

Nuclear Weapons (a disaster for mankind)



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CHAPTER 1

Introduction

In the closing stages of the Second World War, a series of terrible bombs rained down on the Japanese homeland. City after city was attacked and civilian casualties were measured in the tens of thousands. Still, the Japanese did not surrender— any more than had the Germans, under a similar weight of bombardment, until overrun by the Allied armies. When the atomic bombs were used against two more Japanese cities, however, the shock effect on the country's rulers was decisive, even though initially the numbers of casualties were no greater than those inflicted by the conventional attacks against Tokyo and elsewhere. The real change brought about by the atomic bomb was not the scale of the destruction it could inflict, but the absolute certainty that that destruction would be inflicted and could not be avoided.

By contrast, when the thousand-bomber raids had been launched against German and Japanese cities, a whole variety of possible outcomes might have resulted. At one end of the spectrum, the mass bomber formations might have achieved their aim, destroyed their target and returned to base with very few losses. At the other end of the spectrum, the bombers might have been intercepted, attacked and diverted from their target, which thereby remained unscathed, and forced to suffer very heavy losses themselves, as happened on the infamous Nuremberg raid. (Andrew Oneil)

There was no way of knowing in advance how such encounters would work out—prior to the coming of the atomic bomb. Let us imagine that the Germans and the Japanese had known in advance that their potential victims, the democracies, would develop nuclear weapons before the end of the wars they were about to unleash. Is it likely that they would have proceeded to do so in the certain knowledge of total destruction? The theory that they would not had already been formulated before the atomic bomb was tested.

The dawning of the atomic age was thus accompanied by what seemed to be an extreme ethical paradox: peace could apparently best be maintained by the possession of, and the threat to use, weapons which could obliterate tens of thousands of people in an instant. Simply because nuclear weapons, if used, would cause hideous destruction and loss of life, it has often been argued that there is something immoral in their very possession. Yet no weapon is moral or immoral in itself. Ethics enter the equation only when one considers the motivation for possessing weapons and the uses to which they are put.

If the consequence of possessing a lethal weapon is that nobody uses lethal weapons, while the consequence of not possessing a lethal weapon is that someone else uses his lethal weapons against you, which is the more moral thing to do: to possess the weapons and avoid anyone being attacked, or to renounce them and lay yourself open to aggression? The central problem that has to be faced by those who argue that the mere possession of nuclear weapons, or the threat to use them in retaliation, is morally unacceptable is the extreme level of destructiveness that conventional warfare had reached before the atomic bomb was invented. If it is the case that possessing a a deadly weapon or being willing to threaten to use it in retaliation will avert a conflict in which millions would otherwise die, can it seriously be claimed that the more ethical policy is to renounce the weapon and let the millions meet their fate? Even if one argues that the threat to retaliate is itself immoral, is it as immoral as the failure to forestall so many preventable casualties? (Kurt Gottfried, 2006)

This is, in reality, a variation on the argument against absolute pacifism which the late Leonard Cheshire illustrated when such issues were being debated 20 years ago. He set out the scenario of a security guard who is the only person in a position to prevent a terrorist from opening fire on a queue of passengers in an airport lounge. According to most people's values, not only is it morally correct for him to shoot the armed terrorist, it would be profoundly unethical for him to decline to do so. This is without prejudice to the fact that the security guard might well be right to feel that it was a tragedy that he had to take anyone's life at all. Moral choices are, as often as not, choices between the lesser of two evils. In the case of possessing and threatening to use a horrifying weapon, or renouncing it with the result that such weapons are actually used against one's own society, only the purest pacifist can be in any doubt as to which course to follow.

1a. History of Nuclear Weapons

In 1939, Albert Einstein and Leo Szilard warned of developments in Nazi Germany and urged President Franklin D. Roosevelt to begin a research program on nuclear fission for military use. The Manhattan Project was established in 1941 to develop, produce, and test the first "atomic bombs," and J. Robert Oppenheimer was appointed director. On July 16, 1945, the first "atomic bomb" was tested at Alamogordo, NM, and on August 6 and 9 of the same year, US military aircraft dropped atomic bombs on Hiroshima and Nagasaki, Japan. These bombs, based on nuclear fission, each had an explosive power equivalent to about 20000 tons (20 kilotons) of TNT. Together, they caused the immediate deaths of approximately 200000 people and the subsequent deaths of thousands more from blast and thermal injuries, radiation sickness, and malignancies. (Andrew Oneil)

