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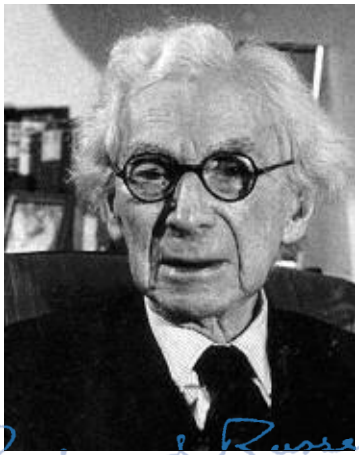

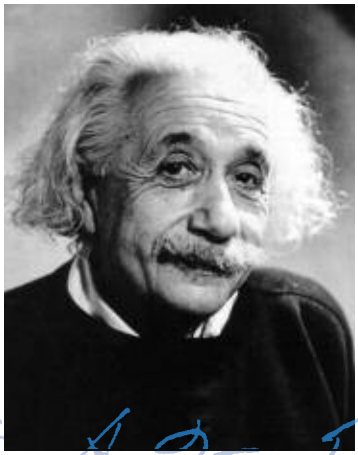

Addressing the Nuclear Weapons Threat:

The Russell-Einstein Manifesto Fifty Years On

JEFFREY BOUTWELL, Editor

Essays by

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Addressing the Nuclear Weapons Threat: The Russell-Einstein Manifesto Fifty Years On

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PREFACE

To the Legacy of Jo Rotblat

Jeffrey Boutwell and Paolo Cotta-Ramusino

The year 2005 marks the intersection of three anniversaries of quintessential importance to the birth of the atomic era and the evolution of the Pugwash Conferences on Science and World Affairs.

First, the 60th anniversary of the atomic devastation of Hiroshima and Nagasaki in August 1945—where two relatively simple and small bombs unleashed more military power than had been exploded up to that time in World War II—opened the curtain on an age where humankind will now forever live with the spectre of a nuclear holocaust. Even should the Pugwash goal of total elimination of nuclear weapons be at some point realized, the sad reality is, in the words of J. Robert Oppenheimer, that "the physicists have known sin; and this is a knowledge which they cannot lose."

Second, there is the 50th anniversary of one of the seminal responses to the dangers of the nuclear age – the Manifesto issued in July 1955 by Bertrand Russell and Albert Einstein, and signed by nine other eminent scientists of international stature, calling upon the international community to eliminate nuclear weapons and renounce war. As described by Joseph Roblat, one of its signatories, the Manifesto "should be required reading for every citizen," exhorting all of us as it does to "remember our humanity."

Third, the 10th anniversary of the awarding of the 1995 Nobel Peace Prize in equal parts to the Pugwash Conferences and Joseph Rotblat helped revitalize both the organization and international efforts to reduce and eliminate nuclear weapons at a time when post-Cold War opportunities for doing so were slipping away. The optimism that the military confrontation between East and West could be replaced by genuine international cooperation has been severely tempered by both the adherence to outdated concepts of security and the new realities of post-9/11 international terrorism.

From the vantage point of 2005, then, the task of eliminating nuclear weapons would seem to be more daunting than ever. As analyzed by the authors in this volume, the obstacles to a nuclear weapon-free world are many and varied. They include but are not limited to the unwillingness of the five original nuclear weapons states to seriously reduce their arsenals; the presence of nuclear weapons states in the volatile regions of the Middle East and South Asia; the

proliferation dangers of nuclear weapons spreading to new states and possibly terrorist organizations; and the renewed interest in civilian nuclear power and its consequences for nuclear weapons capability.

In response to those who might despair that the goal remains as elusive as ever, we point to the ever-present optimism and faith expressed by Jo Rotblat. At the age of 94, when asked the secret to his longevity, Jo grinned and responded, "It's a secret!" He then laughed, and added, "it's having something to live for." And live for his goals he did.

In December 1944, Jo Rotblat voluntarily resigned his scientific position with the Manhattan Project at Los Alamos because there no longer existed what he saw as the main justification for building such a terrible weapon, that the Nazis might get it first. From that day until his death on 31 August 2005, Jo embodied - in his tireless efforts to reduce the nuclear threat – all that is good in people. His love of family, friends and colleagues was but a microcosm of his compassion and concern for all of humanity. That was the spirit in which he founded the Pugwash Conferences, that is the legacy he leaves us, and it is to Jo's life work that these essays are dedicated.

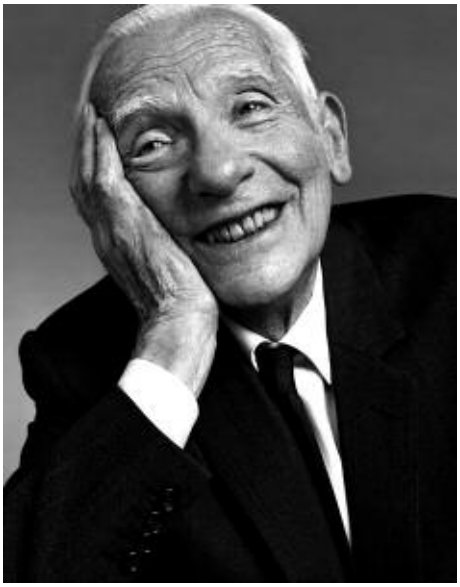

PHOTO BY PETER HOENNEMANN,
COURTESY OF THECOMMUNITY.COM

The Russell-Einstein Manifesto

July 9, 1955

In the tragic situation which confronts humanity, we feel that scientists should assemble in conference to appraise the perils that have arisen as a result of the development of weapons of mass destruction, and to discuss a resolution in the spirit of the appended draft.

We are speaking on this occasion, not as members of this or that nation, continent, or creed, but as human beings, members of the species Man, whose continued existence is in doubt. The world is full of conflicts; and, overshadowing all minor conflicts, the titanic struggle between Communism and anti-Communism.

Almost everybody who is politically conscious has strong feelings about one or more of these issues; but we want you, if you can, to set aside such feelings and consider yourselves only as members of a biological species which has had a remarkable history, and whose disappearance none of us can desire.

We shall try to say no single word which should appeal to one group rather than to another. All, equally, are in peril, and, if the peril is understood, there is hope that they may collectively avert it.

We have to learn to think in a new way. We have to learn to ask ourselves, not what steps can be taken to give military victory to whatever group we prefer, for there no longer are such steps; the question we have to ask ourselves is: what steps can be taken to prevent a military contest of which the issue must be disastrous to all parties?

The general public, and even many men in position of authority, have not realized what would be involved in a war with nuclear bombs. The general public still thinks in terms of the obliteration of cities. It is understood that the new bombs are more powerful than the old, and that, while one A-bomb could obliterate Hiroshima, one H-bomb could obliterate the largest cities, such as London, New York, and Moscow.

No doubt in an H-bomb war great cities would be obliterated. But this is one of the minor disasters that would have to be faced. If everybody in London,

New York, and Moscow were exterminated, the world might, in the course of a few centuries, recover from the blow. But we now know, especially since the Bikini test, that nuclear bombs can gradually spread destruction over a very much wider area than had been supposed.

It is stated on very good authority that a bomb can now be manufactured which will be 2,500 times as powerful as that which destroyed Hiroshima. Such a bomb, if exploded near the ground or under water, sends radioactive particles into the upper air. They sink gradually and reach the surface of the earth in the form of a deadly dust or rain. It was this dust which infected the Japanese fishermen and their catch of fish.

No one knows how widely such lethal radioactive particles might be diffused, but the best authorities are unanimous in saying that a war with H-bombs might quite possibly put an end to the human race. It is feared that if many H-bombs are used there will be universal death—sudden only for a minority, but for the majority a slow torture of disease and disintegration.

Many warnings have been uttered by eminent men of science and by authorities in military strategy. None of them will say that the worst results are certain. What they do say, is that these results are possible, and no one can be sure that they will not be realized. We have not yet found that the views of experts on this question depend in any degree upon their politics or prejudices. They depend only, so far as our researches have revealed, upon the extent of the particular expert's knowledge. We have found that the men who know most are the most gloomy.

Here, then, is the problem which we present to you, stark and dreadful and inescapable: Shall we put an end to the human race; or shall mankind renounce war?[1] People will not face this alternative because it is so difficult to abolish war.

The abolition of war will demand distasteful limitations of national sovereignty.[2] But what perhaps impedes understanding of the situation more than anything else is that the term "mankind" feels vague and abstract. People scarcely realize in imagination that the danger is to themselves and their children and their grandchildren, and not only to a dimly apprehended humanity. They can scarcely bring themselves to grasp that they, individually, and those whom they love are in imminent danger of perishing agonizingly. And so they hope that perhaps war may be allowed to continue provided modern weapons are prohibited.

This hope is illusory. Whatever agreements not to use H-bombs had been reached in time of peace, they would no longer be considered binding in time of war, and both sides would set to work to manufacture H-bombs as soon as war broke out, for, if one side manufactured the bombs and the other did not, the side that manufactured them would inevitably be victorious.

Although an agreement to renounce nuclear weapons as part of a general reduction of armaments[3] would not afford an ultimate solution, it would serve certain important purposes. First: any agreement between East and West is to the good in so far as it tends to diminish tension. Second, the abolition of thermonuclear weapons, if each side believed that the other had carried it out sincerely, would lessen the fear of a sudden attack in the style of Pearl Harbour, which at present keeps both sides in a state of nervous apprehension. We should therefore welcome such an agreement, though only as a first step.

Most of us are not neutral in feeling, but, as human beings, we have to remember that, if the issues between East and West are to be decided in any manner that can give any possible satisfaction to anybody, whether Communist or anti-Communist, whether Asian or European or American, whether White or Black, then these issues must not be decided by war. We should wish this to be understood, both in the East and in the West.

There lies before us, if we choose, continual progress in happiness, knowledge, and wisdom. Shall we, instead, choose death, because we cannot forget our quarrels? We appeal as human beings to human beings: Remember your humanity, and forget the rest. If you can do so, the way lies open to a new Paradise; if you cannot, there lies before you the risk of universal death.

Bertrand Russell reading the Manifesto during a press conference in Caxton Hall, London, 9 July 1955 *(photo: Pugwash Archives)*

Resolution:

We invite this Congress, and through it the scientists of the world and the general public, to subscribe to the following resolution:

> *In view of the fact that in any future world war nuclear weapons will certainly be employed, and that such weapons threaten the continued existence of mankind, we urge the governments of the world to realize, and to acknowledge publicly, that their purpose cannot be furthered by a world war, and we urge them, consequently, to find peaceful means for the settlement of all matters of dispute between them.*

Professor Max Born

Professor of Theoretical Physics at Göttingen; Nobel Prize in Physics

Professor P.W. Bridgman

Professor of Physics, Harvard University, Foreign Member of the Royal Society; Nobel Prize in Physics

Albert Einstein

Professor L. Infeld

Professor of Theoretical Physics, University of Warsaw; Member of the Polish Academy of Sciences

Professor J.F. Joliot-Curie

Professor of Physics at the College de France; Nobel Prize in Chemistry

Professor H.J. Muller

Professor of Zoology, University of Indiana; Nobel Prize in Physiology or Medicine

Professor L. Pauling

Professor of Chemistry, California Institute of Technology; Nobel Prize in Chemistry

Professor C.F. Powell

Professor of Physics, Bristol University; Nobel Prize in Physics

Professor J. Rotblat

Professor of Physics in the University of London, at St. Bartholomew's Hospital Medical College

Bertrand Russell

Professor Hideki Yukawa

Professor of Theoretical Physics, Kyoto University; Nobel Prize in Physics

Foreword

by Joseph Rotblat

This booklet was published for the 55th Pugwash International Conference in Hiroshima, within a few days of the 60th anniversary of the explosion of the first nuclear weapon on that city. It also marks the 50th anniversary of the signing of the Russell-Einstein manifesto, of which I am the last surviving signatory, and the tenth anniversary of the award of the Nobel Peace Prize for our contributions to world peace.

The very name of Hiroshima immediately brings to mind the tens of thousands who died here when that first nuclear weapon was exploded on August 6th 1945, and of the tens of thousands more who died a few days later in Nagasaki. It is difficult to grapple with these figures. As tens become one hundred, hundreds become one thousand, thousands become tens of thousands, and tens of thousands become one hundred thousand, the figures become meaningless. That is why the pictures taken and drawings made in the immediate aftermath of the explosion are so important and so poignant. They bring home to us the impact on individuals, forcing us to imagine how we should feel if those individuals were our own loved ones.

That is why the abolition of nuclear weapons is first of all a moral matter. I was willing to join the Manhattan project because I sincerely believed that the best way to prevent a bomb being used was for the Allies to possess it before the Axis powers. As soon as intelligence sources confirmed that our then enemies were not going to be able to make one, I left. Of course, I was branded as a traitor and accused of being a spy, and I was forced to break off all contact with my former colleagues. When I heard that the bomb had been used, I was devastated.

To my mind the most important reason for eliminating nuclear weapons is the moral one. Are we going to base our world on a culture of peace or on a culture of violence? Have we not learned that violence breeds violence, and the greater the violence, the greater the catastrophe? The use of nuclear weapons is fundamentally immoral, affecting civilians as well as military personnel, innocents and aggressors alike, killing people alive now as well as the generations yet to come. And the consequences of their use might bring the human race to an end.

They are also illegal. In 1996 the International Court of Justice ruled that the use of nuclear weapons and even the threat to use them was against International Law (they made the small reservation that it might be legal to use them if the survival of the state depended on it).

