantly physical, rather than medicinal, in nature. Physical protections limit exposure by protecting the eyes, lungs, and/or skin from chemical contact.

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[120] Chemical Casualty Care Division, U.S. Army Medical Research Institute of Chemical Defense, Field Management of Chemical Casualties

[121]

Physical

Physical protection against chemical agents includes gas masks and special protective clothing.[122] Gas mask filters equipped with chemical filters are effective against inhaled chemical agents but may not provide sufficient protection against chemical agents active on skin contact, such as VX or mustard agents, or high concentrations of other nerve agents.

Gas mask filters contain layers of activated charcoal and fine porous material to remove particles and chemicals from the airstream. The activated charcoal binds chemicals, preventing them from being inhaled. Each gas mask filter has a finite capacity, proportional to the amount of unbound activated charcoal remaining, and so has a limited lifetime once put into operation. A protective garment protects against those chemical weapons that cause effect upon skin contact.

These garments range in complexity and protective ability. [123]Hazardous materials suits are typically suits made of layered rubber containing activated charcoal. In comparison, military battle dress over-garments designed to protect against chemical weapons in the battlefield are generally cloth, sometimes treated to resist absorbing liquids, containing a layer of charcoal-impregnated foam. The rubber in protective equipment is impermeable to most chemical agents, while the activated charcoal acts in a manner similar to a gas mask filter. The combination of properly fitted and worn mask and suit should provide full protection against most chemical exposures.

Medical

Few examples of medical prophylaxis against chemical weapons exist. Unlike against biological weapons, vaccines do not provide immunity from the effects of chemical weapons. However, preexposure use of pyridostigmine bromide provides some protection against the nerve agent soman.36 Pyridostigmine bromide acts to supplement post-exposure administration of the nerve agent antidotes atropine and pralidoxime chloride[124]. Use of pyridostigmine bromide prevent permanent binding of nerve agents within the nervous system. Pyridostigmine bromide use is recommended only when there is a high imminent threat of chemical weapon use, as it has noticeable side effects.[125]

The U.S. Army Medical Research Institute of Chemical Defense developed as an added protection against skin contact, a chemical resistant topical skin cream. The Skin Exposur

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124

[125]Chemical Casualty Care Division, United States Army Medical Research Institute of Chemical Defense, Medical Management

Reduction Paste Against Chemical Warfare Agents, also known as SERPACWA, aims to complement chemical protective equipment provided to soldiers in the field.[126]

Decontamination

Decontamination, where chemicals are removed from the victims, usually through washing the eyes and skin with water and (against some chemical agents) a dilute bleach solution, is an essential protection against secondary chemical exposure. In addition to stopping the victim's exposure to the chemical agent, this procedure prevents those treating the victim from becoming victims themselves, and avoids contamination of treatment facilities.38 Decontamination is especially important in those cases where victims have encountered liquid chemical agents, and may have significant amounts of chemical agent trapped in their garments. In events with gaseous agents, decontamination may be less critical. Treatment of the victims with general care or agent specific antidotes occurs following decontamination.

Detection of Chemical Agents

Chemical weapons detection has been predominantly an area of concern for military planners, although the manufacture of some of these agents for commercial use requires detection capabilities at manufacturing plants and by first responders trained to handle hazardous materials.

While some military units have equipment for chemical weapon detection, civilian first responders use a variety of commercial equipment to detect and identify a wide range of chemicals, generally in a hazardous material context.

Because of the wide spectrum of potential chemical agents, the development of a portable, integrated instrument that quickly detects all chemical agents remains an area of research and development. The Department of Defense employs a series of technologies to detect and identify chemical agents, including personal sensors, automated atmospheric sampling, and laboratory methods adapted for battlefield use[127].

Detection of chemical agents can serve multiple purposes. One is to provide warning of a chemical attack, allowing additional time to react to potential exposure. Another is to identify the chemical agent used in an attack. This might provide for better treatment and more effective

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[126] Same as above

[127] Robert J. Einhorn, Assistant Secretary of State for Nonproliferation, Department of State, before the Senate Committee on Foreign Relations, Subcommittee on Near Eastern and South Asian Affairs, and Subcommittee on European Affairs,

response. Finally, determining when an area is clear of chemical agents after an attack requires sensitive post-event detection.

Some techniques for detecting chemical agents, such as detection paper, tickets, and tubes, rely on sampling the local environment. Detection paper is absorbent paper impregnated with special dyes. When the paper absorbs a drop of chemical agent, one of the pigments dissolves, causing the paper to change color. Detection tickets are similar to detection paper. The ticket is waved in the air or used with a hand pump to determine if chemical agents are present. Detection tubes use a similar technology, but rely on a hand pump to draw air samples through the tube, which discolors in the presence of an agent. A disadvantage to these techniques is that other substances can also dissolve these pigments, causing false positives. The pigments involved can be specific to a type of agent, so an array of papers, tickets, or tubes may be required to identify the exact agent encountered.

Handheld detectors, such as the Chemical Agent Monitor (CAM), are able to detect some chemical agents, namely mustard agents and nerve agents. Automatic sampling devices, such as the Automatic Chemical Agent Detector/Alarm (ACADA), are also employed to provide automated, constant atmospheric sampling. These devices sometimes use a technique called ion mobility spectroscopy to detect the presence of chemical agents[128].

Much of the above equipment is commercially available, and hazardous material response teams could use it to assess a chemical release. Typically, hazardous material response teams possess detection paper, tickets, or tubes, but these teams may not have standardized equipment across jurisdictions. To aid first responders in choosing the best or most appropriate system for their use, the Department of Homeland Security has provided guidelines to assess various types of detectors.

Another way of detecting a chemical terrorism event would be through the public health system. The sudden arrival of chemical casualties in local hospitals will quickly alert health care professionals. Since September 11, 2001, increases in public health networking have improved information sharing between localities.[129]

This may increase the likelihood of identifying, for example, a covert release of blister agents through identification of symptoms. Public health monitoring also may aid in forensic investigations following a covert event, especially if symptoms are delayed. Such public health monitoring may also provide opportunities to identify terrorists who may have self-inflicted chemical weapon injuries. Additionally, the Laboratory Response Network has been established,

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[128] As of 1993, at least nine methods to produce sulfur mustard were publically available. See U.S. Congress, Office of Technology Assessment, Technologies Underlying Weapons of Mass Destruction, OTA-BP-ISC-115

[129] Robert J. Einhorn, Assistant Secretary of State for Nonproliferation, Department of State, before the Senate Committee

Surveillance System to more quickly identify and respond to public health threats. For more information on which links together diagnostic laboratories for the identification of chemical agents, as well as disease outbreaks.[130] Chemical Agents as Weapons of Terror Rather Than as Weapons of Mass Destruction

In February 2012, the Director of the Defense Intelligence Agency identified that "terrorist organizations are working to acquire and employ chemical, biological, and radiological materials."[131] Many experts believe that it would be difficult for terrorist groups to use chemical agents as weapons of mass destruction. In 1993, the Office of Technology Assessment estimated that VX, the most lethal of nerve agents, spread uniformly and efficiently would require tons of material to kill 50% of the people in a 100 km2 area. [132]On the other hand, chemical agents might be effectively used as weapons of terror in situations where limited or enclosed space might decrease the required amounts of chemical. That is, the use of the weapon itself, even if casualties are few, could cause fear that would magnify the attack's effect beyond what would be expected based solely on the number of casualties.

Few examples exist of successful chemical terror attacks. In 1995, Aum Shinrikyo, a Japanese apocalyptic cult, used sarin on the Tokyo subway. The attack killed 12 people and sent more than 5,000 to the hospital with some degree of injury.[133] This same cult reportedly carried out an attack in Matsumoto as well, where 7 people were killed and over 200 injured. Both of these attacks used G-series nerve agents, which are more toxic through inhalation than by contact. V-series agents employed in a similar manner might have caused greater fatalities.[134]

In comparison, blister agents would likely be less lethal, but more injurious, if used in a similar manner. Blister agents are dermally active, so contact with the agent would cause injury.

Additionally, since mustard agent vapor penetrates most fabrics, victims near the point of release might suffer grievously. Blister agents, while not likely to cause mass destruction, might cause mass terror and injury.

Military planners no longer consider choking agents as useful military weapons, since chemical suits and masks provide high protection. However, according the Director of National Intelligence, the 2006-2007 attacks in Iraq using conventional explosives combined with chlorine gas "highlighted terrorist interest in using commercial and easily available toxic industrial chemicals as weapons." [135] As a weapon of mass destruction used against civilians,

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[130] Chemical Casualty Care Division, United States Army Medical Research Institute of Chemical Defense, Medical Management

[131] Same as above

[132] As of 1993, at least nine methods to produce sulfur mustard were publically available. See U.S. Congress, Office of Technology Assessment, Technologies Underlying Weapons of Mass Destruction, OTA-BP-ISC-115

[133] Same as above

[134] Same as above

[135] http://www.bt.cdc.gov/lrn/factsheet.asp.

comparatively low lethality of choking agents complicates their use as a weapon of mass destruction, since very large volumes would be needed.[136] On the other hand, the industrial availability of some choking agents provides opportunities for acquisition and subsequent use of potentially very large volumes of such agents. For example, the United States produces approximately 1 billion pounds of chlorine a year for use in water treatment facilities. Experts have noted the potential vulnerabilities of chlorine-filled rail tank cars, its primary transport method.[137]

Terrorist attack on industrial stores at chemical or water treatment facilities or during shipment is another potential source of concern. In order to address the concern of security at chemical facilities with large amounts of hazardous chemicals, Congress provided DHS with statutory authority to regulate these facilities for security purposes. In 2007, DHS issued regulations, called chemical facility anti-terrorism standards (CFATS), but compliance with these regulations is incomplete. The 113th Congress has held oversight hearings on CFATS and considered its reauthorization.[138]

Terrorists may find blood agents difficult to employ as weapons of mass destruction for many of the same reasons that apply to choking agents. The quick dispersal of blood agents, combined with the large amounts necessary to cause mass casualties, make such agents difficult to use on a mass scale.[139] Some industrially manufactured blood agents are used on-site without being shipped.

However, terrorist groups continue their interest in these agents, perhaps because of a belief that they may cause mass casualties

Outer space

Definitions and key issues

One of the dangers in outer space is that almost anything can be used as a weapon. It does not take more than a tiny rock (or a random piece of space debris) to destroy important satellites or other devices. The United States argues that the inability to define space weapons is the main barrier to a treaty that prevents them. One key element, however, is the distinction between the militarization and weaponization of outer space:[140]

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[136] Centers for Disease Control and Prevention, Department of Health and Human Services, "Facts About the Laboratory Response Network

[137] Testimony of Lieutenant General Ronald L. Burgess, Jr., Director, Defense Intelligence Agency, before the Senate Armed Services Committee on February 16, 2012.

[138] Same as above

[139] Same as above

[140]) http://www.stratcom.mil

Militarization of outer space: Space has been militarized since the earliest communication satellites were launched. Today, militaries all over the world rely on satellites for command and control, communication, monitoring, early warning, and navigation with the Global Positioning System. Therefore, "peaceful uses" of outer space include military uses, even those which are not at all peaceful—such as using satellites to direct bombing raids or to orchestrate a "prompt global strike" capability, which is "the ability to control any situation or defeat any adversary across the range range of military operations."[141]

Weaponization of outer space: Space weaponization is generally understood to refer to the placement in orbit of space-based devices that have a destructive capacity. Many experts argue that ground-based systems designed or used to attack space-based assets also constitute space weapons, though are not technically part of the "weaponization of outer space" since they are not placed in orbit. Some also argue that weapons that travel through space in order to reach their targets, such as hypersonic technology vehicles, also contribute to the weaponization of space. Many elements of the US ballistic "missile defense"[142] system currently being developed or planned could constitute space weapons as well, as many possess "dual-use" characteristics, Preventing an Arms Race in Outer Space (PAROS):

The overwhelming majority of UN member states are concerned that the weaponization of outer space will lead to an arms race and insist that a multilateral treaty is the only way to prevent such an arms race, emphasizing that this treaty would not limit space access, but would prevent such limitations. [143] In 2006, Russia argued that if all states observe a prohibition on space weaponization, there will be no arms race. Russia and China also support establishing an obligation of no use or threat of use of force against space objects and have submitted a draft treaty to the UN on preventing the placement of weapons in outer space.

Space weapons and missile "defence"

While as far as anyone knows there are currently no weapons deployed in space, the United States has invested in developing potential technologies, and both China and the United States have demonstrated anti-satellite capabilities in 2007 and 2008, respectively. In response to the potential threats of space weaponization, as well as perceived ballistic missile threats, the US is also developing a ballistic missile defense shield. While missile defense is presented as a defense of American and allied territories against a limited missile attack, it is in reality one more step towards full spectrum allowing them to destroy space assets as well as ballistic missiles.[144]

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[141] Same as above
92 http://www.spacecom.af.mil/us
[143] Same as above
[144]) http://www.af.mil/

have demonstrated anti-satellite capabilities in 2007 and 2008[145], respectively. In response to the potential threats of space weaponization, as well as perceived ballistic missile threats, the US is also developing a ballistic missile defense shield. While missile defense is presented as a defense of American and allied territories against a limited missile attack, it is in reality one more step towards full spectrum dominance.

Missile defence allows countries to develop offensive technologies under the pretence of defense. For example, Kinetic Energy Inteceptors are missiles that are launched into space to take out enemy missiles by smashing into them. They also have potential applications as offensive anti-satellite weapons, because the same maneovering abilities and set of controls is necessary to destroy satellites[146].

Major defense contractors are actively developing their aerospace capabilities, and smaller aerospace corporations are competing to prove their technical innovation in making satellites smaller and launch vehicles less expensive.

There are many reasons to be concerned about the development of missile defence and space weapon technology, including the increased conventional military dominance by the United States, the vast waste of resources that accompanies any arms build-up, whether it's a race or an asymmetrical surge, and the physical results of fighting in outer space - especially space debris, which will destroy civil and commercial space infrastructure such as satellites. The corporations studied in Reaching Critical Will's Dirty Dozen and the Dirty Dozen Annex are all contributing to the steady drive toward a future in which these concerns are our dirty reality.

Space debris

Besides creating an new arms race, the weaponization of space means proliferation of space debris. Such debris, resulting from 50 years of space activity, already poses a considerable hazard to spacecraft. This crowding problem could worsen as a large number of space weapons could be deployed in Low Earth Orbit (LEO). The launching and testing of weapons would also increase space debris.[147] Moreover, deploying space-based weapons in the increasingly crowded realm of LEO would leave less room for civilian systems. Those problems would also occur during periods of peace. If a number of satellites were to be destroyed during the course of a war, some scientists warn, they would create so much debris that it would prevent future satellites from being stationed in space and generally limit space access.

Effects on arms control and nuclear disarmament

The weaponization of space will destroy strategic balance and stability, undermine international and national security, and disrupt existing arms control instruments, in particular those related to

[145] Same as above
[146] Same as above
[147] http://www.spacecom.af.mil/usspace

nuclear weapons and missiles. These effects will inevitably lead to a new arms race. Space weaponization would seriously disrupt the arms control and disarmament process. The United States' withdrawal from the Anti-Ballistic Missile Treaty in 2001 and the development of US ground- and sea- based "missile defenses" have already increased tensions with Russia and have led to increased missile proliferation.The deployment of these technologies or the development of space-based technologies will likely cause Russia, as well as the United States (in response to Russia), to make smaller and smaller reductions of their nuclear arsenals and to reject the development of new treaties to regulate nuclear weapons and their delivery systems. China would likely build more warheads to maintain its nuclear deterrent, which could in turn encourage India and then Pakistan to follow suit.[148]

In January 2007, China tested an anti-satellite weapon against one of its own ageing weather satellites. The United States, while condemning the test, forged ahead with several space and missile defence projects with dual-use capabilities. In addition, in February 2008, the United States shot down own of it's own failed satellites that was carrying a half-ton of hydrazine rocket fuel (a toxic chemical). The US military shot it down with a Standard Missile-3, whose primary vocation is interceptor for the US Navy's missile defense system.

Current trends in US policy

While as far as anyone knows there are currently no weapons deployed in space, the US policy on outer space is concerning. Under the Bush administration, the 2006 US National Space Policy explained that the US will "preserve its rights, capabilities, and freedom of action in space;[149] dissuade or deter others from either impeding those rights or developing capabilities intending to do so; take those actions necessary to protect its space capabilities; respond to interference; and deny, if necessary, adversaries the use of space capabilities hostile to US national interests."

At that point, the United States rejected treaties "limiting its actions" in outer space and its space policy firmly opposed "the development of new legal regimes or other restrictions that seek to prohibit or limit US access to or use of space," and insisted that "proposed arms control agreements or restrictions must not impair the rights of the United States to conduct research, development, testing, and operations or other activities in space for US national interests."