Despite opposition by Oppenheimer and other physicists, President Harry Truman ordered development work on bombs based on nuclear fusion — termed "thermonuclear weapons," "hydrogen bombs," or "H-bombs" — in 1951. The work was performed under the direction of Edward Teller, who had urged the development of a fusion weapon while working on the Manhattan Project. The first hydrogen bomb test took place in 1952 at Eniwetok Atoll in the Marshall Islands. The blast had an explosive power equivalent to 10 400000 tons (10.4 megatons) of TNT — 500 times greater than the power of each of the bombs dropped on Hiroshima and Nagasaki. In 1953, the Soviet Union, which had exploded its first fission bomb in 1949, exploded its first fusion bomb. In 1961, the Soviet Union detonated a fusion bomb with a yield equivalent to 50 megatons of TNT — over 2000 times greater than the yield of the Hiroshima and Nagasaki bombs and greater than the total destructive power of all the bombs and explosives used in World War II. The development of these weapons led to the initiation of a worldwide movement for nuclear disarmament.

After the release of information on the physical effects of thermonuclear weapons and testimony before a Congressional committee about the effects of a possible thermonuclear attack on the United States, a group of Boston physicians analyzed the medical consequences of such an attack. Their papers, published in the *New England Journal of Medicine*, led in 1962 to the formation of Physicians for Social Responsibility in the United States and in 1980 to the establishment of IPPNW, a worldwide federation of national medical organizations. IPPNW received the Nobel Prize for Peace; in 1985 in recognition of its work in easing tensions that threatened nuclear war between the United States and the Soviet Union. (Andrew Oneil)

CHAPTER 2

NUCLEAR POWER and NUCLEAR WEAPONS

The wedge depiction of the climate challenge has the merit of clarifying the potential role of nuclear power:

- Major expansion of nuclear power is not the indispensable silver bullet that its advocates claim;
- A tripling of nuclear power is just one wedge among about 15;
- Hence, nuclear power must be evaluated by an unbiased competition with the other options, but taking into account the unique risks that attend nuclear power.

Expansion of nuclear power is a serious proposition because nuclear power does not lead to the emission of greenhouse gases, or to air pollutants (sulfur and nitrogen oxides, mercury, soot). But nuclear power has very serious negatives that have no counterparts in the other options. A nuclear power plant accident or a terror attack on a plant or associated facilities can inflict massive medical and environmental damage. Disposal of spent nuclear fuel is already a vexing problem, and will become much worse if there is a large-scale expansion. And the civilian nuclear-fuel cycle carries an inherent risk of nuclear weapon proliferation.

A major expansion of nuclear power will only be accepted by the American public if it can be assured that the risk of release of radioactivity from an accident, a terror attack, or a waste depository is remote. In principle, that could be done, but the history of nuclear power in this country tells us that this will be very difficult. The proliferation danger is a major international problem, and one that is getting significantly more difficult even without any significant expansion of nuclear power. Whether nuclear power can compete economically with the other means of generating electricity is a very different matter. This question is left to the end of this paper because it raises fundamental issues that societies must resolve in deciding how much of a commitment to nuclear power they will make. (Kurt Gottfried, 2006)

2a. Accidents and Terrorism

In the last two decades the American nuclear power industry has learned how to operate its plants more reliably, and there have been fewer malfunctions that require the

Nuclear Regulatory Commission (NRC) to demand a shutdown. But serious problems persist. The most glaring example is the Davis-Besse plant in Ohio, which came to within 6 months of having a large hole bored through its head by boric acid, which could have led to a catastrophic core meltdown. This was not just a technical near-failure, but a failure by the NRC, as its own post incident review concluded. Nevertheless, after more than two years the NRC has not implemented a quarter of its "high priority lessons learned." (Kurt Gottfried, 2006)

That terrorism poses a serious threat to nuclear power plants only became widely recognized after 9/11. Not only the nuclear reactors, but the neighboring spent fuel, could wreak havoc if attacked. Since 9/11, the NRC has upped the "Design Basis Threat" (DBT) that defines the level of attack that the plant operator is responsible for; above this the government is responsible. The DBT is classified, as it should be. It is known, however, to be based on the unrealistic assumption that the risk attending an attack can be reckoned in the same way as the risk of an accident. However, in an accident, backup systems should work, whereas they would also be the target of terrorists. Moreover, testing of readiness, which was ridiculously weak before 9/11, is still too limited, and the Department of Homeland Security does not have the authority or resources to insure that operators can handle the Design Basis Threat.