And those powers that originally possessed nuclear weapons have undertaken to get rid of them. This was reaffirmed in the 2000 Review Conference of the Nuclear Non-Proliferation Treaty, which contained the "unequivocal undertaking by the nuclear weapon states to accomplish the total elimination of their arsenals leading to nuclear disarmament."

Yet it seems that morality, international law, and solemn treaty obligations mean little to the politicians of this world. They seem unable to learn, even after the lessons of Iraq, that violence breeds violence. While paying lip-service to their obligations, they continue to disregard them. The situation has become greatly exacerbated by the Bush slogan, "You are either with us or against us." This was originally applied to the campaign of Al Qaeda, but it puts all who do not agree with the Bush policies into the category of villains. There are many, perhaps a majority in the world, who are strongly against terrorism, but are far from happy with the Bush policies. These policies are seen as aiming to establish a US hegemony in the world, treating international treaties with contempt unless they suit the interests of the USA. The USA is rejecting the commitments of the 2000 Review Conference and premising its aggressive diplomacy on the assertion that the problem of the NPT lies not in the procrastinations of the nuclear states but in the lack of compliance by the previously non-nuclear ones. To modernise their nuclear weapons and base their military doctrines on them, while urging obedience to the NPT on everyone else, is the most stunning hypocrisy. I have to add that my own adopted country is little better.

The politicians of this world seem unable to learn, even after the lessons of Iraq, that violence breeds violence.

The answer to violence is not necessarily more violence. Of course we must counter the acts of terrorism, but it is equally important to ask why the violence occurred. What drives a suicide bomber to take his/her own life? What was in the minds of the 9/11 terrorists and in the minds of those who inspired them? Consider the symbolism of their targets: the Twin Towers (capitalism), the Pentagon (military dominance), and (probably) the White House (the architect of US hegemony and the supporter of corrupt regimes in the Middle East). At the very least some steps to remove the causes could have been taken, such as starting to diminish the discrepancies between rich and poor, both within and between countries, and by giving strong support to the United Nations.

We must replace the Bush view of "for us or against us" with a culture of understanding, cooperation, and mutual aid. States must recognise that they

are bound by international law. Practically, the best instrument we have is the United Nations, and especially the General Assembly, which is not haltered by the veto. The UN has its structural problems, but it is far, far better to work with it than to trust the world to a culture where "Might is Right." Simultaneously we can seek to change the UN in a manner that will bring greater justice to its decisions.

Hitherto Pugwash has always operated at the political level, winning the respect of those who govern by its impeccable science and absolute integrity. These tactics are having success at the time of this writing, in steps taken to bring together representatives of the two sides in one of the world's most dangerous trouble spots, Kashmir. But I have come to believe that Pugwash must also seek to influence public opinion in certain specific fields. We can do this and still maintain our scientific integrity. In the UK I suggested that we should join forces with other groups to bring the public's attention to the increasing danger from nuclear weapons. Space weapons are another possible issue. We must remember that most of us live in democracies, and votes matter to politicians.

Finally, to return to my main message, we can best remember our humanity by acting morally. Here I am concerned not only with the politicians, but also especially with the younger generation. We crave a world of peace, a world of equity and so we must nurture in the younger generations a culture of peace. Morality is not the mushy business it is seen by the proponents of *realpolitik*. Morality is what has made it possible for humans to live in groups, and thus to survive at all, since before the dawn of history. Morality must come first. We disregard it at our peril.

Prior to his death on 31 August 2005, Sir Joseph Rotblat was the last living signatory to the Russell-Einstein Manifesto. He was the only scientist to leave the Manhattan Project during World War II for moral reasons, and was jointly awarded, with the Pugwash Conferences, the 1995 Nobel Peace Prize.

The Pugwash Movement and an Agenda for Human Security

by M S Swaminathan

Global trilemma: challenges and responses

The world is facing today a trilemma, or a triple dilemma. Over 3 billion people, struggling to survive with an income of less than US $ 2 per capita per day, are crying for peace and **equitable** economic development. Several countries in Africa are still in the midst of serious famines. The Roman philosopher Seneca said 2,000 years ago, "A hungry person listens neither to reason nor religion, nor is bent by any prayer."

Thus, one aspect of the trilemma is the craving for a peace and development that is equitable in social and gender terms. On another side, there is a **growing violence in the human heart**. Terms like ethnic cleansing, and biological and biochemical terrorism, are widely used in the media. The revival of small pox is becoming a possibility. The nuclear peril has again raised its head. There are over 30,000 nuclear weapons in the arsenals of major and minor nuclear powers. The availability of large quantities of highly enriched uranium increases opportunities for nuclear adventurism. Thus, we are living in an age of nuclear and bio-perils.

The third side of the trilemma is the spectacular progress of science and technology, resulting in increasing **technological divide** between industrialised and developing countries. If access to technology has been a major cause of economic inequity in the past, the challenge now lies in enlisting technology as an ally in the movement for social and gender equity.

In 1994, the report of the *International Commission on Peace and Food,* which I chaired, was released through UNESCO by its then Director General, Prof. Federico Mayor. Unfortunately, the Peace Dividend we had then anticipated, as a result of the end of the Cold War and the break up of the Berlin Wall has yet to materialise. In fact, the expenditure on military hardware and internal security is increasing day by day, particularly after the tragic events of September 11, 2001.

Contemporary developmental challenges, particularly those relating to poverty, gender injustice, environmental degradation and global warming are indeed formidable. Adding to these is the HIV/AIDS–tuberculosis pandemic and the likely spread of the H5N1 strain of the avian flu virus. However, the remarkable advances now taking place in information and communication technology, space technology, biotechnology, agricultural and medical sciences, and renewable energy and clean energy technologies provide hope for a better common present and future. Genomics, proteomics, internet, space and solar technologies, and nanotechnology are opening up uncommon opportunities for converting the goals of **food, health, literacy and work for all** into reality. It is, however, clear that such uncommon opportunities can be realised only if the **technology push** is matched by **ethical and ecological pulls**. This is essential for working towards a world where both unsustainable life styles and unacceptable poverty become features of the past.

Also, there is a growing mismatch between the rate of progress in science (particularly in the area of molecular biology and genetic engineering), and the public understanding of its short and long term implications. There is an urgent need for institutional structures that can inspire public confidence that the risks and benefits are being measured in an objective and transparent manner. Scientists and Technologists have a particularly vital role to play in launching an **Ethical Revolution**. The Pugwash movement, which I now have the privilege to lead, is an expression of the social and moral duty of scientists to promote the beneficial applications of their work while preventing its misuse, to anticipate and evaluate the possible unintended consequences of scientific and technological development, and to promote debate and reflection of the **ethical obligations of scientists in taking responsibility for their work**.

The remarkable advances now taking place in information and communication technology, space technology, biotechnology, agricultural and medical sciences, and renewable energy and clean energy technologies provide hope for a better common present and future.

It will be appropriate to quote in this context, what Albert Einstein once said, "Concern for man himself and his fate must always form the chief interest of all technical endeavours in order that the creation of our minds shall be a blessing and not a curse." Shall we renounce war and violence as a method of settling disputes, or shall we put an end to the human civilization? This is the question facing us today, even 50 years after the *Russell–Einstein Manifesto*. We are witnessing a growing intolerance of diversity and pluralism in human societies, as for example in terms of religion, ethnicity, political belief, colour, culture, gender and language. In contrast, the goal of sustainable development, accepted in various UN Conferences (including the recently held World Summit on Sustainable Development at Johan-

nesburg), as the only pathway to a happy human future, can be realised only if there is harmony between humankind and nature. It is obvious that we cannot be non-violent to nature, if we are going to be violent to each other.

We now have a **Global Convention on Biological Diversity** to help in the conservation and sustainable and equitable use of biodiversity. We need urgently a similar **Convention on Human Diversity**. While a Convention alone will not be able to halt the growing intolerance of diversity, particularly with reference to religion and political belief, it will help to foster a mindset which regards diversity as a blessing and not a curse. Both biodiversity and human diversity are essential for a sustainable future.

It is also necessary to reflect on methods of giving meaning and content to the ethical obligations of scientists in relation to society. The World Conference on Science held at Budapest in 1999 called for a new social contract between scientists and society. With a rapidly expanding Intellectual Property Rights (IPR) atmosphere in scientific laboratories, the products of scientific inventions may become increasingly exclusive in relation to their availability, with access being limited only to those who can afford to pay. The rich-poor divide will then increase, since orphans will remain orphans with reference to scientific attention. How can we develop a knowledge management system that will ensure that inventions and innovations of importance to human health, food, livelihood and ecological security benefit every child, woman and man, and not just the rich? This is now being discussed in the forum of WTO, particularly with reference to drugs relating to the cure of HIV/AIDS. I propose that UNESCO may explore the possibility of establishing an **International Patents Bank for Peace and Human Wellbeing**. Scientists and technologists from all parts of the world should be encouraged to assign their patents to such a bank, so that the fruits of scientific discoveries are available for public good. This would stimulate scientists to consider themselves as trustees of their intellectual property, sharing their inventions with the poor in whose lives they might make a significant difference for the better. The French mathematician, Marquis de Condorcet, a contemporary of Thomas Malthus, said over two centuries ago that the human population will stabilise itself **if children are born for happiness and not just existence**. The Government of Bhutan has taken the lead in developing a **Gross National Happiness Index**, based on the economics of human dignity, love of art and culture, and commitment to spiritual values. Making all well-to-do members of the human family regard themselves as trustees of their financial and intellectual property will be essential for fostering a human happiness movement. We already have many philanthropic organisations for har-

nessing financial resources. The creation, under UN auspices, of an **International Patents Bank for Peace and Human Wellbeing** will help scientists and technologists to practice what the great Indian spiritual and intellectual leader Swami Vivekananda advocated as the true pathway to human fulfilment: "In this life, give everything you can—give money, give food, give love or anything else you can—**but do not seek barter**".

In the ultimate analysis, peace and security are vital for global sustainability. Lasting peace and security can be achieved only if the principles of equity (gender and social) and ethics get integrated in the global developmental agenda. It would be useful to recall what Bertrand Russell once said, "wars do not determine what is right-only what is left."

The first and foremost goal of the Pugwash movement is to work for a nuclear peril-free world. It is unfortunate that even 60 years after Hiroshima and Nagasaki, humankind has not abandoned the concept of a nuclear deterrent. All great struggles in the world—whether it be freedom from colonial rule or the ending of apartheid—have been achieved only through the pathway of non-violence. History teaches us that wars breed wars and that lasting peace will be possible only if violence as a method of resolving conflicts is banished from our minds.

When I assumed the position of President of the Pugwash Conferences on Science and World Affairs three years ago, I was optimistic that the year 2005 would be a watershed year in realising the goal of a nuclear peril-free world. Unfortunately, matters are getting worse and not better, with the recent failure of the NPT negotiations. I hope the Hiroshima Conference of the Pugwash movement (22-27 July 2005) will help to instil a sense of sanity and urgency, particularly among the nuclear power states, about the urgent need for heeding the following advice of Poet Rabindranath Tagore:

"With your mind intent,
cross this sea of chaos,
And sail to that shore of new creation"

Let the political leaders of the world have the wisdom to concentrate on achieving the UN Millennium Development Goals in the area of hunger and poverty, and thereby reach the shore of new creation. The Pugwash movement in its turn should promote a global coalition of all institutions and individuals who, as pointed out by W.H. Auden in the following poetic excerpt, show an affirming flame in the midst of the sea of despair surrounding us.

Hunger allows no choice
To the citizen or the police;
We must love one another or die.
Defenceless under the night
Our world in stupor lies;
Yet, dotted everywhere,
Ironic points of light
Flash out wherever the Just
Exchange their messages:
May I, composed like them
Of Eros and of dust,
Beleaguered by the same
Negation and despair,
Show an affirming flame.

—*W. H. Auden, September 1, 1939*

From *Another Time* © 1940
(see http://www.poets.org/viewmedia.php/prmMID/15545)

Until the Sun Grows Cold: Persisting Nuclear Dangers in a Complacent World

by Steven E. Miller

Presented as a Plenary Lecture at the
55th Pugwash Conference on Science and World Affairs
"60 Years After Hiroshima and Nagasaki"
22-27 July 2005, Hiroshima, Japan

"If science is to bring benefits instead of death, we must bring to bear upon social, and especially international, organization intelligence of the same high order that has enabled us to discover the structure of the atom. To do this effectively, we must free ourselves from the domination of ancient shibboleths and think freely, fearlessly, and rationally about the new and appalling problems with which the human race is confronted by its conquest of scientific power."

Bertrand Russell
"The Bomb and Civilization"
August 1945

Six decades after the fateful first atomic detonation in the desolate desertscape of Alamagordo, New Mexico, the world remains haunted by nuclear risks and dangers. It is now five decades since Bertrand Russell and Albert Einstein issued their famous appeal for a new way of thinking that fully recognizes the grave dangers raised by nuclear weapons. In 1955, a mere decade into the nuclear age, they were driven by a fear that the full implications of the nuclear revolution were not truly understood by publics or by national leaders. The Russell-Einstein Manifesto is most fundamentally an urgent warning, issued by some of the finest scientific minds of the day, that war between nuclear-armed states would be destructive beyond human experience, that such a war could call into view "the risk of universal death." The existence of this profound, species-threatening danger, they urged, called for an equally profound revolution in international politics. If the face of such peril, even eliminating nuclear weapons, though a useful and desirable step, would not be enough; weapons could, after

all, be recreated in times of war. The only truly effective answer to the nuclear danger is the renunciation of war as an instrument of state policy.[1]

"Shall we put an end to the human race; or shall mankind renounce war?" So the Russell-Einstein Manifesto famously asked in 1955, putting before the global public the "stark, dreadful, and inescapable" dilemma facing modern mankind in the era of thermonuclear weapons. The signatories of the Russell-Einstein manifesto believed that the choice was clear: if the magnitude of the peril were properly understood, it would be both necessary and possible to achieve the required revolution in world affairs. Half a century later, we know that this appeal failed. Nuclear weapons have not been eliminated. War has not been renounced. The desired revolution in international politics has not occurred. Though individuals the world over may have been frightened and inspired by the Russell-Einstein Manifesto, leaders and policymakers neither heeded the warning nor accepted the policy recommendations. On the contrary, the leading powers embraced rather than repudiated nuclear weapons, raced to accumulate arms rather than eliminate them, invested heavily in planning how to fight nuclear wars rather than regarding nuclear war as unacceptable, and continued to fight wars rather than renounce war.