In July 2010, the Obama administration released the new US National Space Policy. It states that the US shall pursue bilateral and multilateral transparency and confidence-building measures to encourage responsible action in, and the peaceful uses of, space. The new policy also notes that the US will consider proposals and concepts for arms control measures if they are "equitable, effectively verifiable, and enhance the national security of the US and its allies." The language in this new policy suggests that this is a significant departure from its predecessor. However, the actual implications of this change are still unknown. While claiming that it is open to considering

[148] http://www.af.mil
[149] United States Space Command Vision for 2020

space-related arms control concepts and proposals, the US argues that such proposals must meet the "'rigorous criteria' of equitability, effective verifiability, and enhance the national security interests of the US and its allies." The Russian-Chinese joint draft treaty on the Prevention of the Placement of Weapons in Outer Space (PPWT) would not meet these criteria according to the US, as it is "fundamentally flawed" and would not provide any grounds for commencing negotiations.[150]

The United States Department of Defense continues to invest in programs that could provide anti-satellite and space-based weapons capabilities. While the technology itself is highly controversial, it presents major business opportunities to companies that know how to overcome moral, logistical, and financial roadblocks. War has always been highly profitable, and dominance of outer space leads to further profits in conventional warfare.[151] As the Air Force Space Command stated in its 2003 Strategic Master Plan, "the ability to gain space superiority (the ability to exploit space while selectively disallowing it to adversaries) is critically important and maintaining space superiority is an essential prerequisite in modern warfare." Superiority in conventional warfare relies on military assets in space, especially satellites, which are used for intelligence, remote sensing, navigation, and monitoring, among other things. Since the US currently asserts its political will through force, protection of its own space assets and disturbance of others' is key to guaranteeing US dominance.

[150] Same as above

[151] Same as above

CHAPTER -3

TREATIES AND AGREEMENTS RELATED TO THE ARMS CONTROL

The role of legally binding agreements in achieving arms control objectives has been the subject of discussion in recent years. One specific aspect, the circumstances in which a state may unilaterally withdraw from its legal obligations, has become especially controversial.

A legally binding agreement under international law—a treaty—is generally seen as a robust tool for the recording of agreements between states. The conclusion, maintenance and termination of such agreements are governed by a branch of international law known as 'the law of treaties'. The performance of obligations owed under a treaty is safeguarded by the principle expressed in the Latin maxim pacta sunt servanda—agreements are to be honoured in good faith. A central element in the notion of a legally binding agreement is that its termination is subject to the application of legal rules, rather than the discretionary interests of single parties. Subjecting the termination of a treaty to legal rules and principles serves to maintain stability and predictability in international relations[152].

On 10 January 2003, North Korea revoked a 10-year 'moratorium' on its 1993 unilateral withdrawal from the multilateral 1968 Treaty on the Non-Proliferation of Nuclear Weapons (Non-Proliferation Treaty, NPT).

In 1993 it had invoked a special clause in the NPT that allows a party, in exercising its national sovereignty, to withdraw from the treaty if it decides that 'extraordinary events' have jeopardized its supreme interests. The North Korean withdrawal from the NPT in 2003 was the first instance of such a clause being invoked in relation to a modern multilateral arms control agreement. However, it was not the first instance of a state using a similar clause to renounce obligations owed under an arms control treaty. In 2002, the United States withdrew from the 1972 Treaty on the Limitation of Anti-Ballistic Missile Systems (ABM Treaty),[153] a bilateral agreement between it and the Soviet Union/Russia, by invoking a similar clause on unilateral withdrawal.

The actions taken by the North Korean and US governments are unprecedented in the modern history of international arms control and raise several fundamental and important questions in relation to the role usually attributed to legally binding agreements as a robust tool for arms control. Prima facie, a unilateral withdrawal would seem to run counter to the notion that the termination of a legally binding international agreement should not be at the discretionary interest of a single party. On the other hand, because both the USA and North Korea invoked

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[152] www.wikepedia.com

[153] Same as above

provisions that were part of the pactum in question, their actions are not contrary to the principle of pacta sunt servanda. However, it should also be emphasized that the context is markedly different in each case. The USA withdrew from the ABM Treaty because its plans for the development of a ballistic missile defence system would have violated the treaty. North Korea, however, invoked the withdrawal clause after having violated its obligations under the NPT.

What effect, if any, these two events might have on future invocations of the extraordinary events clause remains to be seen. In any event, it cannot be said that the requirement to provide an explanation served as a moderating factor in either case. None of the arguments presented by the states concerned in support of the use of the clause is persuasive.

Neither case resulted in any negative consequences for the withdrawing party. This could set a future standard and may in a sense 'lower the threshold' for the invocation of this type of withdrawal clause in order to terminate legally binding relationships. This would, in turn, run counter to efforts to obtain stability and predictability in international relations.

3.(a) The Early Years: SALT I and SALT II

The United States and Soviet Union signed their first formal agreements limiting nuclear offensive and defensive weapons in May 1972. The Strategic Arms Limitation Talks, known as SALT, produced two agreements—the Interim Agreement ... on Certain Measures with Respect to the Limitation of Strategic Offensive Arms and the Treaty ... on the Limitation of Anti-Ballistic Missile Systems. These were followed, in 1979, by the Strategic Arms Limitation Treaty, known as SALT II, which sought to codify equal limits on U.S. and Soviet strategic offensive nuclear forces.

3(b) The Interim Agreement on Offensive Arms

The Interim Agreement on Offensive Arms imposed a freeze on the number of launchers for intercontinental ballistic missiles (ICBMs) and submarine-launched ballistic missiles (SLBMs) that the United States and Soviet Union could deploy. The parties agreed that they would not begin construction of new ICBM launchers after July 1, 1972; at the time the United States had 1,054 ICBM launchers and the Soviet Union had 1,618 ICBM launchers. They also agreed to freeze their number of SLBM launchers and modern ballistic missile submarines, although they could add SLBM launchers if they retired old ICBM launchers. A protocol to the Treaty indicated that the United States could deploy up to 710 SLBM launchers on 44 submarines, and the Soviet Union could deploy up to 950 SLBM launchers on 62 submarines.

The inequality in these numbers raised serious concerns both in Congress and in the policy community in Washington. When approving the agreement, Congress adopted a provision, known as the Jackson amendment, that mandated that all future arms control agreements would have to contain equal limits for the United States and Soviet Union.

The Interim Agreement was to remain in force for five years, unless the parties replaced it with a more comprehensive agreement limiting strategic offensive weapons. In 1977, both nations agreed to observe the agreement until the completed the SALT II Treaty.

The Strategic Arms Limitation Treaty (SALT II)

The United States and Soviet Union completed the SALT II Treaty in June 1979, after seven years of negotiations. During these negotiations, the United States sought limits on quantitative and qualitative changes in Soviet forces. The U.S. negotiating position also reflected the congressional mandate for numerically equal limits on both nations' forces. As a result, the treaty limited each nation to a total of 2,400 ICBM launchers, SLBM launchers and heavy bombers, with this number declining to 2,250 by January 1, 1981. Within this total, the Treaty contained sublimits for the numbers launchers that could be deployed for ICBMs with multiple independent reentry vehicles (MIRVed ICBMs); MIRVed ICBMs and MIRVed SLBMs; and MIRVed ICBMs, MIRVed SLBMs, MIRVed air-to-surface ballistic missiles (ASBMs) and heavy bombers. The Treaty would not have limited the total number of warheads that could be carried on these delivery vehicles, which was a growing concern with the deployment of large numbers of multiple warhead missiles, but the nations did agree that they would not increase the numbers of warheads on existing types of missiles and would not test new types of ICBMs with more than 10 warheads and new types of SLBMs with more than 14 warheads. They also agreed to provisions that were designed to limit missile modernization programs, in an effort to restrain qualitative improvements in their strategic forces.

Although it contained equal limits on U.S. and Soviet forces, the SALT II Treaty still proved to be highly controversial. Some analysts argued that the Treaty would fail to curb the arms race because the limits on forces were equal to the numbers already deployed by the United States and Soviet Union; they argued for lower limits and actual reductions. Other analysts argued that the Treaty would allow the Soviet Union to maintain strategic superiority over the United States because the Soviet force of large, land-based ballistic missiles would be able to carry far greater numbers of warheads, even within the equal limits on delivery vehicles, than U.S. ballistic missiles. Some argued that, with this advantage, the Soviet Union would be able to target all U.S. land-based ICBMs in a first strike, which created a "window of vulnerability" for the United States. The Treaty's supporters argued that the Soviet advantage in large MIRVed ICBMs was more than offset by the U.S. advantage in SLBM warheads, which could not be destroyed in a first strike and could retaliate against Soviet targets, and the U.S. advantage in heavy bombers.

The continuing Soviet build-up of strategic nuclear forces, along with the taking of U.S. hostages in Iran and other challenges to the U.S. international position in the late 1970s, combined with the perceived weaknesses to the Treaty to raise questions about whether the Senate would muster the Congressional Research Service 6 votes needed to consent to the Treaty's ratification. When the Soviet Union invaded Afghanistan in December 1979, President Carter withdrew the Treaty from the Senate's consideration.

The ABM Treaty

The 1972 ABM Treaty permitted the United States and Soviet Union to deploy ABM interceptors at two sites, one centered on the nation's capital and one containing ICBM silo launchers. Each site could contain up to 100 ground-based launchers for ABM interceptor missiles, along with specified radars and sensors. The ABM Treaty also obligated each nation not to develop, test, or deploy ABM systems for the "defense of the territory of its country" and not to provide a base for such a defense. It forbade testing and deployment of space-based, sea-based, or air-based ABM systems or components and it imposed a number of qualitative limits on missile defense programs. The Treaty, however, imposed no restrictions on defenses against aircraft, cruise missiles, or theater ballistic missiles.

In a Protocol signed in 1974, each side agreed that it would deploy an ABM system at only one site, either around the nation's capital or around an ICBM deployment area. The Soviet Union deployed its site around Moscow; this system has been maintained and upgraded over the years, and remains operational today. The United States deployed its ABM system around ICBM silo launchers located near Grand Forks, ND; it operated this facility briefly in 1974 before closing it down when it proved to be not cost effective.

The ABM Treaty was the source of considerable controversy and debate for most of its history. Presidents Reagan, George H. W. Bush, and Clinton all wrestled with the conflicting goals of defending the United States against ballistic missile attack while living within the confines of the ABM Treaty. President George W. Bush resolved this conflict in 2002, when he announced that the United States would withdraw from the ABM Treaty so that it could deploy ballistic missile defenses. .

The Reagan and Bush Years: INF and START

During the election campaign of 1980, and after taking office in January 1981, President Ronald Reagan pledged to restore U.S. military capabilities, in general, and nuclear capabilities, in particular. He planned to expand U.S. nuclear forces and capabilities in an effort to counter the perceived Soviet advantages in nuclear weapons. Initially, at least, he rejected the use of arms control agreements to contain the Soviet threat. However, in 1982, after Congress and many analysts pressed for more diplomatic initiatives, the Reagan Administration outlined negotiating positions to address intermediate-range missiles, long-range strategic weapons, and ballistic missile defenses. These negotiations began to bear fruit in the latter half of President Reagan's

second term, with the signing of the Intermediate-Range Nuclear Forces Treaty in 1987. President George H. W. Bush continued to pursue the first Strategic Arms Reduction Treaty (START), with the United States and Soviet Union signing this Treaty in July 1991. The collapse of the Soviet Union later that year led to calls for deeper reductions in strategic offensive arms. As a result, the United States and Russia signed START II in January 1993, weeks before the end of the Bush Administration.

The Intermediate-Range Nuclear Forces (INF) Treaty In December 1979, NATO decided upon a "two track" approach to intermediate-range nuclear forces (INF) in Europe: it would seek negotiations with the Soviets to eliminate such systems, and at the same time schedule deployments as a spur to such negotiations. Negotiating sessions began in the fall of 1980 and continued until November 1983, when the Soviets left the talks upon deployment of the first U.S. INF systems in Europe. The negotiations resumed in January 1985.

At the negotiations, the Reagan Administration called for a "double zero" option, which would eliminate all short- as well as long-range INF systems, a position at the time viewed by most observers to be unattractive to the Soviets. Nevertheless, significant progress occurred during the

Gorbachev regime. At the Reykjavik summit in October 1986, Gorbachev agreed to include reductions of Soviet INF systems in Asia. In June 1987, the Soviets proposed a global ban on short- and long-range INF systems, which was similar to the U.S. proposal for a double zero. Gorbachev also accepted the U.S. proposal for an intrusive verification regime.

The United States and the Soviet Union signed the Treaty on Intermediate-Range Nuclear Forces (INF) on December 8, 1987. The INF Treaty was seen as a significant milestone in arms control because it established an intrusive verification regime and because it eliminated entire classes of weapons that both sides regarded as modern and effective. The United States and Soviet Union agreed to destroy all intermediate-range and shorter-range nuclear-armed ballistic missiles and ground-launched cruise missiles, which are those missiles with a range between 300 and 3,400 miles. The launchers associated with the controlled missiles were also to be destroyed. The signatories agreed that the warheads and guidance systems of the missiles need not be destroyed; they could be used or reconfigured for other systems not controlled by the Treaty.

The Soviets agreed to destroy approximately 1,750 missiles and the United States agreed to destroy 846 missiles, establishing a principle that asymmetrical reductions were acceptable in order to achieve a goal of greater stability. On the U.S. side, the principal systems destroyed were the Pershing II ballistic missile and the ground launched cruise missile (GLCM), both single warhead systems. On the Soviet side, the principal system was the SS-20 ballistic missile, which carried three warheads. These systems, on both sides, were highly mobile and able to strike such high-value targets as command-and-control centers, staging areas, airfields, depots, and ports.

The Soviets also agreed to destroy a range of older nuclear missiles, as well as the mobile, short range SS-23, a system developed and deployed in the early 1980s. The parties had eliminated all their weapons by May 1991.

The verification regime of the INF Treaty permitted on-site inspections of selected missile assembly facilities and all storage centers, deployment zones, and repair, test, and elimination facilities. Although it did not permit "anywhere, anytime" inspections, it did allow up to 20 short notice inspections of sites designated in the Treaty. The two sides agreed to an extensive data exchange, intended to account for all systems covered by the agreement. The Treaty also established a continuous portal monitoring procedure at one assembly facility in each country.

Inspections under the INF Treaty continued until May 2001, however, the United States continues to operate its site at Russia's Votkinsk Missile Assembly facility under the terms of the 1991 START Treaty.

The INF Treaty returned to the news in 2007. Russia, partly in response to U.S. plans to deploy a missile defense radar in the Czech Republic and interceptor missiles in Poland, stated that it might withdraw from the INF Treaty. Some Russian officials have claimed this would allow Russia to deploy missiles with the range needed to threaten the missile defense system, in case it Congressional Research Service 8 were capable of threatening Russia's strategic nuclear forces. Analysts outside Russia have also noted that Russia might be responding to concerns about the growing capabilities of China's missiles, or of those in other countries surrounding Russia.

In recent years, the United States has grown concerned about Russian activities that might be inconsistent with the INF Treaty. It has raised these issues with Russia, but has not received a satisfactory response. According to press reports, the United States has been monitoring the development of a new Russian ground-launched cruise missile since 2008, and concluded in late 2010 that it might be inconsistent with the treaty. The Administration plans to continue to address this issue with Russia, and has not yet made a formal declaration of Russian noncompliance with the treaty.

Ballistic Missile Defenses and the ABM Treaty

As was noted above, the 1972 Anti-Ballistic Missile (ABM) Treaty and 1974 Protocol allowed the United States and Soviet Union to deploy limited defenses against long-range ballistic missiles. The United States completed, then quickly abandoned a treaty-compliant ABM system near Grand Forks, ND, in 1974. The Soviet Union deployed, and Russia continues to operate, a treaty-compliant system around Moscow.

3.(c) The Nuclear Nonproliferation Treaty

The Nuclear Nonproliferation Treaty (NPT), which entered into force in 1970 and was extended indefinitely in 1995, is the centerpiece of the nuclear nonproliferation regime. The treaty currently has 190 States Parties. It is complemented by International Atomic Energy Agency (IAEA) safeguards, national export control laws, coordinated export control policies under the Nuclear Suppliers Group, U.N. Security Council resolutions, and ad hoc initiatives. The NPT recognizes five nations (the United States, Russia, France, Britain, and China) as nuclear weapon states—a distinction that is carried over in other parts of the regime and in national laws. Three nations that have not signed the NPT—India, Israel, and Pakistan—possess significant nuclear weapon capabilities. North Korea, which had signed the NPT but withdrew in 2003, is now thought to possess a small number of nuclear weapons. Several countries, including Argentina, Brazil, and South Africa, suspended their nuclear weapons programs and joined the NPT in the 1990s.

Others—Ukraine, Belarus, and Kazakhstan—gave up former Soviet weapons on their territories and joined the NPT as non-nuclear weapon states in the 1990s.

The Nuclear Nonproliferation Treaty is unique in its near universality—only India, Pakistan, Israel, and North Korea are now outside the treaty. In signing the NPT, non-nuclear weapon states (NNWS) pledge not to acquire nuclear weapons in exchange for a pledge by the nuclear weapon states (NWS) not to assist the development of nuclear weapons by any NNWS and to facilitate "the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy." (NPT, Article IV-2) The NWS, defined as any state that tested a nuclear explosive before 1967, also agree to "pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament." (NPT, Article VI). Many NNWS have often expressed dissatisfaction with the apparent lack of progress toward disarmament.