If nuclear power is to play a major role in addressing the climate challenge, the NRC must undergo fundamental reforms that will make it truly independent of the industry it is supposed to regulate. Congress must provide it with the funding and political authority to strictly enforce the existing regulations pertaining to accidents. Homeland Defense and the NRC must together establish a coherent and effective security regime that can cope credibly with the threats of the post 9/11 world. (Kurt Gottfried, 2006)

2b. Waste

You may be astonished, and even angry, that we do not consider waste to be the showstopper that many believe is the case for even a small scale expansion of nuclear power in the United States. Hardened interim storage of spent fuel in dry casks is secure and economical viable for 50 years or so. Nevertheless, new plants should not be licensed until a geological depository is licensed. Large-scale expansion of nuclear power should not be considered without a technically sound and politically viable solution of the storage problem. The interim storage option provides a time window in which new storage technologies or new storage sites can be explored and developed.

2c. Proliferation

Both the fuel entering a nuclear reactor and the spent fuel pose serious proliferation risks. A nuclear chain reaction can take place in suitably configured assemblies of either of the elements uranium or plutonium. Uranium exists in nature, but plutonium does not because it decays with a half life of some 24,000 years. Both elements can be used in a controlled manner—that is in nuclear power reactors—or as an explosive—in nuclear weapons. That is why nuclear power and nuclear armaments have an inherently deep relationship. Naturally occurring uranium from uranium ore must be "enriched" before the material can be used as reactor fuel, but that same enrichment technology can, with a relatively small additional effort, produce highly enriched weapons grade uranium.

When the uranium fuel is "burned" in a reactor, a fraction of the uranium atoms are turned into atoms of the preferred weapons material, plutonium. The latter can be extracted from the spent fuel by a chemical process called "reprocessing." (The nuclear reactor was invented in the Manhattan Project for the express purpose of producing plutonium from uranium, and this plutonium was then used on the bomb that destroyed Nagasaki. The Hiroshima bomb used highly enriched uranium.) There is a serious worry that Iran will with time gain a weapon capability by acquiring the ability to enrich uranium for its large civilian nuclear reactor. The reason is that such a reactor needs a very large and steady stream of reactor grade uranium, and that a plant that can produce this "docile" stream can very quickly prepare the rather small quantity of weapons grade uranium needed for a bomb (Albright and Hinderstein, 2004).

The nuclear Non-Proliferation Treaty (NPT) suffers from a serious defect in that it allows a non-nuclear power to acquire essentially all the capabilities for manufacturing weapons material short of actually using this capability for that purpose, and to leave the treaty regime shortly before taking this last step. That was done by North Korea. Removing this defect in the NPT is very difficult politically, mainly because the nuclear powers have for decades put higher priority on satisfying their own, separate national interests than on strengthening the NPT regime. In recent years the United States has put an extra heavy burden on the NPT by adopting nuclear weapons policies that are in conflict with the spirit (though not the letter) of its obligations under the NPT, and by refusing to ratify the Nuclear Test Ban Treaty.

The United States has not carried out any reprocessing to obtain plutonium from civilian reactors for some 30 years. But North Korea did while abiding to the letter though certainly not the spirit of the NPT. Some countries that do not worry us also reprocess. In particular, Japan does, but its accounting system is such that enough plutonium for more than 10 weapons is not accounted for.

The rising concern about climate change, and the heightened interest in nuclear power, has brought with it a campaign in favor of reprocessing in the United States. The nuclear power industry is not behind this because it knows that reprocessing is not even close to being cost-effective. Other private interests, some government laboratories, and segments of the Bush administration are pushing reprocessing, however. They claim that the supply of naturally occurring uranium will eventually run out, and that it is cheaper and safer to deal with the radioactive wastes after reprocessing than with the waste from conventional uranium-fueled reactors. However, the case for reprocessing in the near term (a decade at least) cannot withstand scrutiny on technical or economic grounds.

2d. Having Nuclear Weapons (a political prestige)

Willaim Epistein points out six reasons for the acquisition of nuclear weapons which would in a way add to the political prestige of a nation. Many arsenals and warheads are envisioned as serving symbolic functions of the state like flags and airlines.

1. To maintain or to acquire great power status.
2. To be given a seat at the head tables at international forums. This would be possibly only for the larger or more developed country.
3. To enhance their prestige within their region or subgroup states.
4. To readdress a perceived inferiority in the international hierarchy. This would apply to the former colonies who, through vengeance, want to reach the power status of their former colonial masters.
5. To remove discriminatory aspects affecting their status, such as distinction between nuclear weapons states and non-nuclear weapon states.
6. To demonstrate political independence and self reliance and ability to resist political coercion from the nuclear super powers. (Willaim Epistein)