Albert Einstein died shortly after signing the manifesto, so one can only imagine how he might have responded to the prodigious nuclear arsenals, numbering tens of thousands of weapons, that were built during the Cold War and how he might have viewed the persistence of armed conflict in the nuclear age. Bertrand Russell, however, left behind an extraordinary short final essay (written several years before his death at 97 in 1970), titled simply "1967," in which he judged harshly both the failure of the world to refashion international politics and his own contributions to world peace.[2] His diagnosis of the challenge posed by the nuclear revolution remained unwavering to the end: "Modern weapons make it practically certain that the next serious war will exterminate the human race." In this judgment he remained faithful to the Russell-Einstein Manifesto. He was no longer so hopeful, however, that there would be significant progress in achieving the recommendations of the Manifesto. Appraising his own life, he concluded – perhaps ungenerously – that he had done "sadly little in view of the magnitude of the evil." Looking unflinchingly at the state of the world, he lamented that "very little" had been done to adapt the world to the nuclear danger. Nearly forty years later, Russell's assessment remains apt: the world has not pursued the course recommended by the Russell-Einstein manifesto.

The warning was unheeded and the recommendations were spurned. And yet, the worst fears have not been realized and the worst dangers have not materialized. It is certainly possible to characterize the decades since the Russell-Einstein

Manifesto as a treacherous passage through fifty dangerous years. Incontestably, there were moments of acute crisis. Nevertheless, the nuclear order that emerged contained, even if it did not eliminate, the nuclear danger. Nuclear weapons and their perils were managed in a world very different from that proposed in the Russell-Einstein manifesto. What has been accomplished? What problems remain? Where do we stand? Half a century after the signing of the Russell-Einstein Manifesto, this is an appropriate moment to take stock of the nuclear realities that confront us. In broad terms, the record of the last fifty years is mixed, with notable accomplishments and notable setbacks and shortcomings. Trends in recent years, however, offer a disappointing and disturbing picture, raising concerns that highlight what is probably the most profound lesson of the Russell-Einstein Manifesto: the need for eternal vigilance in addressing the dangers associated with nuclear weapons.

Nuclear Credits

It should not be forgotten that the nuclear balance sheet over these decades is not wholly negative. Indeed, in some important respects, the record is much better than predicted by the Russell-Einstein Manifesto.

First, and most fundamentally, nuclear use has been avoided since the bombings of Hiroshima and Nagasaki in August of 1945. This is a huge and decisively important accomplishment, one that was by no means inevitable, one that tends to be overlooked and underrated. If we must live in a nuclear-armed world, then preventing the use of these weapons and promoting a norm of non-use is the essential minimum goal, so far successfully achieved. The emergence of a taboo against nuclear use, contrary to the expectations of many in the early years of the nuclear age who believed that nuclear weapons would become "conventionalized," is an important feature of the international landscape, one to be valued and nurtured.[3]

Second, war among great powers – what Russell surely meant in referring to "the next serious war" – has come to seem remote. Even in the mature Cold War period, war between the Soviet Union and the United States seemed unlikely, despite the intense global competition between them. Since the end of the Cold War, the likelihood of a major war seems to have receded still further. Among one group of formerly warring major powers – those of western Europe – war is now said to be unthinkable. No conflict between powerful states seems anywhere near a flashpoint today. And the United States – the lone superpower in this unipolar world – has no clear enemy, only potential rivals none of whom can truly compete with it in the realm of conventional military power.

States and leaders have not renounced war, but at least among the great powers war has been avoided for six decades and appears unlikely. This has surely been a significant factor in keeping the nuclear peace.

Third, many believe (though not all would agree) that nuclear weapons themselves have helped to keep the peace. Through the mechanism of mutual deterrence, nuclear weapons have introduced an element of sobriety and caution in relations between nuclear-armed rivals. The risks and potential costs of major war are so great in a world of nuclear weapons that the benefit of avoiding such war is unambiguously enormous and apparent even to adventurous or bellicose leaders. The ominous warnings of the Russell-Einstein Manifesto about the possibly cataclysmic consequences of nuclear war can only have reinforced the perception that nuclear war involved unacceptable dangers. If nuclear weapons arsenals are to exist, it is certainly desirable that they reinforce peace and discourage reckless behavior.

Fourth, the spread of nuclear weapons to additional states has been unexpectedly limited. The fears articulated in the early years of the nuclear age about the emergence of numerous nuclear-armed states have not come to pass. Instead there has arisen a regime built around the Nuclear Nonproliferation Treaty (NPT) that commands almost universal allegiance among the nearly 200 states in the international system. Dozens of states could possess nuclear weapons today. Instead, remarkably, nearly every state in the system has pledged in a legally binding way to forsake nuclear weapons.

Fifth, arms control has been established as an instrument of statecraft in the management of nuclear affairs. This was an approach that scarcely existed prior to the nuclear age and took years to take root even after the arrival of the nuclear weapon. The several decades beginning with the Limited Test Ban Treaty of 1963 might be said to be the golden age of arms control. Negotiations were a regular feature of nuclear diplomacy. Agreements were reached, rules established, and practices developed that enabled even bitter antagonists like the Soviet Union and the United States to regulate their nuclear relationship and to engage in a surprising degree of uneasy but meaningful collaborative management of the nuclear balance. A network of multilateral arms control measures, including an extensive web of nuclear weapon free zones as well as the NPT, effectively denuclearized much of the planet. At the time of the Russell-Einstein Manifesto, there existed neither serious arms control processes nor any meaningful arms control frameworks to constrain nuclear forces and address nuclear dangers. It was by no means evident at that time that it would prove possible to build restraint into the system by negotiating limits and prohibitions and by engaging in various forms of security cooperation. Though arms control has

often been controversial and has never been universally supported, it appears to be one of the significant and constructive innovations of the nuclear age – one that has contributed to holding at bay the worst scenarios envisioned by the signers of the Russell-Einstein Manifesto.

Finally, there have been a number of successes in coping with nuclear challenges. Over the past fifty years, a number of states have abandoned nuclear weapons programs before building weapons. South Africa acquired nuclear weapons but gave them up. States of the former Soviet Union inherited nuclear weapons when the USSR collapsed, but in every case (Russia excepted) relinquished the weapons on their territories and joined the NPT as non-weapons states. From the perspective of the long term management of the global nuclear order, it is highly desirable that states can and do come to the conclusion that the possession of nuclear weapons is neither necessary nor desirable.

Compared to the bleak fears expressed by the Russell-Einstein Manifesto, the record since 1955 contains a number of significant reassuring elements. The ghastly nuclear disaster has not happened, nuclear weapons have not been used in anger, conflict has been limited and contained, the spread of nuclear weapons has been quite extremely slow and modest, the rise of arms control has introduced an element of management and regulation in nuclear affairs, and there have been a number of successes along the way. It is easy to become preoccupied with nightmares and negatives and to lose sight of the more hopeful dimensions of the big picture. Humankind has survived six decades of the nuclear age without disaster.[4]

Nuclear Debits

The record of the past, however, in no way guarantees a safe future. Despite the significant elements on the positive side of the nuclear balance sheet, nuclear perils remain and the current nuclear agenda is overpopulated with worrying problems. It is possible that a survey of the past could lead to the conclusion that a durable and reliably effective framework for managing nuclear weapons and nuclear dangers had been achieved. No sober assessment today would arrive at that conclusion. Rather, there is a wide belief that the global nuclear order is deteriorating, that the mechanisms and instruments employed in the past to manage the nuclear problem – negotiations, agreements, norms and institutions – are being undermined, ignored, abandoned, or rendered ineffective. At the same time, there has been no retreat from nuclear weapons in the policies of nuclear powers and the appetite for nuclear weapons still exists among some other states.

What are the grounds for fear about the nuclear future? Five broad sets of concerns cloud the horizon.

First, far from retreating from and marginalizing nuclear weapons, the largest nuclear powers have in fact re-committed themselves to nuclear weapons.[5] Their nuclear addiction appears as potent as ever. Though many from both ends of the political spectrum believe that nuclear weapons should be devalued in the aftermath of the Cold War[6], in fact both Russia and the United States have reaffirmed the centrality of nuclear weapons in their security policies. Both envision the retention of nuclear weapons for the long run – indeed, for the indefinite future. They have been outspoken in asserting that nuclear weapons are not merely useful, but essential, in their security postures. Both adhere to doctrines that retain the articulated option of first use of nuclear weapons. When in the mid-1990s, the International Court of Justice was considering the international legal status of nuclear weapons, the nuclear weapons states (led in particular by the United States) were adamant in insisting that nuclear weapons are legal and legitimate instruments of national policy. All this despite the end of the political rivalry that justified their nuclear postures in the first place.

The re-embrace of nuclear weapons by the United States and Russia sends a powerful message about the alleged beneficial effects of nuclear acquisition and makes it harder to press a compelling case against the acquisition of nuclear weapons by other states.

Thus, the case for nuclear weapons continues to be made – in both word and deed – by the largest nuclear powers. If nuclear weapons are legal, legitimate and moral, if they confer enormous security benefits, if they are essential to the defense arrangements of even the largest and most powerful states, then why should all others forsake them forever? If nuclear weapons remain a central currency of world power, if they continue to be regarded as the ticket to the high table of international politics, why won't other states be tempted to seek this power and this status for themselves? The re-embrace of nuclear weapons by the United States and Russia sends a powerful message about the alleged beneficial effects of nuclear acquisition and makes it harder to press a compelling case against the acquisition of nuclear weapons by other states.[7] Nuclear weapons have not receded to the margins of international politics – but so long as they remain at the center of great power relations and global power politics, nuclear risks and nuclear temptations will persist.

Second, the bilateral arms control process between Russia and the United States appears to be at an end. Over several Cold War decades, Moscow and Washington built up a framework (consisting of negotiations, arms control agreements, and associated institutions) that restrained and regulated their nuclear relationship and provided a framework within which reductions would occur. Today, there are no active strategic arms control negotiations between

Russia and the United States and none are in view. Indeed, a prominent school of thought in the United States vigorously offers the view that such arms control is a relic of the past and sees little or no role for it in US policy.

Even as bilateral arms control has disappeared from the current policy agenda in US-Russian relations, significant portions of the arms control edifice that once existed have been removed from the picture. The ABM Treaty, long regarded as the cornerstone of the strategic arms control regime, ceased to exist when the United States exercised its right of unilateral withdrawal in 2002. Arguably, the question of missile defense needed to be rethought in the post-Cold War era and there is no reason to assume that the arguments and conclusions of the past retain their relevance in what is by now a very different world. By the same token, there is no reason to assume the wisdom of jettisoning the treaty at a time when the United States is very far from being in a position to deploy meaningful missile defenses – not least because this step occurred despite the evident displeasure of the Russian government (President Putin described it as a mistake) and despite the expressed consensus preference of the 2000 NPT Review Conference that the ABM Treaty be perpetuated. The Bush Administration was very willful on this issue, but the world by and large disagreed with its policy. The United States has paid a substantial political price in order to gain the freedom to prematurely deploy missile defenses that are at present almost completely ineffective.

Furthermore, one consequence of the withdrawal from the ABM Treaty was the demise of the START II agreement signed by Presidents Bush and Yeltsin in1993. The Russian Duma had made ratification of START II explicitly conditional on the perpetuation of the ABM Treaty, which meant that the Bush Administration's determination to pursue missile defense in an unrestricted fashion guaranteed that START II would never enter force.[8] (Among other things, START II would have eliminated multiple warhead missiles and compelled a timetable of reductions.) Thus, two of the major components of the arms control framework that resulted from years of painstaking negotiations between Washington and Moscow have been abandoned. Remarkably, the foundational document governing the US-Russian nuclear relationship is the START I agreement, which has its origins in the first term of the Reagan Administration.

The end of strategic arms control was punctuated by the signing on May 24, 2002, of the Strategic Offensive Reductions Treaty. At a summit in Moscow, Presidents Bush and Putin put their names to this brief, peculiar, and perfunctory agreement (commonly known as the Moscow Treaty). In this agreement, the parties agree to reduce strategic nuclear warheads to 1700-2200 by 2012. However, the treaty expires on the same day – December 31, 2012 – that its limit takes effect. The treaty provides no careful definition of that which is being

limited. There is no provision for the elimination of warheads removed from deployed forces. Spares, reserves, and tactical nuclear weapons are uncovered by the treaty. There is no constraint on modernization, nor does the Moscow Treaty impose any limits on delivery systems. There is no timetable for implementation. The treaty contains no specific verification provisions and does nothing to increase the transparency of the US-Russian nuclear relationship. In its scope and coverage, the Moscow Treaty is significantly less ambitious and less consequential than the provisional agreed framework that emerged in 1997 at the Helsinki Summit between Bill Clinton and Boris Yeltsin; the Moscow Treaty was not a bold step forward but a considerable step backwards compared to what was under consideration five years earlier.[9] As one critic concluded, "This meager agreement – which fits on less than one typeset page – hardly deserves to be called a treaty."[10]

In short, arms control is waning in the bilateral relationship that encompasses most of the world's nuclear weapons. This reality would matter little if the nuclear agenda in the US-Russian relationship were finished, if there were no significant issues still to be addressed, if the process of shrinking and marginalizing their nuclear arsenals was largely complete, if the world found this circumstance to be satisfactory. But such is not the case.