Nuclear proliferation often has significant regional security repercussions, but there is also a growing realization that the current constellation of proliferation risks may require further improvements to the system itself. Concern has shifted from keeping technology from the states outside the NPT to stemming potential further proliferation, either from those states outside the regime or through black markets, such as the Pakistani A.Q. Khan network. Currently, member states of the NPT are grappling with ways to strengthen controls within the current system and through ad hoc complementary measured

3.(d) The International Atomic Energy Agency (IAEA)

The International Atomic Energy Agency was established in 1957 to assist nations in their peaceful nuclear programs (primarily research and nuclear power programs) and to safeguard nuclear materials from these peaceful programs to ensure that they are not diverted to nuclear weapons uses. The IAEA safeguards system relies on data collection, review, and periodic

inspections at declared facilities. The IAEA may also inspect other facilities if it suspects undeclared nuclear materials or weapons-related activities are present.

Non-nuclear weapon NPT members are required to declare and submit all nuclear materials in their possession to regular IAEA inspections to ensure that sensitive nuclear materials and technologies are not diverted from civilian to military purposes. Some states who are not parties to the NPT (India, Israel, Pakistan) are members of the IAEA and allow inspections of some, but not all, of their nuclear activities. The IAEA also provides technical assistance for peaceful applications of nuclear technology for energy, medicine, agriculture, and research

After the 1991 Persian Gulf War, IAEA inspection teams working with the U.N. Special Commission on Iraq (UNSCOM) revealed an extensive covert nuclear weapons program that had been virtually undetected by annual inspections of Baghdad's declared facilities. This knowledge inspired efforts to strengthen the IAEA's authority to conduct more intrusive inspections of a wider variety of installations, to provide the Agency with intelligence information about suspected covert nuclear activities, and to provide the Agency with the resources and political support needed to increase confidence in its safeguards system. In 1998, the IAEA adopted an "Additional Protocol" that would give the agency greater authority and access to verify nuclear declarations. The protocol enters into force for individual NPT states upon ratification. As of March 2014, 143 countries have signed an Additional Protocol and 122 have entered into force.

The Senate gave its advice and consent to the protocol on March 31, 2004 (Treaty Doc. 107-7, Senate Executive Report 108-12). On December 18, 2006, implementing legislation was passed in P.L. 109-401, as part of the Hyde Act. On December 30, 2008, the President signed the instrument of ratification for the Additional Protocol. It was deposited with the IAEA and entered into force on January 6, 2009.

The IAEA has had an expanded mission in recent years, increasingly called upon to implement nuclear security-related activities. The IAEA also faces a potential worldwide expansion in the number of nuclear power plants it will need to monitor. Congress may consider U.S. support for the IAEA in light of these challenges. The Department of Energy's National Nuclear Security Administration is studying the future of international safeguards through its Next Generation Safeguards Initiative, which includes how to better share U.S. expertise and new safeguards technologies with the IAEA.

3(e) Comprehensive Test Ban Treaty

The Comprehensive Test Ban Treaty (CTBT) would ban all nuclear explosions. It opened for signature in 1996 but has not yet entered into force. Previous treaties have restricted nuclear testing: the 1963 Limited Test Ban Treaty barred explosions in the atmosphere, in space, and under water, and the 1974 U.S.-U.S.S.R. Threshold Test Ban Treaty and the 1976 Peaceful

Nuclear Explosions Treaty limited the explosive yield of underground nuclear explosions. In the debate on the indefinite extension of the NPT in 1995, many non-nuclear weapon states saw the early conclusion of the CTBT as a key step by the nuclear weapon states to comply with their obligations under Article VI of the NPT; critics argue that the United States has taken many steps in support of these obligations. President Clinton signed the CTBT when it opened for signature and submitted the treaty to the Senate for advice and consent in 1997. The Senate rejected the treaty by a vote of 48 for, 51 against, and 1 present, on October 13, 1999.

Parties to the treaty agree "not to carry out any nuclear weapon test explosion or any other nuclear explosion." The treaty establishes a Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) of all member states to implement the treaty. The CTBTO oversees a Conference of States Parties, an Executive Council, and a Provisional Technical Secretariat. The latter would operate an International Data Center to process and report on data from an International Monitoring System (IMS), a global network that, when completed, would consist of 321 monitoring stations and 16 laboratories. A Protocol details the monitoring system and inspection procedures. The CTBTO would come into effect if the treaty entered into force; until that time, the CTBTO Preparatory Commission conducts work to prepare for entry into force, such as building and operating the IMS.

For the treaty to enter into force, 44 specified states must ratify it. As of April 1, 2014, 183 nations had signed the CTBT and 162 had ratified. Of the 44 required nations, 36 have ratified, 3 have not signed (India, North Korea, and Pakistan) and another 5 have not ratified (China, Egypt, Iran, Israel, and the United States). States that have ratified the treaty have held conferences every two years since 1999 to discuss how to accelerate entry into force.

The CTBT remains on the calendar of the Senate Foreign Relations Committee. The Bush Administration opposed U.S. ratification of the CTBT but continued a U.S. nuclear test moratorium in effect since October 1992. In contrast, President Obama has repeatedly stated his support for the CTBT. For example, he said, "As president, I will reach out to the Senate to secure the ratification of the CTBT at the earliest practical date and will then launch a diplomatic effort to bring onboard other states whose ratifications are required for the treaty to enter into force."

Senator Hillary Clinton, as nominee for Secretary of State, previewed the Administration's approach to securing the Senate's advice and consent: "A lesson learned from [the treaty's defeat in] 1999 is that we need to ensure that the administration work intensively with Senators so they are fully briefed on key technical issues on which their CTBT votes will depend.... Substantial progress has been made in the last decade in our ability to verify a CTBT and ensure stockpile reliability." Critics respond that confidence in the nuclear stockpile requires nuclear testing, and that certain techniques would enable a determined cheater to avoid detection or attribution of its tests.

Treaty on Open Skies

On March 24, 1992, the United States, Canada, and 22 European nations signed the Treaty on Open Skies. The parties agreed to permit unarmed aircraft to conduct observation flights over their territories. Although the flights will likely focus on military activities, the information they gather was not intended to be used to verify compliance with limits in other arms control agreements. Instead, Open Skies is designed as a confidence-building measure that will promote openness and enhance mutual understanding about military activities. The treaty entered into force on January 1, 2002. It currently has 34 participating member states that have conducted more than 835 observation flights since the treaty entered into force. Open Skies was originally proposed by President Eisenhower in 1955. In the years before satellites began to collect intelligence data, aerial over flights were seen as a way to gain information needed for both intelligence and confidence-building purposes. The Soviet Union rejected President Eisenhower's proposal because it considered the over flights equal to espionage. President George H. W. Bush revived the Open Skies proposal in May 1989. By this time, both the United States and Soviet Union employed satellites and remote sensors for intelligence collection, so aircraft over flights would add little for that objective. But, at the time

when Europe was emerging from the East-West divide of the Cold War, the United States supported increased transparency throughout Europe as a way to reduce the chances of military confrontation and to build confidence among the participants. The Senate consented to the ratification of the treaty on August 6, 1993, and President Clinton signed the instruments of ratification on November 3, 1993, but entry-into-force was delayed until Russia and Belarus approved ratification in May 2001.

The Provisions of Open Skies

The parties to the Open Skies Treaty have agreed to make all of their territory accessible to overflights by unarmed fixed wing observation aircraft. They can restrict flights over areas, such as nuclear power plants, where safety is a concern, but they cannot impede or prohibit flights over any area, including military installations that are considered secret or otherwise off-limits. In most cases, the nation conducting the observation flight will provide the aircraft and sensors for the flight. However, Russia insisted that the Treaty permit the observed country to provide the aircraft if it chose to do so. Nations can also team up to conduct overflights to share the costs of the effort or use aircraft and sensor suites provided by other nations. Each nation is assigned a quota of overflights that it can conduct and must be willing to receive each year. The quota is determined, generally, by the size of the nation's territory. For the United States, this quota is equal to 42 observation flights per year.

The Treaty permits the nations to use several types of sensors—including photographic cameras, infrared cameras, and synthetic aperture radars—during their observation flights. The permitted equipment will allow the nations to collect basic information on military forces and activities, but it will provide them with little detailed technical intelligence. For example, the resolution on the sensors would allow the nations to identify vehicles and distinguish between tanks and trucks, but probably will not allow them to tell one type of tank from another. Each observation flight will produce two sets of data—one for the observing nation and one for the observed nation. Other parties to the Treaty can purchase copies of the data. Each nation is responsible for its own analysis of the data. The participants may have to revisit the agreement's list of permitted sensors in coming years, as technology has moved forward. For example, the permitted cameras use film that is no longer available, and parts that are no longer supported by most manufacturers. But some parties are uncomfortable with the idea of changing to digital imaging, as the images can be enhanced by computers. This would provide more information than is permitted with the current cameras.

The Open Skies Treaty was designed as a confidence-building measure, allowing all nations, including those without access to satellites, to collect information on military forces and activities of other parties to the Treaty. It is not designed to provide detailed intelligence information or data needed to verify compliance with arms control limits. Instead, it allows the participants to gain an improved understanding of military activities in other nations. Over flights may provide early signs of efforts to build up military forces or, conversely, assurances that an adversary or neighbor is not preparing its military for a possible conflict. In any case, it is designed to promote Congressional Research Service 4 openness and transparency as a way to ease tensions and reduce the likelihood of misunderstandings about military intentions

Hague Code of Conduct Against Ballistic Missile Proliferation (HCOC)

The Hague Code of Conduct Against Ballistic Missile Proliferation (HCOC) was inaugurated on November 25, 2002. As of February 11, 2014, 137 countries subscribed to the Code.32 The HCOC is not a treaty but instead a set of "fundamental behavioral norms and a framework for cooperation to address missile proliferation." It focuses on the possession of ballistic missiles, as a complement to the supply-side-oriented MTCR. Subscribing states have held regular conferences since the Code came into effect.

The Code intends to "prevent and curb the proliferation of Ballistic Missile systems capable of delivering weapons of mass destruction." It calls on subscribing states "to exercise maximum possible restraint in the development, testing and deployment of Ballistic Missiles capable of delivering weapons of mass destruction [WMD], including, where possible, to reduce national holdings of such missiles." Subscribing states also agree not to assist ballistic missile programs in countries suspected of developing WMD. The HCOC also calls for subscribing states to

"exercise the necessary vigilance" in assisting other countries' space-launch programs, which could serve as covers for ballistic missile programs.

Additionally, subscribing states "resolve to implement" several transparency measures, such as producing annual declarations that provide outlines of their ballistic missile policies, as well as "information on the number and generic class" of such missiles launched during the preceding year. The Code also calls on subscribing states to provide similar annual declarations regarding their "expendable Space Launch Vehicle" programs.

Furthermore, the HCOC calls on states to "exchange pre-launch notifications on their Ballistic Missile and Space Launch Vehicle launches and test flights." Signatories are required to provide such notifications to Austria, which serves as the Immediate Central Contact and Executive Secretariat for the HCOC.

3(f) Chemical Weapons Convention

The Chemical Weapons Convention (CWC) bans the development, production, transfer, stockpiling, and use of chemical and toxin weapons, mandates the destruction of all chemical weapons production facilities, and seeks to control the production and international transfer of the key chemical components of these weapons. Negotiations began in 1968, but made little progress for many years. Verification issues, in particular, stalled the talks until the Soviet Union accepted challenge inspections. In September 1992, the Conference on Disarmament's 40 member-nations agreed on the final draft for the Convention, and it opened for signature in January 1993. As of October 14, 2013, 190 nations had ratified the treaty, which entered into force April 29, 1997. Two states have signed but not ratified the Convention.Five nations have not signed the CWC. Under the Convention, states-parties provide declarations, which detail chemical weapons-related activities or materials and relevant industrial activities, to the Organization for the Prohibition of Chemical Weapons (OPCW). The OPCW inspects and monitors states-parties facilities and activities that are relevant to the convention.

The U.S. Senate held hearings and debated the CWC for more than four years before consenting to its ratification on April 24, 1997. Congress passed the CWC implementing legislation, as a part of the FY1999 Omnibus Appropriations Act (P.L. 105-277), in late October 1998. This legislation provides the statutory authority for U.S. domestic compliance with the Convention's provisions.

The legislation also provides detailed procedures to be used for on-site inspections by the OPCW, including limitations on access and search warrant procedures, should they be required.

Limits and Restrictions

Parties to the Convention have agreed to cease all offensive chemical weapons research and production and close all relevant facilities. They agreed to declare all chemical weapons

stockpiles, allow an inventory by international inspectors, and seal their stocks. They must also destroy their weapons within 10 years, unless the OPCW approves an extension. They must also destroy all chemical weapons production facilities within 10 years. In "exceptional cases of compelling need," the OPCW may approve the conversion of these facilities to peaceful purposes.

The CWC contains a complex verification regime, with different obligations applying to different types of chemical facilities. The Convention establishes three schedules of chemicals, grouped by relevance to chemical weapons production and extent of legitimate peaceful uses. Some facilities are subject to systematic on-site verification, others are subject to periodic verification inspections. Facilities for a third class of chemicals are subject to random or "ad hoc" inspections.

Signatories may also request challenge inspections at facilities suspected to be in violation of the Convention. The OPCW will carry out these inspections on short notice. Inspected nations will have the right to negotiate the extent of inspectors' access to any facility, but must make every reasonable effort to confirm compliance.

Destruction Deadlines

According to the OPCW, all of the member-states' declared chemical weapons production facilities have been inactivated and, as of December 2, 2013, almost 82% of declared chemical weapons agent stockpiles had been destroyed. This amount does not include the chemical stockpiles declared by Syria (see below).

Six countries declared possession of chemical weapons, but none destroyed their stocks by the original April 29, 2007, deadline. In July 2007, Albania became the first country to have destroyed its declared chemical weapons. South Korea became the second on July 10, 2008. India became the third on March 16, 2009. Three other states—Libya, Russia, Syria, and the United States—have declared possession of such weapons.

Libya

Libya joined the CWC in January 2004. At that time, Libya declared nearly 25 metric tonnes of bulk sulfur mustard agent, several thousand unloaded aerial munitions designed for use with chemical warfare agents, and several chemical weapons production facilities. The declared aerial munitions were destroyed in March 2004. Production facilities were destroyed or converted under OPCW supervision.

Libya had said that it would destroy its Category One weapons42 by December 31, 2010, and its Category Two weapons by December 31, 2011.43 However, Tripoli was given until May 15,

2011, to destroy all of its Category One weapons. As of October 31, 2010, Libya had destroyed approximately 4% of its Category One weapons and over 39% of its Category Two weapons.

These weapons, which included some undeclared stocks of mustard gas, remained on Libyan territory after the 2011 revolution and fall of the Muammar al Qadhafi regime. Libya's Permanent Representative to the OPCW stated March 11, 2011, that the country's "situation regarding the chemical weapons to be destroyed remains unchanged and under control."In January 2012, OPCW inspectors returned to Libya to verify the status of Libya's chemical weapons stockpiles.

In 2013, Libya completed the destruction of its stock of bulk mustard agent. Libya announced I January 2014 that it had completed destruction of the CW filled munitions it had discovered and declared in 2011 and 2012. The U.S. Department of Defense Cooperative Threat Reduction (CTR) program provided $52 million toward this effort, in collaboration with Germany. Its stocks of Category 2 (precursor) chemicals are to be destroyed by 2016.

Syria

The Obama Administration threatened military action against Syria in response to chemical weapons use in Syria in August 2013. In a diplomatic solution that resulted in the Administration withdrawing the threat, Syria agreed to join the international Chemical Weapons Convention (CWC), which requires Syria to destroy all of its chemical weapons stocks and production facilities.48 Based on a joint U.S.-Russian proposal, the Executive Council of the Organization for the Prohibition of Chemical Weapons (OPCW) approved a destruction plan under which Syria is required to destroy all chemical weapons by June 30, 2014. Under Security Council Resolution 2118, the OPCW is to report to the U.N. Security Council on implementation on a monthly basis.

A joint mission of U.N. and OPCW personnel was created to monitor and facilitate Syrian chemical weapons disarmament. OPCW-U.N. experts arrived in Damascus on October 1, 2013, and began to inspect Syria's declared chemical weapons facilities. The OPCW spokesman told reporters on October 31 that the Syrian government met the November 1, 2013, destruction deadline for disabling production equipment, and that all chemical weapons stocks and agents in Syria were under "tamper-proof" seal. The first stage of destruction activities focused on destroying "critical equipment" at chemical weapons production facilities and mixing and filling units.