2e. The NPT

Since the detonation of the first atomic device in Japan 1945, conventional wisdom has been that the spread of nuclear weapons represents a negative development in international relations. States themselves have held strongly to this perspective (except, of course, if they have been doing the proliferating) and the "proliferation pessimist" orthodoxy continues to pervade virtually every facet of academic discussion of nuclear weapons and international politics. With very few exceptions, international relations analysts assume that any spread of nuclear weapons—irrespective of contextual or contingent factors—

represents a blow to the stability of the international system. This reflects a conviction that the greater the number of countries possessing nuclear weapons, the greater the danger of nuclear weapons being used, either intentionally or by accident. A corollary of this view is that deterrence—defined as the ability to dissuade an adversary from using force through the credible threat of unacceptable punishment—will be problematic to achieve in an international environment populated by new nuclear powers. Given their strategic “immaturity,” it is assumed that new nuclear powers will struggle to formulate doctrines and develop fail-safe technical systems to allow them to maintain crisis stability with other nuclear-armed powers. Fearing a decapitating first strike, new nuclear states will confront a “use it or lose it” dilemma and will thus be more inclined to employ nuclear force prematurely in a crisis situation. (Andrew Oneil)

An equally powerful assumption in much of the literature has been that the NPT, its associated safeguards system, and the various nonproliferation export control agreements have made the world a safer place than it would otherwise have been by making it harder for states to attain the requisite means to acquire nuclear weapons. The fact that only a handful of states have openly acquired nuclear weapons since the NPT came into effect in 1970 is cited as proof that the treaty has worked. As one author has observed, “the NPT has been a positive influence. Indeed, as is often pointed out, the rather modest number of countries who possess nuclear weapons today is a far cry from what some of the pessimistic forecasts of earlier decades suggested.” The assumed causal linkage between the existence of the NPT over the last three- and-a-half decades and the small number of new declared nuclear weapons states since 1970 is held up as a powerful tool to fend off criticism from those who would challenge the treaty’s effectiveness and that of the nonproliferation regime more broadly. Supporters of the NPT have claimed that because some commentators in the early- to mid-1960s predicted the emergence of anywhere from thirty to fifty new nuclear powers before the turn of the century, the fact that this has not transpired is a credit to the NPT and the various instruments of the nonproliferation regime.

Since the end of the Cold War, a striking point of convergence between the rhetoric of states and the writings of those in the academic community has been that existing nonproliferation mechanisms are worth preserving because they offer the best chance for achieving a secure nuclear future. Two key postulates underpin this view. The first, and the most important, is that the collapse of the NPT and the nonproliferation regime as a whole would subvert the “norm” of nuclear nonproliferation internationally. This hypothesis is predicated on accepting that “there is now a clear consensus in favor of international norms designed to reduce the nuclear threat and marginalize or reduce nuclear weapons completely.” This set of claims derive in large part from the core propositions of liberal regime theory which hold that principles, procedures, norms, or rules governing specific issue areas

in world politics exert considerable influence over time in shaping the policy preferences of individual states towards mitigating the worst effects of international anarchy. In the nuclear realm, it is argued, the norm of nonproliferation has acquired powerful currency both as a result of the NPT's near universality and its role in spurring a host of subsidiary agreements covering nuclear safeguards and nuclear export controls. (Sagan, Scott.D, 1997)

Since the NPT came into force in 1970, observers have claimed occasionally that the nonproliferation regime is facing a looming crisis. The main driver of these claims has been a belief that the core bargain underlying the NPT is unsustainable. The structural compact underpinning the treaty exists between the declared nuclear weapons states (NWS) and the remaining nonnuclear weapons states (NNWS). In return for eliciting the commitment of NNWS to refrain from acquiring nuclear weapons, the NWS committed themselves under Article VI of the NPT to undertake a process of nuclear disarmament which would, over time, open the door to concluding "a treaty on general and complete disarmament." Another pivotal bargain was that, as a quid pro quo for forswearing nuclear weapons, NNWS (particularly those in the developing world) would be able to partake in "the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy" (Article IV). Significantly, weapons-related activities such as uranium enrichment and the manufacture of plutonium were not prohibited under the treaty because these activities could be justified as critical steps towards attaining an advanced domestic nuclear industry, an objective entirely in accordance with Article IV.