Third, in recent years the nonproliferation regime has been subjected to an unusual series of stresses and challenges. A high-water mark was achieved in 1995 with the indefinite extension of the Nuclear Nonproliferation Treaty (NPT) but the subsequent decade has witnessed a sequence of serious blows and setbacks for the regime. In 1998, India and Pakistan tested nuclear weapons and explicitly proclaimed their status as nuclear weapon states. This did not represent an affront to the legal NPT regime because neither Islamabad nor Delhi had signed the NPT; they simply exercised their legal right to acquire nuclear weapons. However, this was the first open expansion in the number of nuclear weapon states in several decades. It shattered the hope that there existed a powerful and effective norm of nonproliferation. Obviously, whatever norm may be said to exist was not sufficient to prevent the acquisition of nuclear weapons by India and Pakistan. Furthermore, though there was criticism of the Indian and Pakistani tests and some countries responded by imposing some limited sanctions, neither has suffered lasting damage to its international position as a consequence of nuclear acquisition. On the contrary, both have subsequently (in the aftermath of 9/11) developed special relationships with the United States. The world has rather rapidly accommodated the emergence of two new nuclear-armed states.

The NPT regime has also been plagued by difficult and corrosive compliance controversies. One has involved a still unresolved dispute over Iran's nuclear

activities. By its own admission, Tehran has engaged in noncompliant behavior – notably in failing to report legitimate nuclear activities, as required by safeguards agreements. Iran insists that when its transgressions came to light, it worked with the International Atomic Energy Agency to redress the situation and to restore Iran's good standing in the IAEA system. Others however, led most vociferously by the United States, believe that Iran's comprehensive development of nuclear infrastructure and its failure to report such activities are signs that Iran is seeking nuclear weapons. Though Tehran denies any such aspiration, those convinced that Iran is pursuing nuclear weapons believe that the NPT regime is failing to adequately address a case in which a state is not fulfilling its legal obligations under the NPT. Those who share this conclusion doubt the value of the NPT in coping with the most important proliferation problems.

Another compliance controversy involves the nuclear weapons program of North Korea and represents a clear failure for the NPT system. Pyongyang's nuclear activities have been a source of concern since the early 1990s. Indeed, the IAEA formally declared North Korea to be in a state of noncompliance in 1993 and its nuclear program was subject of intense diplomatic focus throughout the 1990s. But the saga entered a dramatic new phase late in 2002. Apparently prompted by a growing confrontation with the United States, the North Koreans moved vigorously to escape the scrutiny and constraints of the IAEA system. Pyongyang expelled IAEA inspectors, shut down IAEA cameras, and untagged, unsealed and relocated its spent fuel rods that had been tagged, sealed, and counted by the IAEA. It acted to resume its nuclear activities, reopening its plutonium reprocessing facility and restarting its long-dormant nuclear reactors. Early in 2003 North Korea announced its withdrawal from the NPT and by April 2003 it declared that it had acquired nuclear weapons. This development has provoked dismay and criticism, but to date the international response has been ineffectual and the NPT regime has proven incapable of coping with the sort of challenge posed by Pyongyang. To the NPT's growing number of critics, this case is proof conclusive that the regime is not adequate to protect against the spread of nuclear weapons to determined proliferators.

Reinforcing the perception that the NPT regime may be experiencing a significant erosion was the startling revelation in 2003 of the AQ Khan network.[11] Over a period of many years, Pakistan's leading nuclear scientist and father of Pakistan's nuclear weapons was running a private nuclear bazaar, selling weapons-related technologies and expertise to aspiring proliferators. This network was profoundly subversive of the NPT regime, intentionally circumventing and undermining the technological barriers to proliferation erected by the nonproliferation regime. Several states are known to have done business with

the AQ Khan network and there are fears and suspicions that others may also have advanced their nuclear ambitions in this way. It appears that, among other things, nuclear weapon designs were provided by the AQ Khan network to at least some of its clients. Very few developments in the history of the nuclear age have been as damaging to the nonproliferation regime as the activities of the AQ Khan network.

Even as the NPT regime is struggling to cope with one blow after the next, there is a visible and growing disaffection and distemper on the part of many of its adherents. Numerous non-weapons states are increasingly impatient with and frustrated by the failure of the nuclear weapons to make tangible progress toward fulfilling their nuclear disarmament obligations under Article VI of the NPT. Some non-weapons states resent and are angered by efforts of nuclear suppliers (led by the United States) to restrict the spread of dual use nuclear technologies that have both civil and military applications; such restrictions, they insist, are in violation of Article IV of the NPT, which confers on signatories the right to acquire nuclear technology for peaceful purposes provided it is appropriately safeguarded. Nevertheless, some in the nuclear supplier community are reluctant to facilitate the spread of technologies that can constitute the infrastructure of a nuclear weapons program, no matter what safeguards are put in place. Considerable ill will has arisen in some quarters over this issue. But the discontent of the non-weapon states is fully matched by the disillusionment with the NPT regime found in influential groups within the United States. Current US policy is shaped by a profound skepticism about the effectiveness of the NPT. The antagonisms contained within the NPT system were clearly manifest in the 2005 NPT Review Conference, which ended in failure.

In short, across several decades the NPT system has made a significant contribution to restraining the spread of nuclear weapons. It remains an important – many would argue, a crucial – instrument in the global management of the nuclear threat. But today the health of the regime is poor, its value questioned, is effectiveness doubted, its durability uncertain, it attractiveness challenged by weapon states and non-weapon states alike.[12] The NPT regime is, many believe, in a state of serious crisis.[13]

Fourth, there has emerged a growing fear of nuclear terrorism. Concern about this threat arose initially in the aftermath of the collapse of the Soviet Union as a result of the possibility that insecure holdings of nuclear weapons and nuclear materials in the former Soviet Union might find their way into the hands of terrorists.[14] This issue pressed itself even more urgently on the agenda after the terrorist attacks in the United States on September 11, 2001. Suddenly it was unambiguously clear that there existed terrorist groups willing and

even eager to mount terrible attacks and wishing to cause mass casualties. Indeed, when Al Qaeda came under close scrutiny after 9/11, it became evident that this terrorist group had interest in nuclear, biological, and chemical weapons as well as an explicitly declared desire to kill millions of Americans. In combination, the existence of insecure holdings of nuclear assets and terrorists aiming to cause mass casualties produced a realization that here was a new problem that represented an enormous menace. Indeed, in the US presidential election of 2004 both candidates agreed that the risk of nuclear terrorism was the most significant threat to American security.

The threat of nuclear terrorism can be minimized only by ensuring that all inventories of nuclear weapons and the materials to make them are held in adequate conditions of safety and security. This requires a comprehensive global program to establish stringent standards for the safety and security of nuclear assets and to ensure that all countries with nuclear programs meet these standards (including not only Russia's vast nuclear holdings, which have received considerable attention, but those of all other countries engaged in nuclear activities that involve weapons-usable material). Unfortunately, while some progress has been made in this direction, it has been distressingly slow, halting, and incomplete, so that the risk of theft or illicit sale of weapons or materials remains. This means that it is still possible to imagine circumstances in which terrorists obtain nuclear weapons or the wherewithal to make them. Should this happen, a nuclear terrorist attack on one or more cities becomes a distinct possibility. Indeed, one leading expert argues that nuclear terrorism is inevitable unless comprehensive remedial action is taken on a time scale much more rapid than any in evidence so far.[15] Here, then, is another route to the use of nuclear weapons, one that seems far more plausible and worrisome today than in the past.

Fifth, cutting across many of these points is a new, more assertive set of policies by the United States.[16] An influential school of thought, generally dominant in the Bush Administration and ascendant in the US Congress, views arms control skeptically, questions the utility and adequacy of multilateral arms control, and prefers to rely on US power rather than international regimes for addressing emerging nonproliferation problems.[17] Over recent years, the United States has rejected some arms control measures – such as the comprehensive test ban treaty, the verification protocol of the biological weapons convention, the Land Mine Treaty, as well as the international criminal court. It has withdrawn from the ABM Treaty. It explicitly repudiated the thirteen arms control steps called for in the consensus document negotiated at the 2000 NPT Review conference and refused to countenance discussion of the thirteen steps at the 2005 Review conference. Simultaneously, the United States is exploring

new nuclear weapons designs, investing in its infrastructure for nuclear testing, and has promulgated a long-term program of nuclear modernization – all in the name of reinforcing nuclear deterrence.

In the decades since the end of World War II, the United States has generally played an important global leadership role in promoting arms control, international law, and international institutions. Now Washington seems to have turned its back on that legacy, preferring freedom of action and self reliance to treaties and regimes, preferring to dismiss or dismantle rather than build and promote the framework of agreements and management mechanisms that have shaped the global nuclear order and – many believe – helped to tame its dangers. The Bush Administration judges that this diplomatic legacy is either unsuccessful or irrelevant or inadequate to cope with present challenges. It offers instead an approach, rooted in American power, that it believes is both necessary given the threats that now exist in this post-9/11 world and superior to what it regards as the insufficiently effective approaches of the past. Rather, to address nuclear threats, the United States will deploy defenses to thwart attackers, it will (under the Proliferation Security Initiative) interdict illicit shipments whenever and wherever they are suspected, it will seek to identify and punish those who do business with aspiring proliferators,[18] and it will seek to isolate, ostracize, and penalize those hostile states seeking weapons of mass destruction. In its most controversial policy, the Bush Administration has proclaimed the right and the intention to use force against proliferators it deems sufficiently threatening. Eliminating such regimes, it is argued, is truly the most effective nonproliferation policy – indeed, some would argue this is the only truly effective nonproliferation policy.[19] This doctrine of preventive force led, of course, directly to the war in Iraq. Many around the world criticized and opposed the war as unnecessary and illegal, but to the Bush Administration and those who supported it the intervention represented a rare instance in which the nonproliferation regime was actually effectively enforced and UN resolutions were actually given teeth. As one supporter put it, the Iraq war is "the most important arms control action in 50 years."[20] Or is it, as UN Secretary General Kofi Annan has suggested, a lawless act likely to provoke proliferation by those most fearful of Washington's wrath?

While the Bush Administration's more controversial policies will inevitably provoke division and disagreement, there is much in Washington's current array of nonproliferation policies that is sensible and indeed completely compatible with existing and potential arms control frameworks. Finding ways of more effectively preventing the spread of nuclear weapons and enforcing arms control agreements should command wide support – perhaps especially among those

who believe that arms control represents a valuable tool of statecraft. Instead, Washington's new directions inspire deep unease. Even the Bush Administration's constructive steps are viewed in the context of its openly articulated disdain for arms control, its disregard for international law, its refusal to accept constraints on its own behavior, and its professed willingness to act unilaterally and to use force whenever it feels a need to do so. Viewed in this wider context, Bush's policies – even their most uncontroversial and worthwhile elements – seem part of an effort to downgrade or supplant arms control and international cooperation rather than a genuinely serious attempt to make existing regimes better and more effective.

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Hence, as it seems to much of the world, we head off into the next sixty years of the nuclear age with the most powerful and influential state displaying wholly different and unfamiliar impulses, reversing patterns of behavior half a century in the making, charging into an uncharted future. The Bush Administration is confident that its approach will bring peace and security in its wake. Many others fear that the frameworks and mechanisms built up over half a century are now being jeopardized, that the instruments that contributed to safe passage though decades of nuclear danger are being undermined or cast aside, that the imperfect but adequate approaches of the past are being superceded by a very different approach that rests ultimately on unproven claims about the efficacy of American power. Perhaps the Bush Administration will be proven correct; this is a hypothesis that is now being tested. But those who do not share the Bush Administration's confidence that this will be the case are dismayed at the uncertainties and dangers that may lie ahead, at the unfamiliar and potentially distressing nuclear age we are in the midst of creating. As Graham Allison has written, "Sixty years after Hiroshima…, the regime is falling apart and the threat lingers on."[21]

When the Cold War ended fifteen years ago, there were high hopes that a new and better world would now be possible – a world in which the dangerous nuclear rivalry receded into history and nuclear weapons were relegated to the margins of world politics. With the revolutionary transformation after 1991 in relations between Washington and Moscow – from bitter rivals to friendly occasional collaborators – it seemed as if there would be much greater scope for progress in arms control, much less need for nuclear weapons, and much greater prospect for building international institutions and a more cooperative international order.[22] With the passage of fifteen years, we can see that these hopes have been almost completely disappointed.[23] Nuclear weapons have not been marginalized but remain prominently enshrined in the security poli-

cies of nuclear-armed states. The bilateral arms control process that has governed the overwhelming majority of the thousands of nuclear weapons on this planet has waned, with past agreements undone and future agreements unsought. Multilateral arms control appears to be in a condition of indefinite dead stop, with little prospect for meaningful progress in any context. The nonproliferation regime is under unprecedented assault, beset by so far intractable problems, with many states asserting its inadequacy and few displaying the political will and substantive wisdom to salvage and strengthen it. The rise of the nuclear terrorism threat has added a new peril to the scene and has raised the challenge of dealing with substate actors who are not constrained by existing institutions. And these unsettling realities are compounded by the fact that the United States, formerly the great patron of arms control and international institutions, has dramatically changed course and now appears indifferent to or hostile toward many of the international arrangements it was centrally involved in creating. Humankind has survived sixty years without nuclear disaster, but this is no guarantee that the nuclear future will be managed wisely or effectively. The present turbulent state of the global nuclear order, the potential breakdown of existing restraint regimes, the possible spread of nuclear weapons to many other states, and the continuing centrality of nuclear weapons in the war plans of multiple states all highlight the extreme pertinence of the grave warning issued by the Russell-Einstein manifesto. The possible breakdown of that order brings us face to face with risks of the highest order. Anyone who doubts this should visit the Hiroshima Atomic Museum.