The current stage of the chemical weapons destruction process involves transportation and removal of chemical weapons agents from the country. These are liquid chemicals that have not been loaded into delivery vehicles. The OPCW Executive Council on November 14, 2013, approved the destruction of Syria's chemical weapons agents ("priority 1" chemicals) outside of

Syria due to the security situation in the country. The United States and others have provided equipment to the OPCW-U.N. Joint Mission to help safely transfer these chemicals from storage facilities to the Syrian port of Latakia. Once all the chemicals are at the port, Danish and Norwegian ships are to pick up the chemicals and remove them from Syria. The first quantity of priority chemicals was moved to the port of Latakia in early January 2014.

No country had agreed to conduct destruction operations on its territory due to public concerns about the dangers of the material, but also due to the short timeline for destruction, which in some cases would not have allowed for the required environmental and health impact assessments.

Therefore, the United States plans to neutralize the liquid chemical weapons agents on board the Maritime Administration's Motor Vessel (MV) Cape Ray using newly installed field deployable hydrolysis systems (FDHS). This ship is expected to receive 700 metric tons of both mustard

Syria is believed to have more than 1,000 metric tons of chemical warfare agents and precursor chemicals. This stockpile includes several hundred metric tons of the nerve agent sarin, which represents the bulk of Syria's chemical weapons stockpile. Damascus also has several hundred metric tons of mustard agent in ready-to-use form and several metric tons of the nerve agent VX. agent and DF compound, a key component in sarin. U.S. personnel, including 64 Army chemical specialists, will run the operation. The MV Cape Ray is now at the port of Rota, Spain.

Once removed from Latakia, the most dangerous compounds in approximately 60 containers will be transferred to the Cape Ray at the Italian port of Gioia Tauro for destruction at sea in international waters. NATO has canceled cooperation with the Russian Federation on guarding the Cape Ray during chemical weapons destruction activities because of Russia's actions in Ukraine. Less sensitive chemicals will be shipped to commercial processing facilities, for example in the United Kingdom. Companies in Finland and the United States were awarded contracts for processing the liquid waste (effluent) from the destruction process.

Syria did not meet the original deadline of December 31, 2013, for removal of these agents from its territory. According to the OPCW Director General, the delays were caused by "security concerns, the procurement and delivery of large quantities of packaging and transportation materials and equipment, and adverse weather conditions."Reports in early January quoted a

Syrian government official as saying two CW storage sites have been under attack.The Syrian government also missed a February 5, 2014, deadline, raising questions about the intentions of the Syrian government. Syria has asked for a new deadline of mid-May. In February, the UN Security Council called upon Syria to expedite removal of the chemicals.

In March 2014, OPCW-UN Joint Mission Special Coordinator Sigrid Kaag described "important progress" in efforts to expedite the transfer and destruction of chemicals and encouraged the Syrian government "to sustain the current pace." As of April 8, Secretary Kerry confirmed the

March 20 Joint Mission estimate that the Syrian government had moved 11 shipments of chemicals to the port of Latakia, representing around 53.6% of total stocks to be removed.56

The Syrian government also did not meet the deadline of March 15, 2014, for destruction of its 12 chemical weapons production facilities, and has proposed that the facilities not be completely destroyed but instead made inaccessible. The CWC requires that production facilities be "physically destroyed." U.S. Ambassador to the OPCW Robert Mikulak said in a February statement that the Executive Council should require Syria to physically destroy the facilities in line with the Convention. The OPCW is now working on a destruction plan for these facilities with Syria.

Despite these delays, however, UN officials say they are optimistic that the final deadline, June 30, 2014, for destruction of all chemical weapons and production facilities will be met.

Russia

As of October 31, 2013, Russia had destroyed more than 77% of its Category One chemical weapons stocks; Moscow has destroyed its Category Two and Category Three chemical weapons stockpiles.59 The CWC Conference of States-Parties gave Russia until December 31, 2009, to destroy 45% of its Category One stockpiles and until April 29, 2012, to destroy the rest.Russia did not meet the 2012 deadline, but plans to destroy its stockpiles by December 2015.

Under DOD's Cooperative Threat Reduction Program, the United States has provided Russia with considerable financial assistance for chemical weapons destruction. The impetus for continued funding, despite reservations about this program, has been the concern that the Russian chemical weapons stockpile is a potential source of chemical weapons proliferation.

The United States

The United States has also encountered difficulties in destroying its Category One chemical weapons stockpile and did not meet its deadline for doing so. Washington has already destroyed all of its Category Three stockpile and has declared no Category Two weapons. In April 2006, the United States submitted its formal request to the OPCW Chairman and Director-General to extend the United States' final chemical weapons destruction deadline from April 2007 to April 29, 2012, the latest possible date allowed under the CWC.63 However, Ambassador Eric Javits, then-U.S. Permanent Representative to the OPCW, added that "we do not expect to be able to meet that deadline" because Washington had encountered "delays and difficulties" in destroying its stockpile. These delays have generally resulted from the need to meet state and federal environmental requirements and from both local and congressional concerns over the means of destruction.

The 2008 Defense Appropriations Act (P.L. 110-116) required the Defense Department to "complete work on the destruction" of the U.S. chemical weapons stockpile by the 2012 deadline "and in no circumstances later than December 31, 2017." Additionally, the National Defens Authorization Act for Fiscal Year 2008 (P.L. 110-181) required that the Secretary of Defense submit a report to Congress that included a description of the options and alternatives for accelerating the completion of chemical weapons destruction at each such facility, particularly in time to meet the [CWC] destruction deadline of April 29, 2012 ... and by December 31, 2017.

That report, submitted in June 2008, compared three options for accelerating stockpile destruction, noting that "[t]here are no options to achieve 100 percent destruction of the national stockpile by 2012." The three options were:

• Provide schedule incentives authorized by Congress to ensure that the operating sites complete the destruction of their stockpiles by 2012.

• Transport portions of the remaining stockpile to destruction facilities which are already operating.

• Accelerate the destruction schedule for the Colorado and Kentucky sites.

According to a 2013 Department of Defense report, the "currently planned destruction operations" are not "expected to accommodate the December 31, 2017, congressionally-mandated destruction deadline." The report adds that the department "continues to evaluate options to improve the destruction schedule without sacrificing worker and public safety and security."

As of December 2, 2013, the United States had destroyed almost 90% of its Category One stockpile. Washington projects that its two destruction facilities under construction will destroy the remaining chemical agents stockpiles located at Pueblo, CO, and Lexington, KY. According to the 2013 Defense Department report, these stockpiles are to be destroyed by November 2019 and September 2023, respectively.

Iraq

Iraq used chemical weapons during its 1980-1988 war with Iran and against Iraqi Kurds in 1988. Following the 1991 Persian Gulf War, the UN Security Council adopted Resolution 687 on April 3, 1991. This resolution was the first in a series of resolutions that required Iraq to declare its programs for nuclear, chemical, and biological weapons, as well as missiles with ranges exceeding 150 kilometers, and to destroy the weapons and related materials under UN monitoring. Regarding chemical weapons, Resolution 687 required Iraq to "unconditionally accept the destruction, removal, or rendering harmless, under international supervision of ... all chemical and biological weapons and all stocks of agents and all related subsystems and

components and all research, development, support and manufacturing facilities." The resolutions also required Baghdad to accept an ongoing UN monitoring regime to prevent Iraqi reconstitution of its prohibited weapons programs. The UN Secretary-General subsequently formed the United Nations Special Commission (UNSCOM) to verify Iraq's compliance with the resolution.

Iraq's chemical weapons generally met one of four fates: they were used during the Iran-Iraq war; they were destroyed by Iraq under UNSCOM supervision; they were secretly destroyed by Iraq outside UNSCOM supervision; or they were destroyed by coalition forces during the 1991

Persian Gulf War. Although "a number of issues relating to Iraq's chemical weapons programme remain unresolved," according to a 2006 UN report, the inspectors "were able to identify the major parameters of this programme, its scope and the results achieved." Moreover, the "vast majority" of chemical agents and munitions which Iraq possessed in 1991 were "declared by Iraq, identified by the inspectors and destroyed under international supervision," according to the report.

Iraq's legacy chemical weapons are "contained in two sealed bunkers" at an old Iraqi chemical weapons production facility, according to a July 31, 2012, British Ministry of Defense statement. These weapons were "left over after being rendered unusable by the UN inspection teams," OPCW Director-General Ambassador Ahmet Üzümcü said in a June 6, 2013 speech. Iraq acceded to the CWC in 2009 and is working with the OCPW and countries such Germany, Switzerland, and the United Kingdom to devise an appropriate disposal method for these weapons. Iraq "has recently submitted to the Secretariat the detailed facility information for the destruction of its chemical weapons," the Director-General said in December 2013.

On June 11, 2014, the Islamic State of Iraq and the Levant invaded the al-Muthanna chemical weapons facility. Due to this situation, Permanent Representative of Iraq, Mohamed Alhakim, stated in a June 30, 2014 letter to UN Secretary–General Ban Ki-moon that Iraq is currently "unable to fulfill its obligations to destroy chemical weapons" and will resume these "obligations as soon as the security situation has improved and control of the facility has been regained."

Other Compliance Issues

A State Department report covering 2012 raised some compliance questions, but did not conclude that any CWC state-party had a chemical weapons program in violation of the Convention.

3.(f) Biological Weapons Convention

In 1969, the Nixon Administration unilaterally renounced U.S. biological weapons. Offensive BW development and production ceased, and destruction of the U.S. BW stockpile began.

Simultaneously, the United States pressed the Soviet Union to follow its example. After some delay, agreement was reached, and the Biological Weapons Convention (BWC)77 was signed in 1972. The United States, after lengthy Senate consultations, ratified the Convention in 1975, the same year that the Convention entered into force.

The BWC bans the development, production, stockpiling, and transfer of biological weapons, as well as biological agents and toxins. It also bans "equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict." In addition, the Convention requires States-Parties to destroy all relevant "agents, toxins, weapons, equipment and means of delivery."

The BWC permits only defensive biological warfare research (e.g., vaccines, protective equipment) and allows production and stockpiling of BW agents only in amounts justifiable for protective or peaceful purposes. Unlike the Chemical Weapons Convention (CWC), the BWC does not specify particular biological agents, but generically defines them as "microbial or other biological agents or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic or peaceful purposes."

As of April 22, 2014, the Convention had 170 States Parties, including the United States, and there were 10 additional countries that have signed, but not ratified the Convention. The Convention does not contain any independent verification or enforcement mechanisms.78

Verification and Enforcement

The Fifth Review Conference of the BWC, which took place in November 2001, ended in disarray, with the parties unable to agree upon a final declaration. The primary deadlock was the issue of an adaptive protocol to the Convention, intended to enhance its enforcement. In July 2001, after almost seven years of negotiations, the United States declared the 200-page protocol unacceptable as basis for further negotiation. A Bush Administration review concluded that the draft protocol would not provide adequate security against covert violations, yet could endanger the security of U.S. biodefense programs and U.S. commercial proprietary information. Alone in its complete rejection of the draft protocol, the United States came under widespread international criticism, including from close allies, for "jeopardizing" the future of biological arms control. In response, the Administration put forward several proposals at the 2001 Review Conference, urging their adoption by BWC State Parties at the national level. These included

• Criminalization of BWC violations and expedited extradition procedures for violators.

• United Nations investigation of suspicious disease outbreaks or alleged BW use.

• Procedures for addressing BWC compliance concerns.

• Improved international disease control.

• Improved security over research on pathogenic organisms.

The Review Conference was unable to reach a compromise final declaration on future activities satisfactory to all State Parties, and adjourned until November 2002. The United States has continued to oppose further negotiations on verification. Confronted with the U.S. position, the chairman of the 2002 Review Conference presented a minimal program emphasizing only annual 78 Article V of the Convention does speak to the issue of compliance, stating that the States Parties "undertake to consult one another and to cooperate in solving any problems which may arise in relation to the objective of, or in the application of the provisions of, the Convention. Consultation and Cooperation pursuant to this article may also be undertaken through appropriate international procedures within the framework of the United Nations and in accordance with its Charter."

The 6th BWC Review Conference, held in December 2006, could not reach consensus on a comprehensive set of guidelines for national implementation of the Convention owing to differences between the United States and the non-aligned nations group over technology transfer control issues. The assumption of U.S. opposition also precluded consideration of enhanced verification or enforcement provisions for the Convention. The conference, however, did establish a new program of work for annual meetings, which took place before the 7th Review Conference in December 2011. The meetings included discussion and information exchanges on a variety of issues, including domestic enforcement of BWC provisions, pathogen security, and oversight of potentially dual-use research. The United States required, however, that these sessions be prohibited from reaching binding decisions. Beginning in 2007, the BWC States-Parties have met annually.

The Obama Administration has chosen not to support revival of the negotiations on a BWC verification protocol, Under Secretary for Arms Control and International Security Ellen Tauscher announced in a December 9, 2009, address to the BWC states-parties. The Administration has

"determined that a legally binding protocol would not achieve meaningful verification or greater

security," she explained, adding the ease with which a biological weapons program could be disguised within legitimate activities and the rapid advances in biological research make it very difficult to detect violations. We believe that a protocol would not be able to keep pace with the rapidly changing nature of the biological weapons threat.

Instead, Tauscher stated, the United States believes that "confidence in BWC compliance should be promoted by enhanced transparency about activities and pursuing compliance diplomacy to

address concerns." Pointing out that part of the November 2009 U.S. National Strategy for Countering Biological Threats79 is to "reinvigorate" the BWC, Tauscher exhorted the Convention's states-parties to join the United States in "increasing transparency, improving confidence building measures and engaging in more robust bilateral compliance discussions." She proposed such measures as increasing participation in the Convention's Confidence-Building Measures,80 as well as bilateral and multilateral cooperation in such areas as pathogen security and disease surveillance and response. Secretary of State Hillary Clinton reiterated U.S. opposition to a BWC "verification regime" in a December 7, 2011, address to the BWC Review Conference.

The United States identified several goals for the 2011 Review Conference, including

• promoting universality of the BWC;

• enhancing confidence in states-parties' compliance with the Convention via

transparency measures and "mechanisms for consultation and clarification";

• pursuing a "strengthened, revitalized inter sessional process";

• increasing states' capacity for "disease surveillance and response," including natural disease outbreaks; and

• enhancing efforts to strengthen national implementation and measures to counter

the threat of bioterrorism."

The 7th Review Conference was held from December 5-22, 2011. The conference participants decided to continue the inter sessional process with some changes. The annual meetings will address three standing agenda items: cooperation and assistance, review of relevant scientific and technological developments, and strengthening national implementation. In addition, during the inter sessional program, the states-parties are to discuss enabling fuller participation in BW Crelated Confidence Building Measures and strengthening implementation of Article VII of the Convention.82 The conference did not make any decisions on verification. Compliance Concerns

No nation publically acknowledges either an offensive biological weapons (BW) program or stockpile. A State Department report covering 2012 does not state that any BWC state-party violated the Convention during that time.

The Arms Trade Treaty

The Arms Trade Treaty (ATT) is a multilateral treaty of unlimited duration. Its stated objectives are to "establish the highest possible common international standards for regulating or improving the regulation of the international trade in conventional arms ..." and to "prevent and eradicate the illicit trade in conventional arms and prevent their diversion."

Though various concepts similar to the ATT have been discussed in international circles for decades, a speech by the UK Foreign Secretary backing the concept in 2004 is widely credited as giving critical momentum to the movement by adding a major conventional arms exporter to it.

Beginning in 2006, the treaty was negotiated in the UN General Assembly (UNGA) and specialized fora. A UNGA vote in early April 2013 approved the treaty in its negotiated form, with only Iran, North Korea, and Syria voting against it. Notable abstentions included Russia, a major arms exporter, and emerging powers China and India, the latter being one of the world's largest arms importers. As of April 17, 2014, China, Russia, and India had not signed the treaty.

The ATT opened for signature on June 3, 2013, and will enter into force after 50 signatories deliver their documents of ratification, acceptance, or approval to the UN Secretary-General, who is the Depository. As of April 17, 2014, the treaty had been signed by 118 states, 31 of which had ratified the treaty. The United States participated in the drafting of the ATT and voted for it in the UNGA on April 2, 2013. The United States signed the ATT on September 25, 2013, but has not 81 Statement by Ambassador Laura Kennedy, December 6, 2010; statement by Ambassador Laura Kennedy, January 20, 2011. 82 Article VII states, "Each State party ratified it. Because the United States already has strong export control laws in place, the ATT would likely require no significant changes to policy, regulations, or law.

The ATT regulates trade in conventional weapons between and among countries. It does not affect sales or trade in weapons among private citizens within a nation. The treaty obligates States Parties engaged in the international arms trade to establish national control systems to review, authorize, and document the import, export, brokerage, transit, and transshipment of conventional weapons, their parts, and ammunition. The treaty also requires that States Parties report on their treaty-specified transfers to other nations on an annual basis to the Secretariat. The scope of the weapons covered by the treaty includes the following, though States Parties may voluntarily include other conventional weapons as well:

• battle tanks,

• armored combat vehicles,

• large-caliber artillery systems,

• combat aircraft,

• attack helicopters,

• warships,

• missiles and missile launchers, and

• small arms and light weapon.