2005 NPT

Between May 2 and 27, 2005, representatives from 153 states party to the most significant multilateral nuclear treaty in the world gathered in New York to undertake a regular quadrennial review of the NPT. Traditionally, NPT review conferences have sought to explore ways in which the operation of the treaty can be improved and whether there is scope for enhanced cooperation between parties on nonproliferation issues, particularly in the area of nuclear safeguards. The 2005 NPT review conference was characterized by rancor between some states, resentment from others over their perceived unfair treatment under the treaty, and barely concealed despair on the part of the treaty's strongest supporters over its very future. Not surprisingly, against this backdrop the conference ended in failure, with the conference president unable to issue a statement reflecting parties' endorsement of nonproliferation principles. Stripped of diplomatic camouflage, states belonging to a thirty-five-year-old treaty were unable to agree on the very principles to provide guidance to implement the treaty. Surveying the post conference wreckage, UN Secretary-General Kofi Annan predicted that the failure of NPT members to reach a final declaration was "bound to weaken the Treaty." (Andrew Oneil)

As the failure of the 2005 NPT review conference illustrates, the entrenched views of these two camps are irreconcilable. The United States and allies such as Australia are frustrated over the ease with which individual member states can undertake covert weapons related research and development while concurrently remaining a NNWS under the NPT, with all of the political legitimacy and relative impunity that this confers in large sections of the international community. These same countries are justified in the view that Iran has, at best, skirted the permissible legal bounds of its NPT obligations and, at worst, treated the NPT with contempt by failing to declare all of its nuclear sites to the IAEA prior to 2003, despite having had a bilateral safeguards agreement with the Agency since 1974.²² Equally, it is hard to avoid the conclusion that Washington has something of a diplomatic vendetta against Iran that can be traced to that country's 1978-79 Islamic revolution. Iran has used this argument to some effect in deflecting international criticism, while at the same time questioning Washington's unwillingness to place pressure on Israel to accede to the NPT.

CHAPTER 3

Iran and China

3a. Iran's introduction to nuclear technology

Iran launched its nuclear energy program in the late 1950s during President Eisenhower's administration, when the Cold War was in full steam. The Shah, who had been installed on his throne by a CIA-backed coup in 1953, was regarded as an ally or, to put it less elegantly, a surrogate of the West. Iran had 2000 miles of common border with the USSR and it was viewed as an important shield against communism in the region and also as armor against the rise of Arab nationalism, at the time thought to be a threat to Israel's security, just as the Islamic Republic is at present regarded as a threat to Israel. Iran also had very close and friendly ties with Israel, which further recommended the Shah to the Americans. During much of the cold war era, Israel, Iran and Saudi Arabia were the pillars of the Western powers in the Middle East, with the latter two reliable suppliers of oil to the West. Also, in the 1960s and especially in the 1970s Iran had become a major, if not the major, recipient of US arms in the region. In short, the Shah was, from the Western perspective, a deserving candidate for assistance in acquiring the technology necessary for producing nuclear energy and thus reducing its own energy needs for oil reserves. Nuclear energy, it was argued, had two advantages: it would allow Iran to export greater volumes of its oil production to the West and it would also give US and European companies the opportunity to participate and invest in the construction of nuclear reactors and the related facilities. There was, of course, the possibility that the Shah would one day use nuclear technology for purposes other than producing electricity. But that did not seem to worry the West, for there is no evidence to suggest that this question was ever raised with the Shah, or that he was required to give guarantees or commitments, verbally or formally, to limit his ambitions to producing only nuclear energy and not to make nuclear weapons later on. As will shortly be discussed, acquiring nuclear capability was in fact on the Shah's mind from early on. (Gawdat Bahgat, 2006)

The first nuclear facility was established at Teheran University in 1967, with the USA and West Germany supplying the research reactor. Iran signed the NPT a year later. Article IV of the treaty recognizes the signatory's 'inalienable right' to develop research, production and use of nuclear energy for peaceful purposes without discrimination, and to acquire equipment, materials and scientific and technological information. (The Article appears to be a major bone of contention between Iran and the West at present, for the latter demands that the former forgoes its rights under that Article.) In the early 1970s the USA encouraged Iran to expand its non-oil energy base 'because Iran needed not one but