Conclusion

Bertrand Russell understood immediately the portentous implications of the nuclear weapon. When, in August 1945, he learned of the atomic bombing of Hiroshima, he sat down and wrote yet another remarkable essay, under the title "The Bomb and Civilization."[24] He offered a powerful response to the awful reality of what had happened in Hiroshima. "It is impossible," he wrote in his opening sentence, "to imagine a more dramatic and horrifying combination of scientific triumph with political and moral failure than has been shown to the world in the destruction of Hiroshima." But his deeper concern was with the broader and enduring implications of what had just happened on a beautiful clear morning in Japan. Russell was filled with foreboding:

"The prospect for the human race is somber beyond all precedent. Mankind is faced with a clear-cut alternative: either we shall all perish, or we shall have to acquire some slight degree of common sense. A great deal of new political thinking will be necessary if utter disaster is to be averted."

Even in the first hours of the nuclear age, Russell arrived at the conclusion that represented his own judgment about what sort of new political thinking was necessary to survive the nuclear age, the conclusion to which he clung to the very end of a very long life. In an exact foreshadowing of the Russell-Einstein manifesto, he wrote, "Either war or civilization must end…."

What Russell instantly grasped, and never lost, was a comprehension of the fact that vast and irreducible dangers inhere in the mere existence of nuclear weapons. This same realization lies at the heart of the Russell-Einstein manifesto. Though the world has grown accustomed to life in the nuclear age and complacent about its risks, these dangers never go away. Indeed, as defense intellectual Fred Ikle reiterates in an article written almost exactly sixty years after Russell's 1945 essay, nuclear weapons raise "profoundly serious problems that dominate the nuclear age, casting a dark shadow far into the future." The fundamental problem, Ikle warns, is that nuclear weapons might someday again be used, with incalculable consequences:

"We have become habituated to – indeed utterly dependent on – a world order predicated on the non-use of nuclear weapons. This order might end abruptly. It would be a unique revolution in military affairs if the most powerful weapons in the arsenals of many nations were never used….The paroxysm after 9/11 would be a hiccup compared to the reaction the morning after one or more nuclear bombs caused massive devastation."

But there is no easy escape from this risk. As Ikle laments, "We know how we entered the nuclear age. We do not know how to exit from it."[25] Thus do Russell's instant insights reverberate across the decades, losing none of their force or relevance.

The Russell-Einstein Manifesto was a historic and memorable clarion call, not as a guide to action but as a vivid and powerful statement of the dangers that exist and the outcomes that must be avoided in the nuclear age. The nuclear order that emerged after 1955 was far from that envisioned by the crafters of the manifesto. Nevertheless, it sufficed to avoid the nightmare feared by the signers of the Manifesto and contained many innovative and constructive elements. We have survived six decades of the nuclear age by creating a global nuclear order that contained instruments of restraint, regulatory mechanisms, implementing institutions, and frameworks for dialogue across hostile divides. Now important elements of that order are being questioned, doubted, criticized, defied, or abandoned. The inescapable perils of the nuclear age persist, some new dangers have arisen, but the evolved system for limiting nuclear risks and avoiding nuclear dangers seems weakened and eroding. Thus, though some comfort can be drawn from the record of six decades since the use of two atomic

bombs in 1945, there is no reason to be complacent about the future. Managing the coming nuclear age is sure to be at least as taxing of human reason and ingenuity as were past decades –and the dangers will be possibly even greater.

Viewed in the light of five decades of subsequent experience, the Russell-Einstein Manifesto appears to have been off-target, combining an overstated sense of the immediate dangers with an unreachable visionary prescription. And yet its message endures and resonates with present concerns, perhaps because at some elemental level it captures an essential truth: nuclear weapons do pose an unprecedented challenge to mankind and require eternal vigilance if disaster beyond imagining is to be averted. The real focus should be not on the subsequent fifty years safely (if dangerously) traversed, but on the eternity to come in which the nuclear affairs of the planet must be managed without misstep by imperfect and occasionally irrational human beings in a world plagued by conflict and violence. As Bertrand Russell wrote which characteristic vividness in his memorable last essay, nuclear peace must hold "throughout future ages, until the sun grows cold."

Notes

[1] An excellent detailed account of the origins and initial impact of the Russell-Einstein Manifesto is Sandra Ionno Butcher, "The Origins of the Russell-Einstein Manifesto," Pugwash History Series, No. 1, May 2005.

[2] Bertrand Russell, "Last Essay: 1967," found at www.humanities.mcmaster.ca/%7ET Russell/bressay.htm.

[3] On this point, see Nina Tannenwald, "Stigmatizing the Bomb: Origins of the Nuclear Taboo," *International Security*, Vol. 29, No. 4 (Spring 2005). Tannenwald draws attention to an essay by Thomas Schelling ("A Half Century Without Nuclear War") in which he suggests that the evolution of the taboo against nuclear use "has been as important as the development of nuclear arsenals." Quoted in Tannenwald, p. 6.

[4] Relevant here is the conclusion offered by Michael Levi: "In sixty years, we haven't found any solutions, but we've done remarkably well at muddling through. That's probably not a bad strategy for the next sixty years, too." From Michael Levi, "Past Imperfect: The Nuclear Age Turns Sixty," *The New Republic Online*, July 16, 2005, as available at www.tnr.com.

[5] I have discussed this at greater length in Steven E. Miller, "Is the NPT System Slowly Dying? Seven Challenges to the Regime," in Center for Policy Analysis and Planning, *Conference on Nuclear Proliferation*, (Athens, Greece: Ministry of Foreign Affairs, 2004), pp. 45-63.

[6] An articulate concise expression of the arms control perspective on devaluing nuclear weapons is John Holdren, "Is There a Role for Nuclear Weapons Today?," *Arms Control Today*, Vol. 35, No. 6 (July/August 2005), p. 8. But for similar conclusion offered from a very different point in the political spectrum, see also the comments of Richard Haass, formerly Director of Policy Planning in the current Bush Administration and now President of the Council on Foreign Relations. As described by Brian Urquhart in

a review of Haass's new book, *The Opportunity: America's Moment to Alter History's Course* (Public Affairs, 2005), Haass believes that "the objective of the United States should be to delegitimize and reduce, as far as possible, 'the currency and symbolic value' of nuclear weapons." From Brian Urquhart, "The New American Century?" *New York Review of Books*, August 11, 2005, p. 39.

[7] But for the contrary view, disputing the connection between US nuclear behavior and the incentives of potential proliferators, see Keith B. Payne, "The Nuclear Posture Review: Setting the Record Straight," *The Washington Quarterly*, Summer 2005, pp. 145-146.

[8] On June 14, 2002, immediately after the US withdrawal from the ABM Treaty, Russia stated that it would no longer honor its START II commitments. See "START II and It Extension Protocol at a Glance," Arms Control Association Fact Sheet, January 2003.

[9] For overviews of the Moscow Treaty and its deficiencies, see the Natural Resources Defense Council, "The Moscow Treaty's Hidden Flaws," February 3, 2003, as available at www.nrdc.org/nuclear/moscow/moscflaw.asp; and Union of Concerned Scientists, "The Moscow Treaty," Global Security Backgrounder, March 6, 2003, as available at www.ucsusa.org/global_security/nuclear_weapons.

[10] "The Moscow Treaty's Hidden Flaws," p. 1.

[11] For a thoughtful overview of the Khan network and its implications, see David Albright and Corey Hinderstein, "Unraveling the A.Q. Khan and Future Proliferation Networks," *The Washington Quarterly*, Spring 2005, pp. 111-128.

[12] According to one particularly illuminating account of the Bush Administration's approach to arms control, the NPT is said to be viewed by key officials as "pointless. Only those who find it in their interest to obey will do so, Bush officials say, and the rest will cheat." Bill Keller, "The Thinkable," *New York Times Magazine*, May 4, 2003, p. 52.

[13] See, for example, Burkard Schmitt, "NPT Breakdown," EU Institute for Security Studies Newsletter, No. 15 (July 2005), p. 3, which that the accumulating setbacks to the regime, including the failure of the 2005 Review Conference, have "plunged the NPT into a deep crisis of both compliance and confidence."

[14] An early overview of this problem is Graham Allison, Owen Cote, Richard Falkenrath, and Steven Miller, *Avoiding Nuclear Anarchy: Containing the Threat of Loose Russian Nuclear Weapons and Fissile Material* (Cambridge: MIT Press, 1996).

[15] Graham Allison, *Nuclear Terrorism: The Ultimate Preventable Catastrophe*, (New York: Henry Holt, 2004).

[16] For a concise and illuminating exposition of the foreign policy instincts now evident in Washington ("the revolutionary ideology of American revivalism"), see Walter Russell Mead, *Power, Terror, Peace and War: America's Grand Strategy in a World at Risk*, (New York: Alfred A. Knopf, 2004, especially pp. 109-137.

[17] Far a detailed elaboration of this point, see Steven E. Miller, "Skepticism Triumphant: The Bush Administration and the Waning of Arms Control," in Hans J. Giessmann, Roman Kuzniar, and Zdzislaw Lachowski, eds., *International Security in a Time of Change: Threats, Concepts, Institutions*, (Baden-Baden: Nomos Verlagsgesellshcaft, 2004), pp. 15-40. Symptomatic of this perspective and its influence in Washington is the Bush Administration's plan to reorganize the State Department so as to cut most arms control offices and eliminate a number of senior arms control positions. See David Ruppe, "Bush Looks to Cut State Department Arms Control Offices," Global Security Newswire, August 3, 2005.

[18] For the latest initiative aimed at punishing and deterring private sector actors who facilitate proliferation by hostile states, see Dafna Linzer, "US Plans New Tool to Halt Spread of Weapons," Washington Post, June 27, 2005,

[19] For thoughtful alternative perspectives on what the nuclear agenda should be, see George Perkovich, Joseph Cirincione, Rose Gottemoeller, Jon Wolfsthal, and Jessica Matthews, *Universal Compliance: A Strategy for Nuclear Security*, (Washington DC: Carnegie Endowment for International Peace, 2004); Aston B. Carter, "How to Counter WMD," *Foreign Affairs*, September/October 2004, pp. 72-85.

[20] Professor Paul Bracken of Yale University, as quoted in Keller, "The Unthinkable," p. 102,

[21] Graham Allison, "Sixty Years Later: Hiroshima and the Bomb," Center for American Progress, as available at www.americanprogress.org.

[22] See, for example, the set of recommendations prominently offered by the US National Academy of Science's Committee on International Security and Arms Control in *The Future of US Nuclear Weapons Policy* (Washington DC: National Academy of Sciences, 1997) which urges, among other things, very deep cuts in overall nuclear arsenals, adoption of no-first-use doctrines, the establishment of high levels of transparency, the steady enlargement of restraint regimes, and advocates the objective of achieving the prohibition of nuclear weapons. For a more recent dissent from the direction of current policy, see Sidney Drell and James Goodby, *What Are Nuclear Weapons For? Recommendations for Restructuring US Strategic Nuclear Forces*, (Washington DC: An Arms Control Association Report, April 2005).

[23] It is worth noting that this conclusion would have been only somewhat different in 2000. A decade into the post-Cold War era, before the advent of the Bush Administration, leading experts were writing of "disappointed expectations" and a "crisis of confidence shaking the arms control regime. See, for example, Joseph Cirincione, "Historical Overview and Introduction," in Joseph Cirincione, ed, *Repairing the Regime: Preventing the Spread of Weapons of Mass Destruction* (New York: Routledge, 2000), pp. 1-3, from which this language is drawn.

[24] Bertrand Russell, "The Bomb and Civilization," August 1945, available at www.humanities.mcmaster.ca/%7Erussell/brbomb.htm.

[25] The quotes in this paragraph are from Fred C. Ikle, "Nuclear Explosion," *Wall Street Journal*, August 5, 2005.

From the Manifesto to the Article VI Forum

By Douglas Roche

To re-read the Russell-Einstein Manifesto in light of the 2005 Seventh Review Conference of the Nuclear Non-Proliferation Treaty is enough to make a grown man cry (at least a grown man with some sensitivity to today's human condition).

> *Shall we put an end to the human race; or*
>
> *Shall mankind renounce war? …*
>
> *There lies before us, if we choose, continual progress in happiness, knowledge and wisdom. Shall we instead, choose death, because we cannot forget our quarrels? We appeal, as human beings to human beings: Remember your humanity, and forget the rest.*

This historic call of Russell-Einstein was answered by the delegates to the 2005 NPT Review Conference with an asterisk. This seems absurd, but that is what happened.

The Conference was held at a time of increasing nuclear weapon dangers. North Korea tried to leave the Treaty, bragging that it has nuclear weapons. Iran is accused of abusing its access to the nuclear fuel cycle in an attempt to make a nuclear weapon. The two countries are flash points off the volcano of 31,000 nuclear weapons possessed by eight States. Three of these States - India, Pakistan and Israel - will not even join the NPT. The other five, the US, Russia, the UK, France and China, refuse to begin the comprehensive negotiations for the elimination of nuclear weapons which the International Court of Justice said should be *concluded*. The UN Secretary-General's High Level Panel has warned that a "cascade" of proliferation of nuclear weapons is ahead.