The ATT also binds States Parties to certain pre-export review processes that take into account various criteria related to possible destabilizing effects on international security, terrorism, transnational crime, human rights, and other factors in determining whether or not a transfer should be approved. A State Party is specifically prohibited from approving a transfer to another nation that violates a United Nations Security Council Resolution adopted under Chapter VII of the United Nations Charter, especially an arms embargo. Also explicitly prohibited is any transfer where a State Party "has knowledge" when reviewing the proposed transfer that the treaty specified arms, parts, or ammunition would be used in the "commission of genocide, crimes against humanity, grave breaches of the Geneva Conventions of 1949, attacks directed against civilian objects or civilians protected as such, or other war crimes as defined by international agreements to which it is a party." Parties to the treaty are obligated to take measures to prevent the illegal diversion of covered arms and ammunition, to mitigate risks of diversion occurring by cooperating with each other and exchanging information, and to "take appropriate measures" if a diversion is detected. States Parties are also encouraged to exchange relevant information about effectively addressing illicit diversion. Finally, the ATT encourages cooperation between States

Parties in the development of implementing legislation, institutional capacity building, and other pertinent areas.

After entry into force, the treaty's governing body, the Conference of States Parties, will meet within a year and then thereafter to review the implementation of the treaty with as of yet undetermined frequency. The treaty envisages a minimal Secretariat, whose cost shall be borne by the ATT's States Parties, with a role largely confined to disseminating treaty-related reporting and lists of national points of contact, facilitating and matching offers of assistance, and organizing Conferences of States Parties.

Controlling the Use of Anti-Personnel Landmines

Anti-personnel landmines (APL) are small, inexpensive weapons that kill or maim people upon contact. Abandoned, unmarked minefields can remain dangerous to both soldiers and civilians for an indefinite time. Mines were addressed in The Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed To Be Excessively Injurious or To Have Indiscriminate Effects also known as the Convention on Conventional Weapons (CCW).84 Protocol II of this contains rules for marking, registering, and removing minefields. The CCW was concluded in 1980 and entered into force in 1993. The United States

signed it in 1982 and the U.S. Senate gave its advice and consent to ratification on March 24, 1995.[154]

To Conclude a treaty would take forever

And it would probably never put into the force

Getting the real countries to sign on

Would take forever

A multilateral treaty structure is not necessary

What is needed is a common understanding

Of the items that should be controlled,

[154] The contain of this chapter is taken from the official website of the agreements and treaties

CHAPTER- 4

UNITED NATIONS CALL ON ARMS CONTROL

The subject of arms control, disarmament and proliferation is back on the international agenda with a vengeance. The list of concerns includes the issue of what happened to the weapons of mass destruction (WMD) in Iraq that were the primary stated justification for a war unauthorized by the United Nations, the proclamation of a weaponized nuclear capability by North Korea, the concerns expressed by the International Atomic Energy Agency (IAEA) about Iran's nuclear programme, press reports that other countries may be contemplating developing nuclear weapons or buying them 'off-the-shelf', and fears that the United States is lowering the threshold of normative barriers and developing a new generation of nuclear weapons that some in the current administration see as 'useable'[155].

Since the creation of the United Nations in 1945, the goal of containing the spread and enlargement of weapons and arms stockpiles has rested on three pillars—norms, treaties and coercion—each of which has been under attack in the last few years.[156]

Norms are efficient mechanisms for regulating social behaviour from the family and village to the global setting. They enable us to pursue goals, challenge assertions and justify actions.1 One of the most powerful norms since 1945 has been the taboo on the use of nuclear weapons. Norms, not deterrence, have anathematized the use of nuclear weapons as unacceptable, immoral and possibly illegal under any circumstance[157]—even for states that have assimilated them into military arsenals and integrated them into military commands and doctrines. Respect for this norm is evident in the fact that there have been many occasions since 1945 when nuclear weapons could have been used without fear of retaliation but were not, even at the price of defeat on the battlefield.

There exists a very large number of treaties and conventions regulating the use, spread and possession of armaments. The WMD trinity is regulated by the Chemical Weapons Convention (CWC), the Biological and Toxin Weapons Convention (BTWC), [158] the Nuclear Non-Proliferation Treaty (NPT, the arms control treaty with the widest adherence of all with India, Israel and Pakistan being the only countries never to have joined it), the Comprehensive Test-

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[155] Hirschfeld, Thomas J., ed. Intelligence and Arms Control: A Marriage of Convenience. Austin, Tex., 1987
106 Kelleher, Catherine M., and Joseph E. Naftzinger, eds. Intelligence in the Arms Control Process: Lessons from "INF." College Park, Md., 1990.

[157] Same as above

[158] S.k.kapoor.internationa;l law and human rights,2006

Ban Treaty (CTBT), several regional nuclear weapons- free zones (NWFZ), and a whole series of bilateral and multilateral treaties and agreements[159].

It is worth noting that Article 6 of the NPT is the only explicit nuclear disarmament commitment undertaken by all five nuclear-weapon states (NWS). There are even more agreements imposing curbs and controls on conventional weapons including, for example, the Ottawa Convention on anti-personnel landmines—which has the dual distinction of banning a class of weapons already in widespread use and being a disarmament treaty rooted in humanitarian concerns.

STRENGTHENING DISARMAMENT AND SECURITY

Although the United States, along with other major mine-producing countries like China and India, has not signed the Ottawa Convention, it is perhaps even more worrying that it has also retreated from a series of arms control and disarmament agreements, including the Anti-Ballistic Missile (ABM) Treaty and the CTBT. In doing so, the United States contributes to a worsening of the proliferation challenge. It is difficult to convince others of the futility of nuclear weapons when some demonstrate their utility by the very fact of hanging on to them and developing new doctrines for their use. Simply put, treaty setbacks contribute to a weakening of norms, which then sets in train a vicious cycle, since the heightened risk of proliferation is used to justify a further scaling back of treaty or voluntary commitments (such as no nuclear weapons testing).

A norm cannot control the behaviour of those who reject its legitimacy. India had argued for decades that the most serious breaches of the anti-nuclear norm were being committed by the five nuclear powers who simply disregarded their disarmament obligations under the NPT. The non-fulfilment of treaty obligations (specifically Article 6 of the NPT) by the NWS weakens the efficacy of the antinuclear norm in controlling the threat of proliferation. It defies history, common sense and logic to believe that a group of five countries can maintain a permanent monopoly on any class of weaponry, particularly when they have made promise after promise to nuclear disarmament.[160]

Norms and laws are alternative and, in the normal course of events, complementary mechanisms for regulating social behaviour. If both should fail, then the question arises of how to enforce compliance on the actors deviating from the socially prescribed norms and legal obligations. Within countries, there are any number of social and legal mechanisms to ensure compliance and punish outlaws, from ostracism and corporal punishment to imprisonment and capital punishment. Among countries, the universe of compliance-enforcing tools is slighter, more

[159] Same as above
[160] H.o.aggarwalpg.108,1998 publications

contentious and divisive, and usually less efficacious. Compliance is especially problematical in relation to the production, exchange and use of arms, for they are at the very heart of national security. The core of the international law enforcement system is the UN Security Council[161].

Roles played by the UN

In relation to disarmament and arms control, the United Nations plays three linked but analytically distinct roles:

• A funnel for processing ideas into norms and policies and for transmitting information from national sources to the international community;[162]

• A forum for discussion and negotiation of common international positions, policies, conventions and regimes; and[163]

• A font of international legitimacy for the authoritative promulgation of international norms, appeals for adherence to global norms and regimes, and coercive measures to enforce compliance with them[164].

THE UNITED NATIONS AS A FUNNEL

It could be argued that the United Nations has not been the chief architect of arms control and disarmament. Most of the key treaties and regimes—not just bilateral treaties signed by the Soviet The universe of compliance-enforcing tools is slighter, more contentious and divisive and usually less efficacious.

Union and the United States during the Cold War on intermediate range and strategic forces, but even multilateral regimes like the NPT, CWC, BTWC and the various regional NWFZ—were negotiated outside the UN framework, such as in the Conference on Disarmament.[165]

At one level, this is of course true. At another level, the literal truth masks a deeper underlying reality. The ideas behind many of the existing regimes were often first funnelled through the UN

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[161] discussion on brief history of BT/BW. Brucellosis, for example, was the first agent ever weaponized by the United States government for use against humans and animals. Glanders was used by Germany in WWI to poison allied horses. Ricin was used to assassinate a political leader via injection

[162] H.o aggarwal, international law and human rights, pg45,2008

[163] www.wikepedia.co

[164] Same as above

[165] www.lexis-nexis.com,article by suparna sen,dated-23/6/2010

system. Thus the idea for a total cessation of nuclear testing was proposed by India at the General Assembly in December 1954, although not put to a vote.5 In January 1957, the United States submitted a five-point plan to the General Assembly proposing an end to the production of nuclear weapons and testing. Throughout the 1980s to the mid-1990s, pressure for a comprehensive test ban was funneled through the General Assembly. Similarly, the idea of negotiating a South Pacific NWFZ was submitted to the General Assembly for endorsement in 1975 under the joint sponsorship of Fiji, New Zealand and Papua New Guinea, and the Rarotonga Treaty (1985) links the regional verification system for the South Pacific to the global IAEA inspections regime within the UN system. Indeed the closest approximation to a widely accepted definition of the NWFZ concept was contained in criteria identified in 1975 by a Group of Experts commissioned by the General Assembly[166].

The United Nations has thus historically been the funnel for processing arms control and disarmament proposals and this role continues today. The New Agenda Coalition (NAC), a group which cuts across traditional regional groupings, has used the United Nations essentially as the funnel through which to advance the twin agendas of non-proliferation and disarmament. The basic policy positions are agreed among the NAC countries (Brazil, Egypt, Ireland, Mexico, New Zealand, South Africa and Sweden), and then are taken to the international community through the structures of the United Nations[167].

THE UNITED NATIONS AS A FORUM

The United Nations is the chief expositor of international norms. The international moral code is embodied in its Charter. General Assembly resolutions are the most commonly cited and widely accepted code of conduct, litmus test of international progress and metric of state compliance with internationally prescribed behaviour. The reconciliation of divergent interests by the UN has procedural as well as representational legitimacy: it is authenticated by the procedures that have been accepted by the authorized representatives of states.

The General Assembly is the arena where contested norms can be debated and reconciled. Such a role was true historically for the General Assembly in delegitimizing colonialism, even though decolonization resulted from policy decisions taken in the national capitals of the colonial powers.[168] It was the United Nations more than any other institution or organization which proclaimed racial equality as a global norm and delegitimized apartheid as an ideology and system of government. The Organization has been at the forefront of the universalization of the

[166] Same as above
[167] www.opcw.org
[168] www.wikepedia.org

human rights norm and the internationalization of the human conscience. And it is the General Assembly that civil society actors look to and Member States go to when they wish to proclaim and reaffirm arms control and disarmament norms. This is the chief explanation why so many declarations and resolutions are first adopted in the United Nations before producing conventions and treaties—norms followed by laws—in UN as well as non-UN forums.

If the General Assembly is the Organization's normative centre of gravity, the Security Council, the only enforcement part of the Organization, is its geopolitical centre of gravity. Faced with a challenge to the norms and laws governing the acquisition, production, transfer and use of arms, the five permanent members of the Security Council (P5) may have to resort to measures of coercion ranging from diplomatic and economic to military. The non-proliferation norm became potentially enforceable in January 1992 when, in the context of the discovery of an advanced clandestine nuclear weapons programme in Iraq and threats and defiance from North Korea, the UN Security Council declared proliferation to be a threat to international peace and security[169]

With the General Assembly having little substantial power and the Security Council often deadlocked, the weight of UN decision-making frequently falls on the shoulders of the Secretary-General. He may be ignored, but he is not easily delegitimized. However, on the issue of armaments and weapons platforms involving national security, the Secretary-General is not able to issue judgments and edicts against Member States, unless perhaps they have violated specific and binding obligations.

The remaining two structures within the United Nations to tackle disarmament and security issues are the First Committee of the General Assembly and the Disarmament Commission[170].

The First Committee is charged with considering disarmament and international security. In the latter part of each year, Member States gather together to discuss resolutions put forward by one or more states. The resolutions cover the gamut of disarmament and security issues—landmines, small arms, terrorism, biological weapons, information technology security and nuclear weapons. Many resolutions are mere repeats of previous years' resolutions, but new resolutions are introduced every year and serve as a gauge of progress or lack of it, and weathervanes of current international thinking on disarmament and international security. Voting is by a simple majority. Resolutions may be adopted by acclamation, without objection or without a vote, or the vote may be recorded or taken by roll-call.

After the committee has completed its consideration of items and submitted draft resolutions, all issues are voted on through resolutions passed in plenary meetings of the General Assembly, usually towards the end of the regular General Assembly session[171].

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[169] www.wikepedia.org

The UN Disarmament Commission is the body where all Member States can come together to set the framework for disarmament. It is a deliberative body, an intersessional organ of the General Assembly, mandated to consider and make recommendations in the field of disarmament and to follow up the decisions and recommendations of the first UN Special Session on Disarmament (SSOD I) held in 1978. Unlike the First Committee, the Disarmament Commission does not pass resolutions. It focuses on a limited number of agenda items each session to allow for in-depth discussion.

There are several international bodies set within the UN framework as part of the implementation mechanism for disarmament: the IAEA (Vienna), the Organisation for the Prohibition of Chemical Weapons (OPCW, the Hague) and the Preparatory Commission of the CTBT Organization (Vienna).

Finally there is the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC) (and before that the United Nations Special Commission, UNSCOM) charged with the disarmament of the WMD in Iraq under Security Council resolutions 687, 715, 1284 and 1441 among others.[172]

In addition, although not a UN body per se, the Conference on Disarmament (CD) is serviced by the UN Secretariat and is based at the UN in Geneva. The Final Document of SSOD I described the CD as the world's 'single multilateral disarmament negotiating forum'. Its origins lie in the Ten-Nation Committee on Disarmament of 1959 (five members each from NATO and the Warsaw Pact),[173] which was subsequently expanded to include eight neutral and non-aligned countries and then further enlarged to its present strength of sixty-six, recognizing the increasing number of independent states that wished to participate in the CD. Nevertheless, its budget is included in the UN budget, its meetings are serviced by the UN, its Secretary-General is the Director-General of the UN Office in Geneva, its Deputy- Secretary-General is the head of the Geneva Branch of the UN Department for Disarmament Affairs, and it submits its annual report to the General Assembly.

However, the CD does not follow UN procedures—it has its own rules and procedures. For example, the CD operates by consensus; there is no voting procedure. In addition, the political groupings—the machinery that is in place to assist decision-making—have not changed since the end of the Cold War. There is a Western Group (which includes Japan and Israel), an Eastern Group (which includes some NATO states) [174]and the G21 (comprising countries from the Non-Aligned Movement and now including two self-declared nuclear powers, India and Pakistan).

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[171] www.lexixnexis.com,article be supriya raj vans

[174] S.k.kapoor, chapter-38,pg-25

Reaching agreement within each of these groups is often impossible. This means that the group chairpersons report to the CD presidency (which rotates alphabetically by country on a monthly basis) and state week in and week out that there is no agreement in the group, without having to expose the states that are causing/having difficulties.

The United Nations also serves as a forum for a number of processes such as the UN Programme of Action on the illicit trade in small arms and light weapons. Negotiated in July 2001, the Programme of Action has the full support of all Member States, the support of the UN and the UN family of organizations, and a large group of NGOs under the umbrella of the International Action Network on Small Arms. The Programme of Action divides its work into global, regional and national arenas and has an effective means of follow-up. The first Biennial Meeting of States to report on the implementation of the Programme of Action was held in July 2003. Of particular note at the first Biennial Meeting of States was the large number of reports made by states, NGOs and international organizations; the degree and scope of partnership between the three sectors; and the volume of work that had been carried out within two years.[175]

In addition to the UN Programme of Action, the Protocol against the Illicit Manufacturing of and Trafficking in Firearms, Their Parts and Components and Ammunition, supplementing the United Nations Convention against Transnational Organized Crime was also agreed upon in 2001.[176] This instrument covers solely commercial transactions, not state-to-state transactions and thus does not address military weapons. However, it puts in place a system of authorizations for commercial transactions and a mechanism for tracing and marking firearms. Following in its lead, the UN Programme of Action, which does deal with military weapons, will beget a negotiation on the tracing and marking of small arms and light weapons, to begin in February 2004. Plans for international instruments on the regulation of brokering and trading and on arms exports are also under discussion.

Multilateral treaties do not have to be negotiated within standing international machinery. They can just as usefully be negotiated at conferences called specifically for the purpose. Unfortunately major world summits have become increasingly discredited in recent years, becoming battlegrounds for carrying out political trench warfare by other means, occasions for finger-pointing rather than problem solving.

Better focused, practical meetings to negotiate a specific instrument often have more success.