several [emphasis added] nuclear reactors to acquire [sufficiently] the electrical capacity' for its industrial development. Not surprisingly, US companies expressed interest in participating in building those reactors.¹⁰ According to Asadollah Alam, the Minister of the Imperial Court and confidant of the Shah, the monarch intended to make nuclear weapons and, to that end, Alam says, Iran had in 1976 discussed with Gabon the purchase of uranium. The first head of the Atomic Energy Organization of Iran, Dr Akbar Etemad, is quoted as saying that the Shah's government also obtained materials from South Africa in the 1970s.¹¹ And Tony Benn, who was the British secretary of state for energy in the mid- to late 1970s, says that Dr Etemad told him that Iran intended to build a nuclear reactor with a 24-megawatt capacity by 1994, which was bigger than the program Britain itself had at that time. The Shah told the British energy minister that Iran was 'getting [nuclear technology and assistance] from the French and the Germans and might even get it from the Soviets—and why not?'. Benn says that Dr Walter Marshall of the British Atomic Energy Authority was also the Shah's adviser on nuclear policy. Even Prime Minister Jim Callaghan, Benn says, expressed the view that Britain should help the Shah with his nuclear program lest the Germans and French respond to the Shah's call for assistance.¹² Finally, in that decade the Ford administration approved the sale to Iran of eight nuclear reactors, with fuel, and then cleared the sale of lasers with known capability for uranium enrichment. No one made the argument that is now made so often, that with its vast reserves of natural gas and petroleum, Iran had no need of nuclear energy for civilian purposes.¹³ By the time of the revolution, most of the construction and installation of equipment at two nuclear reactors at Bushehr on the Persian Gulf coast were completed—at a cost of \$3 billion. It is not, therefore, unreasonable to argue that, had the Shah's regime lasted longer, Iran would by now be a member of the club of nuclear weapon states. In short, beginning in the late 1950s and right up to the Iranian revolution, the West European and US governments and companies were wooing and assisting the Shah in building his nuclear energy program, which the West was aware, but for political reasons preferred to ignore, could lead to the making of atomic bombs.

3b. The EU- Iran negotiations

The current crisis between Iran and the West began in August 2002 when the Mujahedin Khalq Organization (MKO), based in Iraq, said Iran had constructed a uranium enrichment facility at Natanz and a heavy water production plant near Arak. The construction of these undeclared facilities was not by itself a violation of the NPT safeguards agreements. The agreements stipulate that Iran must declare the existence of such facilities 180 days before introducing any nuclear material.²³ And Iran had by then not introduced such materials at the Natanz plant. However, the fact that Iran had not earlier declared, or had 'lied' about, its existence, as Western officials and commentators have put it, to the

IAEA created a political storm outside Iran. But then India, Pakistan and Israel also lied about and kept their nuclear program secret from the outside world. Two factors contributed to the heightened tensions between Iran and the West that helped put the latter's nuclear program under international spotlight. One was that, at the time the existence of the Natanz plant became known, Iran had become a part of the US 'axis of evil' and as such a target of President Bush's doctrine of 'regime change'. The other was that the USA's subsequent apparently easy and quick victory in Iraq in April 2003 bolstered the neoconservatives' argument that now that the Taliban in Afghanistan and the Saddam regime in Iraq were toppled, the USA should venture into Iran and remove the Islamic regime. This argument is pushed hard particularly by Israelis officials and pro-Israel think-tanks in the USA. For example, Israeli Defense Minister, Benjamin Ben-Eliezer, is quoted as saying, 'If you ask me, today Iran is more dangerous than [was] Iraq'. (Adam Tarock, 2006)

3c. The Chinese Nuke

China's determination to become a nuclear weapons state had been conspicuous, with or without Russian help. China officially established its own Ministry for Nuclear Industry in 1955 and took the crucial decision to develop its own atomic bomb no later than early 1956." The nuclear development schemes were also included in the Twelve- Year Science Plan, presented in September 1956 to the Eight Congress of the Chinese Communist Party (CCP).¹ Despite the withdrawal of Soviet assistance," China successfully exploded its first atomic bomb on 16 October 1964 in Lop Nor, Xinjiang Province, two days after the fall of Khrushchev. This first nuclear "device" was not technologically sophisticated; though relatively crude, it nonetheless could have possibly destroyed some urban centers or an adversary's tactical assets. The United Nations Atomic Energy Commission later estimated that this first Chinese nuclear warhead was in the order of 20 kilotons, or approximately the power of the bomb exploded over Nagasaki in August 1945.¹ On 17 June 1967, two years and eight months after the explosion of China's first atomic bomb, the Chinese successfully tested a three-megaton hydrogen bomb.* Like other nuclear weapons states, China since then has persistently improved its nuclear and strategic capabilities and has achieved a series of military breakthroughs, though in a very slow fashion. (Ta chen-Cheng, 2006)

Why did the Chinese decide to acquire nuclear weapons? What were their motives and rationale? The answers were highly relevant to the Cold War context, as strategy-makers could perhaps have reached a different decision given a different context. The ideology element played a pivotal role in the drive to initiate China's nuclear weapons programs. To break the nuclear dominance of the American imperialists and Soviet revisionists, China had to have nuclear weapons. A second rationale concerned the nuclear threats with which the Chinese were faced. From the Korean War, the two Taiwan Straits crises, to the