In this chaotic climate, Secretary-General Annan opened the NPT Conference by asking the delegates to "imagine, just for a minute," the consequences of a nuclear catastrophe on one of the great cities of the world. "Tens, if not hundreds, of thousands of people would perish in an instant, and many more would die from exposure to radiation."

> *The global impact would also be grave. The attention of world leaders would be riveted on this existential threat. Carefully nurtured collective security*

mechanisms could be discredited. Hard-won freedoms and human rights could be compromised.

The sharing of nuclear technology for peaceful uses could halt. Resources for development would likely dwindle. And world financial markets, trade and transportation could be hard hit, with major economic consequences. This could drive millions of people in poor countries into deeper deprivation and suffering.

The Secretary-General was followed by Mohamed ElBaradei, Director-General of the International Atomic Energy Agency, who pointed to the increasing danger since the last Review Conference in 2000.

In five years, the world has changed. Our fears of a deadly nuclear detonation – whatever the cause – have been reawakened. In part, these fears are driven by new realities. The rise in terrorism. The discovery of clandestine nuclear programmes. The emergence of a nuclear black market.

ElBaradei emphasized that commitment to nuclear disarmament must be firm.

As long as some countries place strategic reliance on nuclear weapons as a deterrent, other countries will emulate them. We cannot delude ourselves into thinking otherwise.

One by one, the delegations then came to the podium for a general debate that went on for eight days. A total of 93 speeches were made, for the most part lackluster and devoid of the sense of urgency conveyed by Annan and ElBaradei.

While the speeches went on, delegates argued in the back rooms over the agenda. Previously, in 2002, the United States had said it would no longer support some of the 13 Practical Steps for nuclear weapons abolition that all States had agreed to at the 2000 NPT Review Conference. By 2004, the US had stiffened its resistance to implementing Article VI of the NPT by demanding the exclusion of any mention of past commitments in the 2005 NPT agenda.

This attempt at revisionist history shocked even America's allies and drew the ire of the Non-Aligned Movement, particularly Egypt and Iran. Fights over the language to be used in drawing up the Agenda occupied 15 of the 20 days of the Conference. The struggle, which at times sank into acrimony, seemed picayune until one remembered that the struggle over the Agenda was a surrogate for the *real* struggle.[1] This is the struggle between the nuclear haves and have-nots. Many non-nuclear States believe that a two-class world is becoming permanent and that the nuclear weapons States, despite their pretence of

complying with Article VI through reductions, have no intention of divesting themselves of nuclear weapons. Moreover, as the powerful nations exert more control on cutting off access to the nuclear fuel cycle, in the name of stopping the proliferation of nuclear weapons, they further discriminate against the developing countries.

So how was all this resolved at the Conference? With an asterisk. After the words, "Review of the operation of the Treaty" in the Agenda appeared an asterisk. To find out what the asterisk referred to, one had to search out another document, which was a Statement by the President: "It is understood that the review will be conducted in the light of the decision and the resolution of previous Conferences, and allow for discussion of any issue raised by States Parties."

Russell and Einstein must have turned over in their graves. To have the future of humanity trivialized by an asterisk is an insult to human intelligence.

The last remaining signatory of the Manifesto, Sir Joseph Rotblat (who shared the 1995 Nobel Peace Prize with the Pugwash Conferences for his lifelong work for nuclear disarmament), sent a message to the Conference. He asked: "How can we talk about a culture of peace if that peace is predicated on the existence of weapons of mass destruction? How can we persuade the young generation to cast aside the culture of violence when they know that it is on the threat of extreme violence that we rely for security?"

He said the nuclear weapons States are not acting in the good faith required by the NPT. While rigorous steps must be taken to control and cut off the supplies of nuclear materials, this is not enough. "To gloss over the hypocrisy of the nuclear weapons States, which are modernizing nuclear weapons and ensconcing them in their ongoing military doctrines, while urging abstinence on everyone else, is stunning." He called for a working system of collective security: "We all have a common interest: survival. We have to move forward from a now-outdated security system based on nuclear deterrence and alliances to one based on cooperation and allegiance to humankind."

Again Rotblat appealed: "Remember your humanity." The conduct of the Review Conference suggests that many did not hear his words.

To further describe the failure of the NPT Review Conference to come to grips with the pressing issues of nuclear weapons proliferation is a depressing exercise.

For the moment, let us look beyond the failures of diplomacy, as Russell and Einstein did, and renew our determination to find the route to a nuclear weapons-free world. A paper submitted to the Conference by Pugwash Secretary-General Paolo Cotta-Ramusino has many good points. The balanced implementation of the nuclear disarmament, non-proliferation and peaceful use of

nuclear energy facets of the Treaty are imperative, and Heads of State and governments must now take up these issues. It is time for political leaders to overcome the diplomatic paralysis dragging down the hopes of humanity.

Patience has run out. Frustration levels are too high. The NPT process must be reinvigorated if the Treaty is to survive. A working partnership of important non-nuclear States determined to save the NPT must now be forged. While the non-proliferation side of the Treaty must continue to be addressed, the heart of the crisis revolves around Article VI. A concerted effort must now be made to bring Article VI issues to the forefront. This reality led the Middle Powers Initiative to convene the "Article VI Forum," in which 28 States are now participating.

Instead of accepting the roadblock thrown up by the nuclear weapons states, a multiregional group of like-minded States is now addressing the legal, political and technical requirements for the elimination of nuclear weapons. Examples of such work include establishment of verification capabilities, fissile material and nuclear weapons inventories, nuclear material controls, strengthening and expanding nuclear weapons-free zones national abolition legislation like New Zealand's, and NATO nuclear-sharing issues. The Article VI Forum, may lead to specifying steps that could be taken unilaterally, bilaterally, regionally, and multilaterally to enhance security without relying on nuclear weapons. Such work would be done as a contribution to the NPT process and provide the framework for eventual negotiations leading to a nuclear weapons-free world.

Like-minded States who really believe in Article VI of the NPT need to spend time working together and allow their creativity and commitment to surface. This process may well produce the outline of how negotiations, as called for in Article VI and reinforced by the International Court of Justice, can proceed. At some point in the new deliberations, those nuclear weapons States interested in joining a new process to fulfill Article VI could be invited to join. A framework for negotiations could be started.

Much will depend on public backing and political support for this new initiative. A rising public demand for nations to get on with negotiating and implementing a Nuclear Weapons Convention to ban the production and deployment of all nuclear weapons may take hold at some point. It can be expected that one or more nuclear weapons States would resist and claim that it still needs nuclear weapons. But such claims would have less and less credibility in a world where the architecture for security without nuclear weapons became better understood and where the universal norm against the possession of nuclear weapons was growing in stature.

Like-minded States, tired of being dominated by recalcitrant nuclear weapons States in the existing multilateral forums, need to be liberated in their quest for the elimination of nuclear weapons. Actually, they need to liberate themselves. In so doing they would provide new hope, at a moment of the NPT's deadly deadlock, for achieving true security for all humanity.

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[1] Those interested in the details can find them in my political analysis on the website of the Middle Powers Initiative, http://www.middlepowers.org/2005NPTpoliticalanalysis.pdf

The Russell-Einstein Manifesto Fifty Years Later

by Sverre Lodgaard

Disarmament

Fifteen years after the Russell-Einstein Manifesto was published, the nuclear Non-Proliferation Treaty (NPT) committed all member states to work towards nuclear disarmament. At the 2000 Review Conference of the Treaty, the parties declared their unequivocal commitment to the elimination of all nuclear arms, without any references to general and complete disarmament, or qualifying words like "ultimately" and "eventually."[1] Today, all states are legally obliged to strive for a nuclear weapon-free world, with four exceptions: India, Israel, and Pakistan never joined the Treaty, and North Korea withdrew in 2003. However, even with the unwillingness of these states to sign, no other arms control treaty has so many members.

The bad news is that there are some 30,000 nuclear weapons in existence today, about as many as in 1970, when the NPT entered into force. The bad news is also that the disarmament architecture has crumbled. For thirty years, nuclear arms control centred on two pillars: the NPT and the Anti Ballistic Missile (ABM) Treaty. The ABM Treaty is gone, and the US-Russian Strategic Offensive Reductions Treaty (SORT) of 2002 marks the end of strategic arms control. No nuclear weapon has to be eliminated because of this agreement, and there is no provision for information exchange and verification: the Treaty leaves the parties with maximum flexibility. Only a few pages long, it reads like a press release.

The ABM Treaty was counter-intuitive: it said that we are best protected while naked. It left the fate of humankind to mutually assured destruction (MAD) and to a number of arms control measures that could reduce, but never eliminate, the risk of nuclear catastrophe. "MAD" was not such a misplaced acronym for this kind of arrangement.

Nevertheless, abandoning the ABM Treaty in favour of missile defence was a mistake. First, for the reason that President Nixon gave when signing the Treaty in 1972: if you have a shield, it is easier to use the sword. The sword has been greatly improved, and big investments are made to erect a workable shield. The guiding perspective is to expand the range of military options by enhancing

the effectiveness of the offensive forces while reducing the fear of retaliation against US and allied territory. Whether they are exercised or not, the wide range of options are important in themselves. Duly noted by others, they instil awe and foster subordination, or can trigger new and enhance old conflicts.

A second, related reason, is that the US ballistic missile defence (BMD) programme, while technologically questionable, is substantial enough to stimulate arms competition in all environments. Not only is it meant to counter the missile capabilities of "rogue states," it may also undermine the Chinese nuclear deterrent, and therefore has become a major concern for China. The BMD controversy was, furthermore, an important factor in taking the Conference on Disarmament out of business. Since the Comprehensive Test Ban Treaty in 1996, it has achieved nothing.[2]

What is left of the nuclear arms control architecture is basically the international non-proliferation regime, which has much built-in redundancy and resilience to pressure. However, the total failure of the 2005 NPT Review Conference raises many questions about its future. International norms are generally under pressure, and the failure of the Review Conference weakened the norm of non-proliferation.

Non-proliferation

The limits of supply-side policies

Twenty-five years ago, the International Nuclear Fuel Cycle Evaluation (INFCE) argued that beyond the turn of the century, policies of technology restraint would no longer be effective in halting the proliferation of nuclear arms.[3] Technologies for production of fissile materials and nuclear weapons would be too widely disseminated for such measures to have much of an impact. The Evaluation therefore recommended a change of emphasis from the supply to the demand side. Increasingly, non-proliferation policies would have to address the *motives* for acquisition of nuclear arms.

INFCE overestimated the ease with which nuclear weapons can be acquired. For instance, Iran had a secret nuclear programme for 18 years up to 2003. Still, assuming that Iran has become transparent, it would have to continue for some more years in order to become a nuclear weapon state (NWS) – should this be the intention. It therefore remains important to establish a physical line of separation between civilian and military uses of nuclear energy. The world is too turbulent, and the insecurities too widespread, to allow this distinction to boil down to matters of intent. However effective the verification arrangements, this will not be good enough.

On the other hand, Iran almost reached the capability to produce significant amounts of highly enriched uranium making use of black market transactions. The globalized world turned out also to be globalized in the field of sensitive nuclear items. Firms and individuals from four continents contributed to a secret network nurtured from within the nuclear programme of a NWS. To a large extent, INFCE was therefore right after all: so long as the demand side is dynamic, technology denial is an uphill battle.

It is paradoxical then, that twenty-five years after INFCE, the emphasis on technology denial is stronger than ever while little is done to remove the motives for nuclear proliferation. The guidelines of the Nuclear Supplier Group (NSG) have been strengthened, national export control mechanisms have been improved, and the Proliferation Security Initiative has been added. Calls have been made for a moratorium on the construction of new fuel cycle capabilities while trying to reach broad international agreement on more effective ways to ensure that such technologies are not misused for military ends. This is all commendable. However, the overall approach has become severely lop-sided for lack of more constructive policies aimed at the demand side.

Removing the motives

Demand-side approaches

All nuclear weapon programmes have been motivated by *national security* concerns. To eliminate the weapons, conflict resolution is therefore of the essence. Some programmes have also been motivated by *status* considerations. Possession of nuclear weapons tends to enhance the rank and influence of states in international affairs.

Security

In the Middle East, South Asia, and Northeast Asia, the security motives are all to the obvious. In the Middle East, elimination of Israeli nuclear weapons can only be the fruit of a reliable, regional peace arrangement. Under current circumstances, asking Israel to become a non-nuclear member of the NPT is only a waste of time. In South Asia, the long-term prospects for confidence-building are poor so long as the Kashmir conflict remains unresolved. The European experience with confidence and security-building measures clearly suggests that such measures will not succeed unless the parties abandon all plans to change the political status quo by military means. In South Asia, the parties have not done this. In Northeast Asia, the regional security concerns about North Korea blend with the global policies of the United States. However, here too the end point is regional: a united, non-nuclear Korea.

In these proliferation-prone regions, elimination of nuclear arms obviously depends on the elimination of war as a means of solving inter-state disputes. The Russell-Einstein Manifesto had it right: in order to get rid of nuclear weapons and avoid nuclear war, war itself must to be renounced. And not any war, but especially inter-state war, for domestic warfare has not inspired the acquisition and use of nuclear arms as of yet. And this is the kind of warfare that Einstein and Russel had in mind when they wrote the Manifesto.

The United States presents a special set of problems for the elimination of nuclear arms. Already in 1991, after the first Gulf war, nuclear weapons were widely seen as the only possible equalizer to US superiority in conventional arms, i.e. the only type of weapon within reach that could deter the US from attacking. Why, then, don't the Americans take the lead in eliminating nuclear weapons altogether? In a nuclear weapon-free world, the United States would arguably be even more superior than it is today.