THE UNITED NATIONS AS A FONT

[175] Same as above
[176] Same as above

Treaties, even if negotiated outside UN forums, are often submitted to the UN machinery for formal endorsement, which has no bearing on the legal standing of the treaty but does substantially enhance its moral weight. This has been true, for example, of the various regional NWFZ. India's protestations notwithstanding, probably the clearest example of the United Nations as a font of authority for global arms control treaties came with the CTBT in 1996. When India vetoed the final product in the CD in Geneva, Australia took the initiative to use a constitutional manoeuvre to move the text from the CD in Geneva to the General Assembly in New York. On 10 September 1996, the General Assembly approved the text of the CTBT by a vote of 158–3. Only Bhutan and Libya supported India in rejecting it.[177]

In September 1997, nearly 100 'like-minded' states meeting in Oslo agreed on a text of a treaty banning anti-personnel landmines; the signing ceremony was held in Ottawa in December 1997.

STRENGTHENING DISARMAMENT AND SECURITY

THE four countries most active in the Ottawa Process—Austria, Belgium, Canada and Norway—are members of the CD and indeed played an active role in taking the landmine negotiation out of the CD. The States Parties to the Ottawa Convention are careful not to organize the treaty's intersessional meetings or the Meetings of States Parties along UN lines[178]. In so doing, they are keen to establish a modus operande in which states, NGOs and international organizations can work in partnership with no barriers between them in terms of legitimacy and the right to speak. Although the treaty is integrated within the UN system through depositary functions and conference services, the States Parties set up an Implementation Support Unit that operates under the wing of the Geneva International Centre for Humanitarian Demining (an independent foundation), not within the United Nations.

Calling on the moral authority of the United Nations to ensure compliance with global norms is particularly needed when behaviour considered to be unacceptable is not in fact proscribed by any treaty to which a state may be party. In May 1998, India and Pakistan conducted nuclear tests. In doing so, they broke no treaty commitments, for neither had signed the NPT. But they violated the global anti-nuclear norm, and were roundly criticized for doing so. But the Security Council was in a peculiarly difficult position, for the simple reason that the P5 are caught in a particularly vicious conflict of interest with regard to nuclear non-proliferation, in that they are also the NPT-defined NWS. The P5 nuclear powers, who preach non-proliferation but practice deterrence, have diminished moral authority to oppose proliferation.

In these circumstances, for the Security Council to condemn the 1998 Indian and Pakistani tests—when not one of the over 2,000 previous tests had ever been so condemned by the

[177] www.wikepedia.org
[178] Same as above

Council—inflamed opinion in the subcontinent. The Security Council's presidential statement of 14 May 1998, strongly deploring India's tests, was rejected by the Indian government as 'completely unacceptable'.12 Security Council Resolution 1172 of 6 June 1998, condemning India's and Pakistan's tests and demanding that they stop, was similarly dismissed by Indian spokesmen as 'coercive and unhelpful in respect of the objectives it seeks to address.'[179]

Lessons from Iraq

The case of Iraq since the 1991 Gulf War illustrates the UN's roles as a font, a funnel and a forum. However, the case also throws into sharp relief the limits of the UN in the face of lack of agreement in the Security Council.

Despite incredible hurdles, UNSCOM and the IAEA were successful in determining the extent of the Iraqi WMD programme and in disarming Iraq even without the cooperation of the Iraqi government[180].

But, following a 1998 cruise missile attack on Iraq by the United States, damning revelations about the abuse of UNSCOM by American intelligence brought about its downfall. UNMOVIC was established as a clean slate, a new mandate inspection body for Iraq. But it was not until the 2002 showdown with the United States—backed by the threat of massive military action—that Iraq allowed Hans Blix and the UNMOVIC inspectors into the country to carry out their mandate (although months passed before Iraq began to show genuine procedural cooperation). Concerned that Saddam Hussein had failed to honour his obligations to the United Nations, the United States, backed by the United Kingdom and others, went to war in early 2003 without UN authorization.

In the case of Iraq, a few things are now clear that have important implications for the UN and disarmament. First, UNSCOM did a very good job. Despite all the cat-and-mouse games, obfuscation, subversion and evasion by Iraq, UNSCOM did find and destroy most of the WMD in possession of the

The P5 nuclear powers, who preach non-proliferation but practice deterrence, have diminished moral authority to oppose proliferation.[181]

Iraqi establishment between 1991 and 1998. Second, it appears that UN sanctions and national export controls may well have worked better than expected to prevent the purchase, acquisition and development of WMD by Iraq. Third, the painstaking analysis of all the UNSCOM data that UNMOVIC carried out in the period 1999–2002 paid off. UNMOVIC found more evidence of

[179] Article in times of india,dated 27-4-2010

[181] www.opcw.org

WMD in the few months of in-country inspections with very little useful intelligence information and very limited cooperation from the Iraqi government than the American-led Iraq Survey Group has been able to achieve since the end of the war. The Iraq Survey Group's interim report to the United States Congress in October 2003 stated that, at least so far, it had not found any substantive evidence of large-scale programmes for WMD in Iraq. The failure to find WMD since the war cannot eradicate the known historical record of Saddam Hussein's past pursuit of WMD and his will to use them against outsiders as well as Iraqis. So while the investigation continues, the success of UNSCOM and UNMOVIC still stands.

Most importantly, perhaps, the whole Iraq experience shows the enormous difficulty of enforcing compliance with international norms and commitments. Since 1998, the international community has been unable to agree on the appropriate response to one of the world's most odious regimes pursuing some of the world's most destructive weapons.

If an international pariah like Saddam Hussein cannot be confronted by a demonstration of collective will, then clearly it is simply not credible to threaten friends and allies who neither accept the validity of the norm nor can be accused of breaching treaties they have not signed. India today is being increasingly accepted back into the fold as a de facto nuclear power, which weakens the anti-nuclear norm still further. American policy has shifted de facto from universal non-proliferation based on the NPT to differentiated proliferation based on relations of the regimes in question with the United States.[182]

Countries friendly to the United States, like Israel, will be ignored; 'rogue regimes' hostile to the United States, like Iraq, will be threatened and punished.

However, such a dramatic deterioration of the security environment hardens the determination of the 'rogues' to acquire the most lethal weapons precisely in order to check armed attacks they fear (with or without good cause) will be launched by the United States. Some countries, not the least

North Korea, may have concluded that only nuclear weapons can deter the United States from preemptive military action. Thus as the United States throws off fetters on the unilateral use of force and the universal taboo on nuclear weapons, it could well strengthen the attraction of nuclear weapons for others while weakening the restraining force of global norms and treaties.

The reality of contemporary threats—a virtual nuclear-weapons capability that can exist inside non-proliferation regimes and be crossed at too short a notice for international organizations to be able to react defensively in time, and non-state actors who are outside the jurisdiction and control of multilateral agreements whose signatories are limited to states—means that significant gaps exist in the legal and institutional framework to combat them[183].

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[182] Same as above

[183] www.lexisnexis,com,articles on arms control

Reform of the international disarmament machinery

SSOD IV

Because much of the programme of action for disarmament agreed at SSOD I in 1978 remains to be achieved—such as banning the production of fissionable material for weapons purposes, phased elimination of nuclear weapons, a NWFZ in the Middle East, a convention on radiological weapons, measures to prevent an arms race in outer space, limitation and reduction of conventional arms—a comprehensive review of the disarmament programme and machinery has met with fierce resistance.

A number of states want to reformulate the disarmament agenda in the light of political developments since the end of the Cold War, whilst others fear that dearly held and hard-won ambitions could fall prey to the revisionists and the goal of nuclear disarmament could be undermined. Consequently, the proposal to hold a fourth special session of the General Assembly devoted to disarmament in order to update the disarmament programme and machinery in the UN has not, as yet, led to anything.

In 2002, a resolution on convening a fourth special session established an open-ended working group to consider the objectives, agenda and possible establishment of a fourth special session. The group reported on its work in July 2003. It had met thirteen times, prepared a working paper and reached no agreement. In the 2003 First Committee, the draft resolution on a fourth special session was withdrawn by its Non-Aligned Movement sponsors. Instead, a draft decision was adopted that took note of the report of the open-ended working group to consider the objectives and agenda, including the possible establishment of the preparatory committee, for the fourth special session. The decision requested states to continue consultations and to include the issue on the 2004 First Committee agenda.[184]

THE CD

In the CD, every treaty is hostage to the veto of any one of its sixty-six members. All negotiators are national. Most are under instructions to close all the loopholes of the adversary but keep their own open. Most are reluctant to concede anything in negotiation from a position of weakness, fearing that they will be relegated to a permanent position of inferiority. But most are also reluctant to concede any advantage from a position of strength, seeing no virtue in giving up their relative superiority. Hence the alienation of public support from the intergovernmental forums of international arms control agreements.

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[184] www.wikepedia.com

The consensus rule, originally designed to help states find agreement, is now providing a convenient cover for countries that want to block progress. Ironically, in the Ottawa Convention the possibility of an item being put to the vote leads to consensus, whereas in the CD the insistence on consensus leads to stalemate. Since the completion of the CTBT in 1996, the CD has been unable to begin negotiations on a fissile materials ban or any other issue. To many outside the inner disarmament circle it seems bizarre that at a time of international crisis, the CD cannot get down to business and deal with one of the key issues at the heart of that crisis—WMD. Apart from a few weeks in August 1998, the CD has been unable to agree even on a programme of work. This dreadful state of affairs has been due to a few countries (sometimes only one or two) thwarting the majority. In the process the CD is bringing the whole of the multilateral disarmament process into disrepute.

The CD has spent a good deal of time over the last few years considering its effective functioning.

The issues of consensus, political groupings and the role of NGOs have been discussed with little outcome. A large part of the problem is that inaction suits a numbers of countries and because consensus would be needed to change the rules and procedures of the CD, attempts to reform the working practices are effectively blocked. Of course, in the end it is political will that is required to make progress in the CD, nonetheless when such political will does not exist in all participating governments, then the rules and procedures of the CD act as a convenient shield behind which to hide. In the current debate on reforming the workings of the First Committee (described below), new proposals are also being brought forward for reforming the functioning of the CD.

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THE FIRST COMMITTEE

In October 2003, United States Assistant Secretary of State Stephen Rademaker accused the First Committee of being stuck in obsolete Cold War-era thinking that had produced ‘years of disappointing drift and growing irrelevance.’ In its 2003 session, however, there were serious attempts to address the working of the First Committee, with a number of states proposing radical overhauls. For example[185]

[185] H.o aggarwal,pg-56

Norway has suggested that the duration of the Committee should be shortened through more efficient time management such as focusing each session on key topics, that the number of resolutions and decisions could be drastically reduced and that the chair should be elected a year in advance so that better planning for the First Committee could be undertaken. The United States has suggested reforms such as rotating consideration of many of the resolutions on a biennial or triennial basis, having regional foci, limiting the number of studies that can be carried out to one per year, limiting the number of resolutions and instituting sunset provisions for actions generated by the First Committee. The European Union has suggested ways in which the time can be better managed such as limiting the speaking time in general debate, a rolling list of statements, increasing the interactivity, limiting the reporting requirements in resolutions and eliminating resolutions that do not have their main focus on the mandate of the First Committee. Sierra Leone put forward a proposed work plan and timetable with suggestions for deadlines and the amount of time spent on general debate, thematic discussions and action.

In the end a draft resolution on enhancing the contribution of the First Committee to the maintenance of international peace and security, put forward by the United States and forty other states, was adopted without a vote. The resolution requests the UN Secretary-General to seek the views of Member States and prepare a report on appropriate options for consideration at the fifty ninth session of the General Assembly.

As a follow-up to the proposals for reforming the First Committee, the Government of Norway held a small workshop in Oslo in December 2003 to discuss the possibilities. Reform was discussed, not for its own sake but in the context of a means to strengthen global security. A number of proposals were put forward that will be discussed more widely in 2004, with a view to finding agreement on the way ahead.[186]

THE DISARMAMENT COMMISSION

The work of the Disarmament Commission has become so moribund that the 2002 session was postponed to 2003 and, despite all hopes to the contrary, the Disarmament Commission concluded its 2003 session without concrete proposals to advance either nuclear disarmament or confidence building in the field of conventional arms—thereby departing from its usual practice of completing consideration of two items in three years, with the consensus adoption of guidelines and recommendations. In the 2003 First Committee, a resolution on the Disarmament Commission was adopted without a vote.15 The resolution requested the Disarmament

[186] Same as above

Commission to continue its work and meet for a period not exceeding three weeks in 2004 on topics that have yet to be determined.

Although the Disarmament Commission went through reforms of its working practices in 1989 and again in 2000—which resulted in limiting its substantive agenda to a maximum of two issues for indepth consideration—there are calls for further reform. In the context of consultations over reforming the First Committee and the CD, options for the Disarmament Commission are concurrently being discussed.

NEW APPROACHES

Arms control and disarmament agreements are negotiated outcomes among governments, with many compromises and give-and-take over a protracted period of time. Negotiation entails difficult technical and political judgments on reciprocity, mutuality and relative balance. Negotiators tend to exaggerate their own calculus of the balance of risks, threats and vulnerabilities, while downplaying that of their opponents. Arms control negotiations can also become hostage to cross-issue linkages and domestic political battles between rival political parties, competing centres of power or bureaucratic turf battles. Often, the attainment of arms control treaties flounders on the insistence of each country on its maximum preferred goal as its minimum, irreducible position. By definition, a negotiated international treaty entails compromises and accommodation of one another's interests. Convinced of the moral rectitude of its principled position, a self-righteous country can wreck the prospect of a multilateral treaty.

The preference for and success of the Ottawa Process and the Ottawa Convention shows why the standard static model of international agreements—'years of negotiations leading to a weak final product'—needs to be replaced by a fluid and dynamic model—'a rolling process of intermediate or self-adjusting agreements that respond quickly to growing scientific understanding'16 and, one might add, public opinion. A major factor behind the international support for the Ottawa Process was mounting frustration with the limitation of the Convention on Certain Conventional Weapons (CCW) and the painfully slow rate of progress in the CD. International organizations have their roots in the desire of states to collaborate in the pursuit of common goals. The United Nations is a forum for the harmonization of national actions and the reconciliation of national interests. Deadlock and stalemate on critically urgent issues of armaments delegitimize established international machinery; they do not detract from the credibility of creative ad hoc solutions that go outside the agreed framework of negotiations.[187]

[187] www.wikepedia.com

In order to address the existing gaps in the legal and institutional framework, a group of eleven like-minded countries (Australia, France, Germany, Italy, Japan, the Netherlands, Poland, Portugal, Spain, the United States, and the United Kingdom) has launched the Proliferation Security Initiative (PSI). The premise is that the proliferation of WMD deserves to be criminalized by the civilized community of nations. The goal is to be able to interdict air, sea and land cargo linked to WMD on the basis of a set of agreed principles. It signifies a broad partnership of countries that, using their own national laws and resources, will coordinate actions to halt shipments of dangerous technologies and materiels. The group has met several times, conducted some joint exercises and has plans for several more.

Questions remain about the legal basis for searching and interdicting ships in international waters.

It runs the risk of being seen as a vigilante approach to non-proliferation by an eleven-strong posse led by a self-appointed world sheriff. Yet the very fact that the PSI has been launched and combined exercises have been held indicates a new determination to overcome an unsatisfactory state of affairs.

Moreover, the involvement of Australia and Japan alongside the United States in the Pacific, plus eight European countries, signals a welcome return to multilateralism in trying to deal with the proliferation problem. But there is a long way to go before the PSI develops into a robust counter-proliferation strategy in which there is general confidence.[188]

Over the last decade, two high-profile international commissions have reaffirmed and attempted to strengthen the international norms related to WMD. The Canberra Commission on the Elimination of Nuclear Weapons, established in 1995, argued that the case for the elimination of nuclear weapons was based on three propositions: their destructive power robs them of military utility against other

The attainment of arms control treaties flounders on the insistence of each country on its maximum preferred goal as its minimum, irreducible position

NWS and renders them politically and morally indefensible against non-NWS; it defies credulity that they can be retained in perpetuity and never used either by design or inadvertence; and their possession by some stimulates others to acquire them.17 Its conclusion has been amply vindicated. The 1999 Tokyo Forum for Nuclear Non-Proliferation and Disarmament sounded the alarm saying: ‘To deal effectively with international security problems in the twenty-first century, the Security Council reform, new normative principles, operational arrangements, financial compliance and new sources of financing are urgently needed’. The WMD Commission, due to begin in 2004 under the chairmanship of Hans Blix and the sponsorship of Sweden, will again address the serious issue of WMD in the changing international security

[188] Same as above

environment. The new WMD Commission aims to avoid the problems that its predecessors encountered by having a robust follow-up mechanism to encourage the international community to take up its recommendations[189].

The crisis of legitimacy and credibility of the global arms control and disarmament regimes is not unrecognized within the United Nations. On 23 September 2003, in his address to the General Assembly, Secretary-General Kofi Annan announced his intention to set up a high-level panel to study global security threats. In so doing, the Secretary-General said that the past year had shaken the foundations of collective security and undermined confidence in the possibility of collective responses to common problems and challenges. The sixteen-strong panel is being asked to make clear and practical recommendations for ensuring effective collective action to meet future threats to peace and security. The supplementary note on the panel's terms of reference states that 'there may be a need to review and strengthen the international regimes … such as [those related to] the proliferation of nuclear, chemical and biological weapons.'