Zhenbaodao/Damansky border crisis, the Chinese had been repeatedly threatened by the two nuclear superpowers. A national nuclear deterrent was thus viewed by the Chinese as an effective counter-measure against such threats. Third, membership of the "nuclear club", linked to the great power status, was a strong incentive for the Chinese. For many Chinese people, the production of nuclear weapons could be acclaimed as an achievement of military strength and could boost China's self-confidence, absent for decades. It is highly debatable whether or not China has met its expectations by acquiring a national nuclear deterrent. If nuclear weapons were invented in the post-Cold War period, would the Chinese change their minds on the possession of nuclear weapons? The answer is uncertain, but there are two things for sure: China has now been a nuclear weapons state for decades and in the post-Cold War period it has continued to keep and further develop its nuclear weapons, which are linked to the country's political power status as well as serving as an ultimate military insurance. (Ta chen-Cheng, 2006)

It has tried to produce an historical investigation of the evolution of China's nuclear strategic weapons. Despite the withdrawal of Soviet assistance, China successfully exploded its first atomic bomb in 1964. Two years and eight months later, it successfully tested its first hydrogen bomb. For a developing country, like China, the acquisition of a complete nuclear triad would have been financially and technologically difficult. Almost from the beginning, therefore, China had an imbalanced development in favor of land-based ballistic missiles. In addition to long- and medium-range ballistic missiles, China also has been developing SLBMs and cruise missiles for tactical nuclear use. The Chinese currently possess more than 400 nuclear warheads, most of which are believed to be carried by land-based missiles, although they also own hundreds of outdated bombers and several underdeveloped SSBNs.

In terms of a nuclear branch of the PLA, China set up in 1966 the Second Artillery, a fourth Service specifically to undertake major nuclear missions. Such arrangements reflected not only the Soviet influence but also China's strategic idea of a more centralized, unified and direct command and control system of nuclear forces. Recently, China's Second Artillery is gradually upgrading the range, survivability and mobility of its missiles, although the Chinese are also showing more interest in improved SLBMs. Financial concerns are among the most important factors to affect the size of China's nuclear force. Although the figures of nuclear weapons investment and development are little known, it is certain that in order to acquire a nuclear deterrent, China's technological and industrial plans must have been highly skewed, and associated expenditure on nuclear R&D must have absorbed a large portion of the national budget. Meanwhile, it is possible that the substantial and long-term nature of strategic weapons developments has prevented the Chinese government from instituting effective management. Additionally, "behind a blanket of security and secrecy", China's nuclear programs were far more difficult to be monitored by a budgetary oversight

mechanism. Such a situation could produce substantial problems, especially to a developing country like China, whose development of nuclear forces must take full account of its financial impact.

CHAPTER 4

The Need To Abolish Nuclear Weapons

Michael Wesley has proposed a way to address the problem of nuclear weapons in light of the failure of the 2005 Review Conference of the Nuclear Non- Proliferation Treaty (NPT) to further the goals of disarmament and nonproliferation. He states that the NPT should be scrapped, and recommends that we accept the inevitability of nuclear weapons spread and learn to manage the situation (Wesley 2005). While Wesley's article serves to maintain debate on one of the most important security issues of our time, his arguments present only two possible conclusions*/either that nuclear weapons can be retained indefinitely and never used, or that we must accept the inevitability of their use and all the attendant consequences. This rejoinder challenges both these propositions, argues instead that nuclear weapons must be abolished and offers a way forward.

4a. Problems of a nuclear-armed world

The increasingly nuclear-armed world that Wesley sees as an alternative to holding the nuclear weapon states accountable to their legal obligation to disarm presents a number of major problems that would render the world even more dangerous than our present precarious situation. They include the following:

Nuclear weapons will be used again if they are not abolished

Even an event that is deemed unlikely becomes a mathematical certainty given enough time. As the Canberra Commission on the Elimination of Nuclear Weapons (1996: 9) reported, 'The proposition that nuclear weapons can be retained in perpetuity and never used*/accidentally or by decision*/defies credibility'.

Far from fading with the passage of time, the risk of nuclear weapons use is becoming increasingly stark. This is due to a number of factors, including the distinct possibility of nuclear terrorism (see below), the emergence of new nuclear powers (India, Pakistan and North Korea) over the past decade, a possible increase in the number of nuclear weapon states in the Middle East (Iran as well as Israel), concerns regarding the US missile defense

system and China's likely response to it, and a dangerous shift in US nuclear weapons policy under the current administration. (SUE WAREHAM, 2005)

The latter was spelt out in the 2002 US Nuclear Posture Review, which not only reinforced the central role of nuclear weapons in US military planning for the foreseeable future, but also explicitly confirmed that the US is prepared to use nuclear weapons against non-nuclear weapon states. The seven target states were named (Iran, Iraq, Syria, North Korea, Libya, Russia and China), only three of them being nuclear-armed (PSR 2002). Regardless of the stated policy of deterring biological or chemical attack by threatening nuclear attack, the targeting of non-nuclear weapon states with nuclear weapons is a profoundly dangerous new development. In addition the risk of an accidental detonation or launch has increased since the end of the Cold War due to the deterioration of Russian command and control systems and the retention of thousands of Russian and US nuclear weapons on high alert. (If nothing else, this indicates an absolute imperative to remove all nuclear weapons from high alert status.)