The answer seems to reside in the fact that nuclear weapons remain the monopoly of a few; that they instil awe and respect in the minds of others, and generally, that the United States can stay on top of all military dimensions without having to make any trade-offs. For instance, in the aftermath of 9/11 the BMD programme got another boost despite the fact that it is completely irrelevant to the fight against terrorism. Another interpretation of US politics in the mid-90s (when eminent voices actually recommended nuclear abolition) is that the domestic interests in nuclear weapons were too well entrenched and the political inertia too strong, to let such a radical reorientation happen.

Status

Karl Marx wrote that the most effective power is the structural power at the root of the system, which functions without being used. In international affairs, this is the military power, the most spectacular component of which is nuclear weapons. In rudimentary terms, states know each other's capabilities and tune their policies to the international power hierarchy. For instance, in relation to the major powers, smaller states exercise self-discipline not to provoke resentment and corrective action. However, to function the way Marx described, the military power has to be demonstrated, if only exceptionally.

Sixty years have passed since Hiroshima and Nagasaki. The more time that passes without nuclear weapons being used, the stronger the norm of non-use. Thus, nuclear weapons are often referred to as *political* weapons that must never be used. This is a contradictory statement, however. If firm expectations of non-use take hold, the political utility of the weapons will dwindle, and they will no longer be seen as effective means of pressure. Throughout

nuclear history, proponents of nuclear arms have therefore pursued new types of weapons, the use of which is easier to contemplate: smaller ones and/or weapons with special effects such as neutron weapons. If it becomes more thinkable to use these weapons, then it also becomes more likely.

The case of Iran demonstrates that mastery of nuclear technology remains a matter of prestige. Inter alia for reasons of civilizational pride, Iranians are closing ranks in defence of technology programmes that cover the entire fuel cycle. However, since fuel cycle technologies are dual use items, status considerations and security concerns are hard to disentangle. Nuclear technologies may be genuinely attractive for reasons of prestige while at the same time, emphasis on status gains may help divert attention from the build-up of weapons capabilities. Iran seems bent on going as far as it can manage, the reactions of the outside world taken into consideration. Whatever internal brakes exist, they are in themselves too weak to stop the programme short of nuclear weapon status.

While security concerns can be analysed in reference to contending actors and their interests and capabilities, status considerations are intangibles. Policies to eliminate security impediments to nuclear disarmament can therefore be discussed in concrete terms. Policies to remove the status impediments are harder to elaborate, but no less important for the cause of disarmament.

The way ahead

The unit of account

US unilateralism is structural in the sense that it derives from the superior position of the US in world affairs. It may vary from one administration to the other, but the variations are likely to be variations of the same theme. It follows that the selective US policy in the field of arms control – no to some agreements (ABM and CTBT), yes to others (NPT), support for some provisions of the NPT (safeguards and other NNWS obligations), disregard for others (notably the disarmament obligations of art. VI) – is likely to continue as well, with some variations.[4] The policy of regime change is another matter. Many Bush administration officials remain committed to it, while a Democratic administration may prefer other strategies.

The policy of regime change challenges the NPT in a fundamental way, because it introduces a new unit of account. In the NPT, the nuclear weapons are the units of account. It is the nuclear weapons that should not proliferate, and it is the nuclear weapons that should be eliminated. The policy of regime change shifts the emphasis on to the possessors: President Bush stresses that the weapons must remain in the right hands. As long as this is the situation, there

can be no one agreed strategy for non-proliferation and disarmament. There can only be select areas of cooperation.

The cases of Iran and North Korea illustrate the point. The United States threatens the regimes, and they respond by intensifying their nuclear programmes. The US in turn uses the nuclear build-up to strengthen its own case against the regimes. Under such conditions, the prospects for negotiations are slim: when one side makes it clear that the prime objective is to cut the throat of the other, the other side has little incentive to negotiate.[5]

Plea number one must therefore be for the US to abandon its policy of regime change so that once again, agreement is forged on the unit of account. Only then can there be a common strategy to achieve the objectives of the NPT.

Leadership

Different from its role at all previous review conferences, in 2005 the United States played no leadership role. Many non-aligned countries had a low profile as well. Additionally, the eastern group did not function. The New Agenda Coalition (NAC) (Sweden, Ireland, Mexico, Brazil, South Africa, Egypt and New Zealand) was split, and may never be revitalized. It was as if the action had left the scene while some actors stayed behind to "play" acrimony. A few states probably found the outcome acceptable, or even quite satisfactory: the United States and Egypt did not care about a final document, and Iran escaped special attention. No mention was made of North Korea's withdrawal from the Treaty.

How can the miserable outcome of the Conference be accounted for? Beyond US policies of unilateralism and regime change, what factors can explain the failure?

From a much longer list, the following three are among the most important:

First, much of the action has moved to other arenas such as the CTR/G8, Proliferation Security Initiative (PSI), SC Res. 1540 on physical protection and export controls, the six-nation talks on North Korea, and the negotiations between the EU3 and Iran. Most of these initiatives are quite compatible with the multilateral regime approach to non-proliferation, but the regime has not been able to integrate them and exploit the synergies that they offer.

Second, the United States refused to build on the disarmament benchmarks from 1995 and 2000. Combined with demands for stricter verification and export control, many non-nuclear weapon states (NNWS) felt that the fundamental non-proliferation/disarmament trade-off was off balance.

Third, Egypt is concerned about its politico-diplomatic leadership in the Middle East, and many Egyptians are uncomfortable about the NPT commitment.

The European Union did more than others to uphold the norms and policies embedded in the non-proliferation regime. However, while making much progress in formulating joint policies at Union level, the decision-making capabilities of the 25 member states are far from that of a nation state. Still, the EU is a good starting point for new leadership coalitions to uphold and implement the NPT.

To limit the losses and regain momentum for the regime, an effort was made to develop a text on disarmament and non-proliferation as an integral part of the declaration of the UN Summit held in September 2005. Norway and six other countries - Rumania, the UK, Chile, South Africa, Jordan and Indonesia – rallied the explicit support of some 80 governments, but failed to obtain the necessary consensus. The end result was a Summit declaration without any message on disarmament and non-proliferation whatsoever. Still, the Group of 7 has been encouraged to continue its work, and may become an important intermediary in renewed attempts to garner support for the regime. Such attempts should reconfirm the unequivocal commitment to eliminate all nuclear weapons (Article VI), call for a clearer physical separation of civil and military applications of nuclear energy (Article IV), draw the non-members closer to the regime, and tighten the conditions for withdrawal.

Conflict resolution

The prominence of the security motive for acquisition of nuclear arms speaks to the fundamental importance of conflict resolution. In the Middle East, South Asia, and North-East Asia, what can be achieved in terms of arms control and disarmament is marginal so long as the underlying conflicts persist. The role of arms control and disarmament is to exploit whatever opportunities exist to stabilize the situation and enhance security at lower levels of armament: more substantial progress depends on the solution of underlying conflicts. Pugwash is therefore right in turning more attention and resources to such endeavours.

In some respects, it remains to adjust the military policies of the NWS's to improvements in international affairs. This is most obvious in Europe (the main arena of US-Soviet confrontation during the Cold War) where big power relations have improved dramatically and where the European Union and Russia have become "strategic partners." War is no longer seriously contemplated. For Germany, this situation is historically unique in that there is no threat from any direction. However, Great Britain, France and Russia have not drawn the proper lessons for their nuclear postures. For instance, they have not dropped the option of being the first to use nuclear weapons against each other. Between strategic partners, such policies make no sense.

The United States still deploys some 480 sub-strategic weapons in Europe, referred to in NATO documents as "essential for the security of the alliance." Except for naval patrols in international waters, these are the only nuclear weapons that remain outside the territories of the NWS's. Germany has raised this issue at NATO's Nuclear Planning Group. Withdrawal of these weapons is long overdue. The US/Soviet Presidential declarations of 1991/92 are unfinished business as well. Efforts should be made to ensure their implementation and verification.

Much the same goes for US-Russian relations. While war has not disappeared from the agenda, it is not seriously considered or expected. Nevertheless, these nuclear powers keep about 2000 nuclear warheads on "quick reaction alert," most of them directed at each other.

Arms control and cooperative threat reduction

The nuclear weapon sector can be divided into four categories: operational weapons, weapons held in reserve, weapons that have been withdrawn and are awaiting dismantlement, and weapons-grade materials. So far arms control and disarmament agreements have mainly focused on operational weapon systems. When they were significantly reduced after the Cold War, the weapons and materials were transferred to the other three categories, leaving large amounts of excess fissile materials behind.

The Cooperative Threat Reduction (CTR) programme (initiated by the American Senators Nunn and Lugar) was launched in 1992 in support of arms control agreements. CTR has done much to secure and eliminate stocks of fissile materials emanating from dismantled nuclear weapons. Also, CTR helps reduce the risk of theft from poorly safeguarded nuclear weapon depots. The CTR acronym is now used to cover a range of practical measures aimed at eliminating dangerous remnants of the Cold War, primarily, but not only in the former Soviet Union. The most effective way of reducing the potential for nuclear terrorism is to take precautionary measures at the source, where fissile materials and ready-made weapons might otherwise be obtained. This is precisely what CTR programmes do.

CTR activities are flexible. If the relations between two or more states are ripe, and appropriate technical means to pressing problems are available, CTR activities may provide quick and effective solutions to immediate challenges. Arms control agreements, such as the NPT with its fixed safeguards system, offer much less flexibility and fewer options for swift responses. Violations by states may take years to uncover, report, and react to. On the other hand, arms control agreements provide a much-needed degree of predictability and robust-

ness in times of political turbulence. In this respect, arms control and cooperative threat reduction are complementary approaches.[6]

The challenge is to see if these approaches can be further developed and integrated into a unified, broad approach covering the entire nuclear weapon sector. In a process of complete nuclear disarmament, sooner or later this will be required. For in a nuclear weapon-free world, all materials and infrastructure dedicated to military uses have to be eliminated. If not, one would be left with a number of threshold states, and that is not the idea. A comprehensive approach therefore makes perfect sense from both a disarmament and an anti-terrorism point of view. The sooner we are able to address the entire sector in coherent fashion, the better.

The three state problem: Israel, India and Pakistan

Israel is known to have acquired nuclear weapon capabilities already in the 1960s,[7] and seven years after the nuclear weapon tests in South Asia, the world is getting used to the fact that India and Pakistan are NWS's. There is no reason to believe that any one of these three will dismantle their nuclear arsenals any time sooner than any of the five recognized NWS's. None of them are members of the NPT, and calls on them to accede to the NPT as non-nuclear weapon states are futile. The paternalistic language of UNSCR 1172 (6 June 1998), adopted shortly after the tests, leads nowhere.

The best option would be to ask India, Israel and Pakistan to behave "as if" they were members of the Treaty. This was French policy for quite some time, until it became a regular member in 1992. Concretely, the signatories would be obliged not to assist others in acquiring nuclear weapons (Article I of the NPT), to abide by the rules of international nuclear transactions (the safeguards requirement of Article III), and to dedicate themselves to nuclear disarmament (Article VI). Today, they are under no such legal obligation.

The US-India Joint Statement issued after the meeting of President Bush and Prime Minister Singh on July 18, 2005, offers such an "as if" kind of deal, but for India only. Emanating from the Next Steps in Strategic Partnership (NSSP) Initiative launched in January 2004, India would acquire the same benefits and advantages as other states "with advanced nuclear technology" (euphemism for NWS). In return, it would assume the same responsibilities and practices. The deal treats India for what it is, i.e. a de facto NWS. It legitimizes Indian nuclear weapons, yet without formally recognizing India as a nuclear power.

Basically, the non-proliferation rationale for such an arrangement is simple. To lean on India to eliminate its nuclear arsenal and join the NPT as a NNWS is unrealistic to the point of being counterproductive. Neither can it join as a

NWS, for the NPT recognizes five NWSs only and can, in practice, not be amended[8]. Better, then, to treat India for what it is – a NWS – and to commit it to the non-proliferation regime on an "as if" basis. For in the long run, policies are best when based on facts and not on fiction. In view of all the pressing proliferation concerns both in the state and non-state paradigms, the universality of the regime is more important than ever. The deal is a step in that direction. On the same logic, Pakistan would be next in line.

India, Pakistan and Israel never joined the NPT and broke no international legal commitment by going nuclear. For some years, they have been the only non-parties to the NPT, North Korea apart.[9] The Joint Statement breaks the stalemate surrounding this "three state problem". It substitutes engagement of India and commitments to non-proliferation standards for isolation and top-down talk, which never had the desired impact on developments there.

The critical question in this connection is whether the gain comes at the cost of diminished commitments by NPT parties. Does the deal amount to reward for imprudent behaviour? At the heart of this question is the problem of recognition. Unless international law has a life of its own entirely disconnected from the realities of the world, de jure recognition of India will follow. For instance, the question will have to be addressed in connection with the establishment of a nuclear weapon-free zone in Central Asia. Should India be asked to extend security assurances along with the recognized NWSs? What would be more important, assurances by the UK and France or assurances by India? In the view of this author, the gains outweigh the costs also in the case of the US-India deal, despite its many weaknesses.[10]

The Middle East

Ten years ago, in the Madrid process, Israel rejected all invitations to discuss nuclear weapons in the Middle East. The rejection was categorical. Even if a distinction would be drawn between *discussions* and *negotiations*, and assurances given that there would be no automaticity in moving from the one to the other, such discussions were taboo. At the United Nations, Israel still votes for a zone free of weapons of mass destruction in the Middle East, but on the condition that the security problems are solved, Israel is recognized by all the other states in the region, inter-state relations are normalized, and peace has become a stable prospect.