In the past several decades, at least since the signing of the NPT in 1968, there has been great merit in relying on an integrated strategy of norms, treaties and coercion to keep the nuclear threat in check. Relying solely on coercion with little basis any longer on norms (morality) and treaties (legality) simply creates fresh problems. In order to enhance their credentials as critics and enforcers of the norm, the NWS need to move more rapidly from deterrence to disarmament.

Norms cannot successfully regulate the behaviour of those who reject the legitimacy of the existing order. Their compliance with such norms will be a function of their incapacity to break out, not of voluntary obedience. And the de facto position of nuclear might equals right is an inducement to join the club of nuclear enforcers.

Sometimes it is possible to be mesmerized by the illusion of a numerical majority in the United Nations when, in reality, decisions are based on the weight of national security calculations in the real world of power politics. The three pillars of norms, treaties and coercion are mutually reinforcing in holding up the structure of global arms control. The edifice began falling apart in 1998 because ultimately the logic of non-proliferation is inseparable from the logic of disarmament. Hence the axiom of nonproliferation: as long as any one country has them, others, including terrorist groups, will try their damnedest to get them. This, if nothing else, should convince those that have WMD to either give them before time and patience runs out—or else give up on the idea of an exclusive nuclear monopoly and any long-term prevention of proliferation.

[189] www.icj.org

United Nations General Assembly

The United Nations General Assembly (UNGA) is consensus-building body, where issues of international peace and security are collectively discussed among all UN member states. Its regular session convenes in September of each year, and after two weeks of General Debate, it breaks up into six specialized committees.[190]

The General Assembly's work on disarmament is conducted through one of its main committees, the First Committee on Disarmament and International Security. Each year in the First Committee and then again in the General Assembly as a whole, a resolution on the prevention of an arms race in outer space (PAROS) is introduced and adopted by an overwhelming majority of UN member states. In fact, every country in the world votes in favor of negotiating a treaty on PAROS—except for the US and Israel, which abstain.[191]

The PAROS resolution reaffirms the importance of the 1967 Outer Space Treaty, saying that PAROS efforts are in conformity with that Treaty. However, the resolution also notes that the current outer space legal regime "does not in and of itself guarantee the prevention of an arms race in outer space." The PAROS resolution calls for states, especially those with space capabilities, to refrain from actions contrary to the objective of PAROS and to "contribute actively" to that objective. It argues for consolidation and reinforcement of the outer space legal regime, and says the Conference on Disarmament (see below) is the place for a new treaty on PAROS to be negotiated. A PAROS treaty would complement the 1967 Outer Space Treaty, which aims to preserve space for peaceful uses, if it prevented the use of space weapons and the development of space-weapon technology and technology related to so-called "missile defense." A PAROS treaty would also prevent any nation from gaining a further military advantage in outer space and would hopefully reduce current military uses of outer space.

Other relevant UNGA work on Outer Space:

- In recent years, the General Assembly has also adopted by consensus a resolution drafted by Russia and China on transparency and confidence-building measures (TCBMs) in outer space.

[190] www.spaceworld.org

[191] www.wepedia.org

TCBMs are a good step towards enhancing trust and international cooperation among states. They facilitate management of situations which could otherwise lead to international tension. Most states acknowledge that TCBMs do not replace a legally-binding treaty on PAROS but may function as a start to a step-by-step approach on preventing the weaponization of outer space.

- In 2006 the General Assembly adopted Resolution 61/75 that calls for concrete proposals for Transparency and Confidence-Building Measures in Outer Space Activities. As an answer to this resolution the EU initiated a process on an International Code of Conduct for Outer Space Activities.

- In 2010, the General Assembly agreed to launch a Group of Governmental Experts (GGE) to explore TCBMs that could be undertaken to enhance space security.

Conference on Disarmament

PAROS has been a longstanding agenda item in the Conference on Disarmament (CD), the primary body where UN disarmament treaties are negotiated. The Conference established an "ad hoc committee" on PAROS in 1985 to examine and identify "through substantive and general consideration, issues relevant to [PAROS]." This committee lasted until 1994, though it made little progress. Annual CD reports suggested that the Western group of states, and in particular one state—presumably the United States—had been blocking the negotiation of a treaty banning weapons in space, or a treaty banning anti-satellite weapons, despite having made a proposal along these lines in 1981 that helped lead to the establishment of the ad hoc committee. The US stated openly in 1990 that it "has not identified any practical outer space arms control measures that can be dealt with in a multilateral environment."

Russia and China have, despite the CD's deadlock, continued to push for the CD to negotiate measures related to PAROS. In 2002, they submitted a joint working paper on "Possible Elements for a Future International Legal Agreement on the Prevention of the Deployment of Weapons in Outer Space, the Threat or Use of Force Against Outer Space Objects." And in 2008, Russia and China submitted a draft treaty for a ban on weapons in outer space to the CD, based on the elements outlined in their 2002 working paper. An updated draft was introduced to the CD on 10 June 2014.

UN Committee on Peaceful Uses of Outer Space (COPUOS)

Also referred to as the Outer Space Committee, COPUOS was established in 1959 by the UN General Assembly in resolution 1472 (XIV) to review international cooperation in and devise UN programmes related to the peaceful use of outer space, encourage research and dissemination of information on outer space, and consider legal issues arising from the exploration of outer space. The Committee, which has 67 member states, and its two subcommittees—the Scientific and Technical Subcommittee and the Legal Subcommittee—meet annually in Vienna and their decisions are implemented by the UN Office for Outer Space Affairs.

In June 2007, COPUOS adopted debris mitigation guidelines, which had been developed by a working group on space debris in the Scientific and Technical Subcommittee over the past few years. The guidelines include measures to be considered for mission planning, design, manufacture, and operational (launch, mission, and disposal) phases of spacecraft and launch vehicle orbital stages. Member states have pledged to implement these guidelines within their national licensing or other applicable mechanisms "to the greatest extent feasible."

The 2007 session of COPUOS also agreed on a draft resolution on the practice of states and international organizations in registering space objects to be submitted to the General Assembly, and approved a workplan for the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER).

UN General Assembly Fourth Committee on Special Political and Decolonization

The Committee has played a crucial role in advancing space cooperation and provides a unique opportunity for the exchange of information among governments on the latest developments in the use and exploration of outer space. The Fourth Committee could be a better forum to work on preventing the weaponization of space than the first committee since the framework of this committee is based on development instead of security and there are more actors using space for development purposes than for military ones. The Fourth Committee meets every year for a four or five week session following the General Assembly General Debate and is comprised of all UN member states.

International Telecommunication Union (ITU)

The ITU, headquartered in Geneva, Switzerland, is another international organization within the United Nations System where governments and the private sector coordinate global telecom networks and services. The ITU plays a vital role in the management of the radio-frequency

spectrum and satellite orbits, finite natural resources which are increasingly in demand from a large number of services such as fixed, mobile, broadcasting, amateur, space research, meteorology, global positioning systems, environmental monitoring and, last but not least, those communication services that ensure safety of life at sea and in the skies.

Prevention of an arms race in outer space

Through resolutions and discussions within the United Nations, a general agreement has developed that an arms race in outer space should be prevented. However, due to the structure of the international legal regime and to the objection of a (very) few states, a treaty has not yet been negotiated to comprehensively prevent the deployment of weapons in space or to prevent an arms race in outer space. The United States systematically argues that an arms race in outer space does not yet exist, and it is therefore unnecessary to take action on the issue. The rest of the international community agrees that, because there is not yet an arms race, now is the time to prevent weaponization of space.

Prevention of the placement of weapons in outer space (PPWT)

Some delegations, such as the United States, have argued that PAROS is not the most relevant term or treaty to pursue. Discussion in the Conference on Disarmament (CD) has recently focused instead on a treaty to prevent the placement of weapons in outer space. Changing the language from the prevention of an arms race to the prevention of the placement of weapons in outer space circumvents the US argument against PAROS. However, it does not solve questions of definitions over where outer space begins, what type of weapons should be prohibited, or if the treaty would be verifiable.

On 12 February 2008, Russia's Foreign Minister, Sergey Lavrov, addressed the Conference and presented a joint Russia-China draft Treaty on the Prevention of the Placement of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects (PPWT). This was the first draft treaty on this issue formally introduced to the CD, based on elements proposed in a working paper to the CD in June 2002 by Russia, China, Viet Nam, Indonesia, Belarus, Zimbabwe, and Syria. Minister Lavrov explained the draft treaty is designed “to eliminate existing lacunas in international space law, create conditions for further exploration and use of space, preserve costly space property, and strengthen general security and arms control.”

The Bush administration dismissed the proposal out-of-hand, characterizing the offer to make preserve space for peaceful uses “a diplomatic ploy by the two nations to gain a military advantage.” The Obama administration has continued to reject this draft treaty.

A second draft was introduced by Ambassador Borodavkin of the Russian Federation on the 10 June 2014. The new draft sees quite a lot of changes from the first version with regards to definitions and procedural parts. The US administration continues to reject the second PPWT draft treaty on the basis of an in-depth analysis outlined in CD/1998. Among other things, the analysis highlights the lack of a verification regime and provisions that would prohibit the possession, testing, and stockpiling of weapons that could be placed in outer space. The Russian Federation and China welcomed these comments and called on states to make specific proposals to improve the text.

Group of Governmental Experts (GGE)

The GGE consists of a small group of international space experts from a selection of space faring countries with the main objective to improve international cooperation and reduce the risks of misunderstanding and miscommunication in outer space activities. The final goal for the group is to deliver a consensus report that outlines conclusions and recommendations on transparency and confidence-building measures for space security and sustainability. The GGE's will build its work on previous and on-going space security initiatives, such as the previous GGE from 1991-1993, 1967 Outer Space Treaty, the EU's International Code of Conduct, the UN Committee on the Peaceful Uses of Outer Space's LTSSA Working Group, and already established bilateral TCBMs. The outcome consensus report was submitted to the 68th Session of the UN General Assembly in 2013 and consiststs of a set of voluntary TCBMs for outer space activities and recommended for states. In particularly activities on exchange of information between countries space policy and activities, risk reduction notifications and visits by experts to national space facilities. Furthermore it recommended establishing increased coordination between the Office for Disarmament Affairs, the Office for Outer Space Affairs and other appropriate UN entities.

International Code of Conduct for Outer Space Activities

In 2008, the European Union (EU) initiated a procedure to develop an International Code of Conduct for Outer Space Activities (ICoC). The code will not function as a legally binding treaty, but is intended to consist of a set of principles and guidelines agreed to on a voluntary basis amongst states. It is not intended to have any formal enforcement mechanisms.

The objective behind the ICoC is to enhance safety and security in outer space through the development and implementation of transparency and confidence-building measures.

The ICoC is based on 3 main principles:

1) All countries' inheritable right to use space for peaceful purposes;

2) Protection of security and reliability of space objects in orbit; and

3) Consideration for states' legitimate defence interests.

Once agreed upon, the EU has stated it expects the ICoC to be applicable on all outer space activities conducted by states, corporations, universities etc., and present the basic rules for both civil and security space activities. The code is intended to address both safety and sustainability of space environment as well as the stability and security in outer space.

Since it is aimed at both safety and security of outer space activities, the EU stated that existing international fora such as the Conference on Disarmament and United Nations Committee on the Peaceful Uses of Outer Space (COPUS) are not appropriate for the ICoC. By discussing the ICoC outside the CD and COPUS, it also includes UN member states which are not members of these bodies.

The EU has stated that it believes the non-legal binding and overarching nature of the ICoC's means it does not contradict any on-going discussions on for example Prevention of an Arms Race in Outer Space (PAROS).

The main goal is to "find an agreement on a text that is acceptable to all interested States and that thus brings effective security benefits in a relatively short term."

Support from the international community:

Australia, Canada and Japan have already endorsed the ICoC while others have been less positive. Countries such as Brazil, Russia, India and China have expressed disappointment about not having been sufficiently consulted in its development. Together with other space emerging countries they also raised concerns that the ICoC could be a way to limit their future capacities for further outer space activities.

India main issue with the code is that it is not legally binding, with enforcement, verification and a penalty mechanism.

The United States, the leading country in space development, endorsed the ICoC after having had a national debate where some concerns were raised that the ICoC could lead to the mistaken belief that it could constrain missile defences or anti-satellite weapons.

Other criticisms raised have been that it replicated already existing domestic policies from some of the EU member states or in bilateral and multilateral transparency and confidence building measures (TCBMs). This criticism is based on the fact that the joint ICoC can be seen as interference into the domestic policy-making of nations, who are already developing outer space policies on their own initiative

On a more positive side the Code has been praised since it can be applied to all types of outer space activities as mentioned in section 1.2, and therefore is not only a tool for environmental protection, but also includes arms control aspects. Secondly the CoC also addresses military activities in outer space directly through section 4.2, were the subscribing states refrain from any action which "intends to bring about, directly or indirectly, damage, or destruction, of outer space objects unless such action is conducted to reduce the creation of outer space debris and/or is justified by the inherent right of individual or collective self-defense in accordance with the United Nations Charter or imperative safety considerations." This means that the Code limits the testing and use of space-based and ground-based Anti-Satellites Weapons.

The open-ended consultations in Kiev in May 2013 were the first multilateral meeting held on the draft ICoC. The meeting aimed at getting different states on the same level of information and knowledge. At the end of the two days consultation the EU announced that the next step will be to re-view all the participants concern and opinions in order to incorporate as many views as possible in the Code.

The second open-ended consultations took place in Bangkok in November 2013. The Bangkok meeting focused on the actual content and wording of the proposed text, including the Preamble; Purposes, Scope and General Principles. A new revision of the draft based on the Bangkok consultations was realized on the 31 March 2014. This draft is the base for the third consultations taking place in Luxembourg on 27-28 May 2014.

The Committee on Arms Control and Disarmament Law was established by the Executive Council in 1990. Its mandate1 required a comprehensive assessment of the principles and rules of international law relevant to arms control and disarmament without, however, evaluating the effectiveness of arms control negotiations or implementation processes. Substantive guidelines2 developed under this mandate have stressed the relevance of varying national

approaches to arms control and disarmament law. As for most other ILA Committees, the mandate of this Committee, originally to be terminated in November 2001, was renewed by the Executive Council on 13th November 1999 for two years and prolonged on 2nd April 2002 for a further two years, after the Berlin Conference.

Extensive work has been accomplished within the mandate of the Committee. Five substantial Reports3 have covered major parts of arms control and disarmament law, an area very much developed by politicians, diplomats and government experts, but which deserves and requires increasing attention in academic research4. The legal aspects of arms control and disarmament constitute a new discipline of international law which could not be fully assessed and adequately put into practice, if other disciplines of law were not duly taken into account. The main activities of the Committee have been devoted to investigating the manner in which the legal method may best be utilised to achieve arms control and disarmament law goals identified by States. The Committee has been moving towards consensus positions and all five Reports have met with wide support at the respective ILA Conferences. The diligent, although necessarily limited, contributions of the Committee to global and regional developments have been widely recognised.

Essential elements of the studies and discussions promoted by the members of the Committee at various forums are available in four books published by the United Nations5. A fifth publication based on an expert workshop on small arms and light weapons held by the Committee in Geneva in May 20016 was published in 20027. A second workshop on "The Future of Arms Control Law" was organizsed together with the Justus-Liebig University of Giessen on 15th – 16th May 2003 in Berlin. The findings will be published8. The present report reflects the results of the two meetings and written contribution by its members.

Additionally, Committee Members have made significant contributions in the academic field and within the framework of their Governments and other institutions, deriving inspiration from the on-going efforts of the Committee.

Dr. Julie Dahlitz, first Chairman of the Committee, died in London on 4 December 2001. Due to her unfailing initiative and highly professional diligence, the Committee was influential in both assessing and supporting legal developments in arms control and disarmament law since its establishment in 1990. Her commitment, discipline and courage as an international lawyer has impressed and greatly influenced those who had the pleasure and privilege of closely working with her. Julie Dahlitz very distinctly contributed to understanding and advancing the process of arms control and disarmament as an important part of public international law. The following contribution is dedicated to her memory .