While the US and Russia, who between them possess 96 per cent of the world's approximately 30,000 nuclear weapons, can claim that they have reduced the numbers of their nuclear weapons significantly, unless there is an explicit goal of zero nuclear weapons the process is not genuine disarmament. An increased risk of use of the weapons, either accidentally or by reduced threshold for a deliberate launch, vastly outweighs any possible benefit from the reductions. In particular, the warheads to be abandoned in accordance with the 2002 Moscow Treaty will be kept in storage rather than destroyed (and thus the process is reversible), launch-on-warning remains, withdrawal from the treaty is very easy, the disposal of the Russian weapons was not addressed, tactical weapons were ignored, and both sides continue nuclear weapons developments. (SUE WAREHAM, 2005)

CHAPTER 5

CONCLUSION

5a. Time for a Nuclear Weapons Convention

The NPT, despite its significant shortcomings, remains an important legally binding commitment on the part of its member states to nuclear weapons abolition. However it is no longer sufficient. The urgency of our situation demands more. The time has come for a Nuclear Weapons Convention. A model Nuclear Weapons Convention already exists. The Model Convention on the Prohibition of the Development, Testing, Production, Stockpiling, Transfer, Use and Threat of Use of Nuclear Weapons and on Their Elimination was drafted by an international consortium of lawyers, scientists and disarmament specialists, under the coordination of the Lawyers' Committee on Nuclear Policy in the US, and was released and circulated by the United Nations in 1997. The book *Security and Survival: The Case for a Nuclear Weapons Convention* contains the draft text of the Convention, and addresses the many technical, legal, security and strategic aspects of nuclear weapons abolition (IPPNW, INESAP and IALANA 1999). It deserves serious attention from governments and others who profess commitment to this goal.

A commonly raised objection to pursuing a Nuclear Weapons Convention is that the states whose support is most essential, the nuclear weapon states, will seek to undermine it. Undoubtedly some of them will. The same objection was raised in relation to the Ottawa Convention that banned anti-personnel landmines, and yet that Convention and the process leading to its conclusion were successful in shifting the global norm away from the use of these inhumane and indiscriminate weapons and in favor of the destruction of stockpiles. The focus on a complete ban on landmines, rather than simply controlling them, was a key factor in promoting the Convention as a meaningful measure. Similarly with nuclear weapons, a global shift in thinking, a shift that characterizes them not as status symbols but as instruments of terror, would be an invaluable step towards the achievement of a nuclear weapons free world. There are many steps that can be taken by states to build political will in favor of a Nuclear Weapons Convention, to consider the requirements for a nuclear weapons free world and to implement some of those requirements. Australia's consistent and important work for a Comprehensive Test Ban Treaty is one such example. Another is the current UK study on the requirements for destruction of their nuclear weapons under a nuclear weapons free regime. A further possibility is increasing the extent and scope of nuclear free zones (NFZs), with, for example, promoting a Southern Hemisphere Nuclear Weapon Free Zone. (It is regrettable that the Australian government undermined the

conference of states parties to NFZs held in Mexico in May 2005 by failing to attend.) Steps for verification of nuclear disarmament can also be put in place, and in fact much experience already exists in this area. Nuclear disarmament is much easier to verify than the elimination of biological or chemical weapons. (SUE WAREHAM, 2005)

It remains extraordinary that of all 'weapons of mass destruction'*/nuclear, chemical and biological*/two classes are outlawed, while the most destructive of all, nuclear weapons, are tolerated. It is time for the 30,000 instruments of terror that lie in the world's nuclear arsenals to be de-legitimized, and their very possession, no matter by whom, to attract not prestige but rogue status. There is no more reason to accept the existence of nuclear weapons than there is to accept the existence of biological weapons, chemical weapons, suicide bombers or plane hijackings. Terrorism in all its forms must be rejected. No action on the part of the international community can guarantee that nuclear weapons will never be used again. But we can and must choose the course of action that reduces that risk from its current high level to its bare minimum. That course of action is nuclear weapons abolition, and the task is one of the most urgent facing us all.

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