5. Non-proliferation of nuclear, chemical and biological weapons. After the end of the Cold War, the most problematic threats are not strategic delivery vehicles, the number of nuclear warheads or accidental nuclear war. They are instead lax controls over military nuclear weapons and materials, nuclear terrorism and the breach of proliferation obligations by non-nuclear weapon States. The background and legal perspectives have been dealt with in the Committee's Second Report (Buenos Aires, 1994). More recently, Co-operative Threat Reduction (CTR) Initiatives, which aim at safeguarding and eliminating dangerous materials and weapons at the source, if possible, and helping to contain and combat proliferation, have become core parts of the new security environment. CTR Initiatives may also reassure States whose assistance is essential and critical for combating international terrorism. Moreover, initiatives such as the G-8 Global Partnership against weapons of mass destruction, the TACIS Program of the European Union, the European Joint Action, and specific bilateral programs have been put in place in order to help the Russian Federation overcome the legacy of weapons of mass destruction deployed by the Soviet Union and improve the control of production and processing facilities. Similar initiatives have been successfully implemented in the Ukraine, Belarus and Kazakhstan. During the 1990ies, there was growing awareness that non-fissionable radioactive sources might also be used for hostile purposes. The terrorist attacks on the United States on 11 September 2001 greatly aggravated these fears and measures were taken at national, regional and international level with respect to the protection and security of these materials. For instance, the International Atomic Energy Agency IAEA established a Nuclear Security Fund, designed to reduce the threat of terrorist use of nuclear and other radioactive material. It also maintains an Illicit Trafficking Database. Member States recently revised the Code of Conduct on the Safety and Security of Radioactive Sources. At the national level, a number of countries have established regulations as well as accounting and monitoring systems for preventing the misuse of high-risk radioactive sources. The progress, however, is rather slow and many countries still lack adequate measures. The close co-operation and assistance with respect to the elimination of weapons of mass destruction from the Cold War and to combating terrorism create an environment where concepts such as mutual assured destruction, strategic containment and, to a certain extent, even nuclear arms control become less relevant. Another development with far-reaching implications in terms of arms control is the adaptation of strategic nuclear doctrines and force postures to the new strategic environment marked by concerns over proliferation of weapons of mass destruction, terrorism and asymmetric warfare. Part of these new doctrines and force structures will be the military capability to destroy dangerous installations by pre-emptive military actions, including the use of weapons of mass destruction. A significant development in this respect and clear break with the past was the US withdrawal from the ABM Treaty and its subsequent obsolescence (see below paragraph 7). It remains to be seen, whether this process of transition endangers both existing and future arms control and non-proliferation agreements on weapons of mass destruction. In any case, the demise of arms control and disarmament efforts would be contrary

to the ICJ Advisory Opinion9, which has clearly identified an obligation for nuclear weapon States to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective control. Present and future challenges with respect to nuclear (radiological) arms regulation, nuclear non-proliferation and the protection and security of nuclear materials and equipment including the question of pre-emptive military actions against illegal activities with weapons of mass destruction require progressive assessments and the development of new security strategies10. The maintenance and enforcement of the existing nuclear non-proliferation regime is also closely related to three non-parties of the Nuclear Non-Proliferation Treaty – NPT – of July 1, 1968: India, Pakistan and Israel. For the foreseeable future, these three countries are unlikely to ratify the NPT or to submit their nuclear facilities to IAEA safeguards. Since these countries have the technical know-how and capabilities which might be helpful to other countries for acquiring nuclear weapons, they represent a constant danger to the existing non-proliferation regime. This danger became obvious when clandestine nuclear programs of Iran and Libya were uncovered. It remains to be seen whether these countries will be willing to constrain themselves and to abstain from providing nuclear weapon technologies and equipment to non-nuclear weapons States.

There appears to be no State supporting interpretation (A), including North Korea itself, as evidenced by the fact that it participated in the NPT Extension Conference in 1995 as a party to the Treaty and no other party raised any question about it. Interpretation (B) is the North Korean position. Pyongyang has maintained that now that its 1993 suspension of withdrawal was lifted, the withdrawal fully took effect on the following day of the lifting. But the IAEA has challenged it by stating that the NPT contains no provision for the “suspension” of withdrawal from the Treaty. It argued that the North Korean suspension of withdrawal should be treated as a revocation of withdrawal. If so, the DPRK would have withdrawn from the NPT on April 10, 2003 – Interpretation (C) –, or it would still remain party to the NPT – Interpretation (D) –, depending on whether one considers that the second announcement meets all the requirements for the withdrawal from the NPT as stipulated in Article 10, paragraph 1. Those who support Interpretation (D) have argued that the January 2003 notification of withdrawal did not contain a statement of the extraordinary events jeopardising North Korean supreme interests and/or that not all NPT parties have received the North Korean notification, thus the requirements under Article 10, paragraph 1 have not been fulfilled. During the Second and Third Sessions of the Preparatory Committee for the 2005 NPT Review Conference held in April 2003 in Geneva and in April 2004 in New York, the status of the DPRK was deliberately not questioned and the Chairman of this meeting acted as guardian of the nameplate of the DPRK. The Chairman of the respective sessions of the Preparatory Committee made the following statement: “the Chair has

the intention, under his own responsibility, not to open a debate on this issue and to retain the nameplate of the said country temporarily in his custody."[192]

[192] The notes of the committee is taken from their official sites

CHAPTER-5

CONCLUSION AND SUGGESTIONS

We do not believe that a nuclear war should be fought and we do not

believe that a nuclear war can be won.

A.B.VAJAPYEE(FORMER P.M. OF INDIA)

Weapons are intended to protect that which we value - including morality and law. Because of their indiscriminate effect and overwhelming destructive capacity nuclear weapons can hardly be reconciled with the most basic values civilization. It is incoherent to plan for the use of nuclear weapons and even threaten to use them even if the only purpose is allegedly to prevent their use.

Such a practice is not only unstable but intrinsically violates the highest values we are seeking to protect. It is not hyperbole to say that the challenge to human civilization presented by nuclear weapons may be the consummate test of the human race's ability to survive. The very existence of nuclear weapons requires that human societies - both the most technologically efficient and affluent of societies and societies still struggling to establish their place in the world -- overcome the historical and contemporary human burden of aggressiveness and tribalism.[193]

Containing the dangers of such human dynamics is one of the purposes of law. Pursuing peace and security based on the rule of law is necessary for any just society. International humanitarian law is an existing body of law universally recognized as necessary to limit war and preserve the possibility of a just peace. That law must now be rigorously applied to nuclear weapons.

Some are satisfied that because they imagine there are uses of nuclear weapons which do not violate international humanitarian law that the law need not be applied to the main contemplated uses of nuclear weapons. This is akin to making the exception the basis for establishing a norm[194].

As this dissertion systematically demonstrates, it is only a cognitively creative exception to real world practice that can even describe an instance in which the use of a nuclear weapon would not violate international humanitarian law. Is it not time that the nations and people of the world demanded that States with nuclear weapons bring their practices into strict compliance with the law? A first step would be a public disclosure of the actual targeting, impact that use would have,

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[193] www.lexis-nexis.com

[194] H.o aggarwal.,international law and human rights,pg-40

and adjustment to eliminate all uses that violate the law. Such steps would surely invigorate the security enhancing process of moving rapidly to a nuclear weapons free world.

As long as powerful states pursue international peace and security as well as their own national interests through threatening the use of nuclear weapons, and as other less economically and politically developed states seek nuclear weapons as an "equalizer" to hold more powerful states at bay, the specter of the use of these weapons, with potentially apocalyptic results, will remain with us, threatening the survival of human civilization.

Not only is this unacceptably risky, but it is also being done in contravention of that which we are allegedly protecting, our civilized values and institutions.

World leaders are increasingly articulating aspirations to obtain the peace and security of a nuclear weapons free world. The legal basis of this pursuit is compelling and there are increasing dangers of proliferation with the spread of nuclear technology. These dynamics make this an opportune moment. We have the required tools to effectively reign in the hazard, international humanitarian law and the verification techniques, law and institutions used for nuclear arms control and for elimination of other weapons. It is time we used those tools[195].

Lawyers and citizens, States and statesmen, peoples and leaders from big countries and small, must find the wisdom to see that the use and threat of use of nuclear weapons is unlawful under long-established principles of international law and morally and humanly unacceptable. They must act accordingly, and renounce policies of possible use of the weapons, and move forward decisively on a program of action to eliminate them.

Two of the broad global strategies deployed to mitigate the disastrous effects of arms are «disarmament» and «arms control.[196]»

Among many other issues, disarmament programs tend to focus on weapons collection initiatives; weapons destruction and disposal programs; decommissioning of weapons systems; arms embargoes; and weapons moratoriums and prohibitions, with a view toward reducing the destructive and destabilizing impacts of arms on the state and society as well as the environment. Operationally, disarmament programs have also focused on the demobilization of armed groups as well as the restoration of armed combatants and vulnerable groups associated with conflicts back into society.

The later often occur in post-conflict contexts and are informed by the particular peace operation mandates emanating from specific UN Security Council Resolutions.[197]

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[195] Same as above
[196] Same as above
[197] www.opcw,org

On the other hand, arms control initiatives tend to focus on agreements designed to regulate arms levels, either by limiting their growth or by restricting how arms may be used. The focus is to mitigate an arms race by restraining arms acquisition and deployment as well as use of military capabilities. It provokes the exploration of other means for managing crises. Arms control is, therefore, approached through internationally negotiated instruments, including international treaties, agreements, and also regional and sub-regional agreements and protocols. National commitments to such sub-regional, regional, and international norms emanating from the above protocols are as important as the desired impacts that such norms and regimes are expected to make. The implication is that the extent of compliance to national arms control policy guidelines, legislation, and institutional measures by particular international regimes is relevant to the attainment of the goals of international arms control initiatives.[198]

Opportunities exist for peacebuilding initiatives to incorporate arms control measures. However, most peacebuilding mandates tend to focus on the pacification of the warring factions and also security-sector reforms. The larger question of how to deal with the huge number of small arms in circulation in civil society is often ignored by peace-support operation mandates, which constitutes a threat to the sustainability of peacebuilding activities

Trying to control NSAGs use and abuse of arms is a difficult problem because it unavoidably seems like taking sides, and national and regional governments are likely to object. Controlling SALWs of NSAGs in Africa requires a careful analysis of the sources of arms and ammunition, and of the type of NSAG. This kind of analysis will highlight entry points for control, of which some are external and some internal[199].

Intervening with external suppliers of arms and ammunition seems somewhat easier than dealing with the NSAGs directly. Among other reasons, this is because it would likely be deeply opposed by national governments.

Apart from the entry points suggested above, this paper is intended to stress the importance of donor states strengthening their policies toward physical security and stockpile management. Weak PSSM has major implications, including the threat of unplanned explosions 12 and looting. Additionally, strong PSSM practices have a positive influence on the approaches to – and the perceptions of – the dangers constituted by arms and ammunition.

Not enough has been done in the international sphere. While there have been legitimate attempts to quell the illicit transfer of arms, they have been insufficient. Previous attempts such as the Programme of Action have been voluntary, meaning the real culprits of discord and merchants of death have not been subjected to the terms. It is now time for the world to commit to a legally

[198] www.wikepedia.com
[199] Same as above

binding ATT that will foster national laws in accordance with international principles agreed to at the Arms Trade Treaty Convention in 2012[200].

A. A Legally Binding

By far, the most discussed issue in the preliminary stages of negotiations has been that the new treaty will be legally binding on the countries that ratify it, not simply politically binding as past agreements have been. From the outset, the goal has been to write a "legally binding instrument negotiated on a non-discriminatory, transparent and multilateral basis, to establish common international standards for the import, export and transfer of conventional arms." 5 The importance of a legally binding ATT with a broad, multilateral framework an clear, concise expectations cannot be overstated. These expectations and what transfers will fall within the grasp of the ATT must be made known internationally to minimize the number of illicit transfers. There must be no room to plead ignorance of the ATT

It seems like some distant past (in fact it was July of this year) when the United States tied the U.N. conference on curbing small arms into knots by insisting it was a threat to the Second Amendment. That same month, the United States turned its back on 10 years of negotiations on a protocol on compliance with the ban on biological weapons, saying the agreement would put national security and confidential business information at risk. In February, during a U.N. debate on a proposed international conference to combat terrorism, the U.S. delegate said such a conference would have no practical benefits.

Conservatives welcomed these and similar moves, including rejections of agreements on the nuclear test ban, global warming and the International Criminal Court, arguing that "parchment barriers" cannot provide real safety or advantage.

The Bush administration has now discovered multilateralism when it comes to combating terrorism, working with the U.N. Security Council to create instant global law requiring states to suppress financing of terrorist operations and deny haven to terrorists. At two upcoming conferences, it would be a historic mistake and disservice to the victims of terrorism to ignore vital issues of arms control and disarmament.

"It is hard to imagine how the tragedy of September 11 could have been worse," U.N. Secretary General Kofi Annan said during the recent debate on terrorism. "Yet the truth is that a single attack involving a nuclear or biological weapon could have killed millions. While the world was unable to prevent the September 11 attacks, there is much we can do to help prevent future terrorist acts carried out with weapons of mass destruction."

One good place to start is at the Nov. 19-26 conference in Geneva, which will review implementation of the 1972 Biological Weapons Convention. The treaty bans development an

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[200] M.p. Tandon,international law and human rights,pg46

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One good place to start is at the Nov. 19-26 conference in Geneva, which will review implementation of the 1972 Biological Weapons Convention. The treaty bans development and possession of the weapons but lacks any verification mechanisms. Most countries, including the United States, are parties. No doubt prompted in part by the anthrax incidents, the Bush administration is now proposing that governments adopt national legislation criminalizing biological weapons development with provisions for prosecution or extradition. It is also urging the United Nations to establish procedures for investigating suspicious outbreaks or allegations of biological weapons use and other treaty compliance concerns.

These are important elements of the compliance protocol the United States repudiated in July. But the Bush administration must accept the necessity of embedding these requirements in a formal international agreement rather than in easily disregarded ad hoc arrangements, and of reviving other essential elements of the protocol, including regular inspections of pharmaceutical, "biodefense" and other facilities that could be put to weapons purposes[202].

Another important forum is the Nov. 11-13 U.N. conference on the Comprehensive Test Ban Treaty. While there about a dozen countries whose ratification of the treaty is needed for it to become legally binding, U.S. approval is far and away the most important. Other approvals will come sooner or later once the United States commits, including from India and Pakistan. Following a spectacularly abbreviated and uninformed "debate" in the fall of 1999, the Senate rejected ratification. Now credible concerns are heard concerning destabilization of nuclear-armed Pakistan and efforts of the al Qaeda network to obtain nuclear explosive materials. In this context, the insanity of the United States standing in the way of a global test-ban regime — equipped with seismological and other means capable of detecting militarily significant nuclear explosions anywhere in the world — becomes all too evident.

While on record opposing ratification and not even scheduled to attend next week's conference, the administration says it will continue the U.S. moratorium on tests, and after September 11 rebuffed suggestions from the Energy Department that readiness for resumption of testing be boosted. However, the Bush administration has not even attempted to reconcile its opposition to the test-ban treaty with the U.S. promises in 1995 and 2000 to the parties to the Nuclear Nonproliferation Treaty to ratify the treaty and eliminate nuclear arsenals.

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[201] www.wikepedia.org

At the heart of issues relating to biological and nuclear weapons is the simple belief that while it is acceptable, even desirable, that a few "responsible" countries possess weapons of mass destruction, everyone else must be shackled. This is logically, morally and legally unsustainable. The United States must lead the way in stripping the veil of legitimacy from these weapons for their global control and elimination to be successful.

The arms control is an need of an hour as there is gross violence of the human rights when these arms are used and due to the effect of these weapons it is somewhere or the other is destroying the environment at the large level.

So the concern should be taken on this point at the international level moving the eye to the directions from only having an progressed arms nation to the nation of peace and eco friendly.

Abbreviations

ACL Arms Control Law
AECA Arms Export Control Act, 1967
AFDI Annuaire Français de Droit International
ASIL The American Society of International Law
ATT Draft Framework Convention on International Arms Transfers
BASIC British American Security Information Council
CAT Conventional Arms Transfers
CCW Convention on prohibition or restrictions on the use of certain conventional weapons which may be deemed to be excessively injurious or to have indiscriminate effects, 1980 (as amended 1996)
ECHR European Convention for the Protection of Human Rights and Fundamental Freedoms, 1950
ECmHR European Commission of Human Rights
ECrtHR European Court of Human Rights
EU European Union
GA United Nations General Assembly
GATT General Agreement on Tariffs and Trade, 1947
GCI-IV The Geneva Conventions of August 12, 1949
HRL Human Rights Law
HV Convention respecting the rights and duties of neutral Powers and Persons in case of war on land, 1907 HXIII Convention concerning the rights and duties of neutral Powers in naval war, 1907
IAC International armed conflict
IANSA International Action Network on Small Arms
ICCPR International Covenant on Civil and Political Rights, 1966
ICESCR International Covenant on Economic, Social and Cultural Rights, 1966
ICJ International Court of Justice
ICRC International Committee of the Red Cross
ICTY International Criminal Tribunal for the Former Yugoslavia
IHL International Humanitarian Law
ILA International Law Association
ILC International Law Commission
IRRC International Review of the Red Cross
ITAR International Traffic in Arms Regulations
LoN League of Nations
NIAC Non-international armed conflict
OSCE Organization for Security and Co-operation in Europe
PCIJ Permanent Court of International Justice
PI Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts, 1977
RDMDG Revue de Droit Militaire et de Droit de la Guerre
RGDIP Revue Général de Droit International Public
SADC Southern African Development Community

SALW	Small Arms and Light Weapons
SC	United Nations Security Council
SIPRI	Stockholm International Peace Research Institute
UK	United Kingdom
UN	United Nations
UNC	Charter of the United Nations, 1945
UNDC	United Nations Disarmament Commission
UNIDIR	United Nations Institute for Disarmament Research
US	United States of America
VCLT	Vienna Convention on the Law of Treaties, 1969
WEU	Western European Union

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