In 1991, former President Bush proposed a freeze on reprocessing activities in Israel. If George W. Bush would follow up on his father's proposal, he would have a powerful message for the Israelis. In essence, it would be Yitzak Rabin's strategic rationale for the Oslo agreements in reverse. Rabin said Israel should

hurry up and settle the scores with the Palestinians because in ten years' time, a graver threat was likely to emerge from Iraq and Iran. Today, the WMD threat from Iraq and Libya has been eliminated. Indeed, the United States and others have done much to alleviate Israeli security concerns, but outside forces can only do so much by themselves. However, if Israel would accept a freeze in Dimona, this could help convince the Iranians that they should make the suspension of their enrichment activities permanent. This way, there could be a cut-off in the production of fissile materials in the Middle East. At present, no other country in the region has the capability to produce significant amounts of weapon-grade materials.[11]

The Madrid process had a number of working groups. One of them was devoted to Arms Control and Regional Security (ACRES). It was terminated along with the rest of the Madrid process in mid 1995. Today, there is good reason to revive ACRES and include Iran and Syria, which did not attend this part of the Madrid process. In 1995, the specific issue that made it collapse was the nuclear problem. This time, however, the talks should be predicated on Israeli willingness to discuss nuclear matters.

Nuclear power and nuclear weapons

For the first time in decades, there is once again a growing interest in nuclear power. First, because quite possibly, petroleum prices will stay high for a long time ahead. Second, concerns of global warming and climate change make nuclear power more attractive. Third, after Chernobyl, nuclear power has become safer and more cost effective. To make complex operations safer, they are often simplified and made automatic, to reduce the risk of human error. Safety improvements therefore yield a bonus in terms of operating costs. Fourth, geopolitics today is primarily about energy supplies and energy security. All major actors who do not have enough on their on territory (i.e. all except Russia) are shopping around the world for oil and gas. Thus, for several potent reasons, nuclear power is on the rise. As a consequence, the rules of international nuclear commerce may become subject to pressure, to the point of being undermined.

It is all the more important, therefore, to maintain and enhance the NSG guidelines and to mobilize the G8 and others in support of them. The rise of nuclear power also underlines the importance of drawing the non-members of the NPT closer to the regime. Furthermore, it speaks to the importance of separating civilian and military applications of nuclear energy. This should be in the common interest not only of the two sides of the Atlantic, but of all supplier states.

Strengthening the norm of non-use

In its Advisory Opinion on nuclear weapons, the International Court of Justice emphasized that any use of nuclear arms would have to be in conformity with international humanitarian law. This requirement makes it very hard to conceive of any application of nuclear weapons.

Policies of no-first-use (NFU) work in the same direction. They limit the function of nuclear weapons to one only: deterring their use by others. In addition, there is a disarmament logic built into it: *nobody would need them if nobody had them*. NFU can be promoted incrementally, first of all between the three NWS's in Asia and between the three nuclear powers in Europe. The stronger the norm of non-use the less attractive nuclear weapons will be, and the smaller the status benefits.

The same logic may not apply to the world of terrorism, however. Terrorists seek nuclear explosives in order to use them, and being without specific geographical coordinates, they cannot be deterred. Still, there is a veritable gap between the urgency of the threat and the pace of efforts to address it: the amount of material secured in the two years following 9/11 was no more than the amount secured in the two years before, because access to sensitive sites and other bureaucratic obstacles had been allowed to fester without top-level intervention to solve them.[12] Dismantlement of tactical nuclear weapons, which are small and easy to carry, and warheads without electronic locks, is urgently needed as well.

For all the talk about nuclear dangers, there is an amazing lack of effective policies to avert them. The likelihood that nuclear weapons will be used seems no lower today than 50 years ago, when the Russell-Einstein Manifesto was issued.

Conclusion

In programmatic terms, the following steps are essential:

1. Reconfirm the unequivocal commitment to a NWFW. Seek the strongest possible UN statement to this effect.
2. Combat policies of regime change and re-establish agreement on the unit of account.
3. Turn NPT policies and CTR programmes into an integrated approach covering the entire nuclear weapon sector, addressing disarmament and non-proliferation concerns in the state as well a non-state paradigms.
4. Draw non-NPT members closer to the regime, commit all states to enhanced NSG guidelines, establish a clearer physical distinction between civilian and military uses of nuclear energy, and tighten the conditions for withdrawal.

5. Give more emphasis to demand-side policies addressing security concerns and status considerations, and to regional conflict resolution.
6. Build new coalitions to promote the cause of disarmament and non-proliferation. European states committed to international rules, norms and standards can make important contributions in this respect.

Notes

[1] Step 6 in a longer list of measures to implement art. VI of the Treaty. *2000 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons*. Final Document, NPT Review Conference 2000.

[2] A collection of essays on nuclear stability and missile defense has been published in Pugwash Occasional Papers, No.2, March 2001.

[3] INFCE/PC/2/9, *International Fuel Cycle Evaluation* (Summary Volume), Vienna: International Atomic Energy Agency.

[4] George Perkovich, *Bush's Nuclear Revolution: A Regime Change in Nonproliferation*, Foreign Affairs, March/April 2003.

[5] Even if the governing circles in the United States appear split on how to deal with Iran and North Korea, it suffices that *some* members of the Administration advocate regime change for the dynamics to work this way. For states tend to condition their security planning on worst-case assumptions.

[6] Morten Bremer Mærli, *Ad Hoc Security Initiatives versus Institutionalized Nuclear Arms Control*, Policy Briefs on the Implementation of the Treaty on the Non-Proliferation of Nuclear Weapons, the Norwegian Institute of International Affairs, NUPI, Oslo, 2005

[7] Avner Cohen, *Israel and the Bomb,* Columbia University Press, New York 1998.

[8] The amendment provision of the NPT (art. VIII) requires a majority vote of all the parties, including the consent of the nuclear weapon parties and those other parties that are members of the IAEA Board of Governors on the day the amendment is circulated.

[9] On several occasions, North Korea has stated that it is ready to give up its nuclear capabilities if certain conditions are met. The six-nation talks in Beijing aim at a political solution that will bring it back into the fold of NNWSs. While the sincerety and realism of the talks are open to doubt, the case of North Korea is therefore different from that of India, Pakistan and Israel.

[10] Sverre Lodgaard, "The nuclear deal with India", paper for the Cranegie conference on non-proliferation, Washington, 7-8 November, 2005.

[11] The United States claims that a cut-off agreement is not verifiable. That suits Israel well. For Israel, allowing verification in Dimona may be a bigger concession than agreeing to a de facto cut-off. For Iran, however, which is subject to full scope safeguards, allows the IAEA to use the provisions of the additional safeguards protocol and has offered some extra transparency measures beyond the requirements of the protocol, it will be hard to accept an unverified Israeli freeze.

[12] Matthew Bunn and Anthony Weir, *Clarifying Statements on Securitng Nuclear materials in the presidential Debate*Managing the Atom Project, Harvard University, 6 October 2004.

The Russell-Einstein Manifesto in the 21st Century Nuclear Debate

by Rose Gottemoeller

We shall try to say no single word which should appeal to one group rather than to another. All, equally, are in peril, and, if the peril is understood, there is hope that they may collectively avert it. Russell-Einstein Manifesto, July 1955.

The peril of which the Russell-Einstein Manifesto spoke has shifted radically since the authors put these words down in 1955. While they focused on "the titanic struggle between Communism and anti-Communism" as the potential spur to world war and nuclear conflagration, they could not have foreseen that, thirty years on, Communism would be a spent force in world affairs. Equally, although terrorism was certainly a factor in mid-20th century conflicts, neither Einstein nor Russell could have foreseen that by 2005, terrorism (particularly nuclear terrorism) would have become the threat that consumed leading nations like no other.

Thus, all are still equally in peril, but the peril is radically different and infinitely more difficult to confront. In fact, the choice between war and peace alone is inadequate to the task if peace brings continued indifference or acquiescence to the economic, political, religious and cultural issues that give rise to terrorism. Governments are beginning to recognize this hard fact, and are taking early steps to address it.[1]

While these issues must be resolved over time, the immediate danger from nuclear weapons and nuclear explosive materials is one that can be confronted more immediately and to good results. Russia, which faced the disintegration of the Soviet nuclear arsenal in 1992, has already taken many steps in cooperation with the United States and other countries to protect, consolidate, and eliminate excess nuclear weapons and material. Although much more needs to be done to complete the process, this "cooperative threat reduction" program has shown the way for every country, because we are all responsible for keeping nuclear weapons out of the hands of terrorists.

The key question for policymakers is *not* whether nuclear weapons and materials can be protected, consolidated and eliminated. The processes to do so are

technically understood and highly feasible. The key question is whether nuclear weapons, and likewise fissile materials, are needed at all, for either military or civilian purposes. Their very existence creates the fuel for the nuclear terrorism threat. From this horrific problem comes today's debate about nuclear proliferation: do nuclear weapons and fissile materials have a continued purpose, and if they do, can those purposes serve non-proliferation goals?

This essay focuses on the debate as it exists today in the United States, where the question of whether new nuclear weapons are needed for the US arsenal has become active. This essay considers both sides of the debate: those who argue for the continued possession of nuclear weapons, and those who argue against it.[2] By exploring both sides, it is hoped that this essay will provide good food for thought and discussion. There can be no doubt that this author, however, is inclined against further emphasis on nuclear weapons and their use. The peril to mankind from nuclear terrorism is simply too great to contemplate anything other than steady reductions in and elimination of nuclear weapons and fissile materials.

The Debate

An irony of the 21st century nuclear age is that both those who embrace nuclear weapons, and those who call for their elimination, insist equally that their approach is necessary for a sound non-proliferation policy. In the U.S. case, both sides in the debate claim that the focus and content of U.S. nuclear weapons policy is directly relevant to the effectiveness of its non-proliferation policy. Those seeking to reduce the size and deployment of the arsenal maintain that such a path is critical to convincing other countries to halt the spread of nuclear weapons and abandon existing weapon programs. By contrast, advocates of expanding the role of nuclear weapons maintain that doing so will reduce proliferation by denying proliferators safe havens to pursue weapons development, and deterring general acquisition and use.

Despite their mutual concern over proliferation issues, there is little engagement or sustained discussion across this divide as to the best way to shape US nuclear policy to reinforce non-proliferation objectives. Those who favor expanding the role of nuclear weapons rarely even acknowledge concerns that such steps will undermine the non-proliferation regime, just as those favoring disarmament often ignore concerns about the potential risks of cheating or the imperfect verification of reductions.

And yet, the United States has a clear national interest in ensuring that nuclear weapons are never used. To that end, America's nuclear weapons policy has been largely consistent with an international norm against the spread and

use of nuclear weapons. The United States has maintained a downward trajectory in its nuclear arsenal, reducing the number of weapons in operational deployment and reserve. Since the early 1990s, it has also refrained from developing new nuclear weapons, and continues to maintain a moratorium on all nuclear tests. At the same time, it has continued to shrink the size of its nuclear weapons production complex. These actions are consistent with US commitments under Article VI of the Non-Proliferation Treaty (NPT), to reduce and eventually eliminate its nuclear weapons holdings.

However, the lack of a firm deadline for nuclear disarmament in the NPT has been a major source of concern. States whose cooperation is vital to implementing an improved non-proliferation agenda complain that neither the United States, Russia nor any of the other nuclear weapon states are moving quickly enough to reduce their nuclear arsenal. Nevertheless, for most of the past 20 years, the United States has continuously reduced its dependence on nuclear weapons. After the Cold War, this trend seemed likely to accelerate: with the demise of the Soviet Union, the United States had no need to balance or counter a nuclear peer competitor. It was, in effect, "freed up" to focus on an effective non-proliferation policy that would strengthen the norm against nuclear use.

The current debate, once again, is over how to carry out that process. Are new nuclear weapons in the US arsenal a necessary step, or do they make it more likely that more states will acquire nuclear weapons for themselves? In considering these possibilities, it should be clear that the link between non-proliferation, disarmament and the non-use of nuclear weapons is not a simple one. Clearly, had the United States unilaterally and quickly pursued disarmament during the Cold War to ensure compliance with the Non-Proliferation Treaty, the risk of nuclear use might have been increased. Likewise, the extended nuclear deterrent of the United States has helped to reduce or eliminate the need for other countries to create nuclear arsenals of their own.

New weapons, new missions

The challenge today is to ensure that US nuclear policy does not conflict with the goal of nuclear non-use. One view on how to accomplish this goal involves developing new types of nuclear weapons.

Proponents maintain that if the United States builds and deploys such weapons, states and terror groups will be deterred from seeking and using weapons of mass destruction to challenge the United States. They would have to calculate that if they did so, the United States would have an increased ability to respond with nuclear weapons. Thus, according to this argument, new US nuclear weapons would enhance deterrence and thereby the goal of non-use.

Proponents also argue that no President will ever decide to use existing US nuclear weapons, because they were designed for an all-out attack against Cold War adversaries and their destructive power is too great for more limited missions. In their view, the President would be self-deterred by the destructive power of the weapons in the current US arsenal. Therefore, they conclude, the United States does not today have a reliable nuclear deterrent. To remedy this problem, the Cold War arsenal must be replaced with new, more useable nuclear weapons, especially with the characteristic of low yield. This step would once again enhance deterrence.

There is, of course, an opposing view. The opponents stress that one of the hallmarks of a sound national security strategy is a measure of ambiguity about leadership decision-making in time of crisis. In their view, to claim with certainty that a President would not dare to use nuclear weapons because of this or that characteristic deals a blow to US national security. The claim that the President *would not act* weakens deterrence, not the weapons themselves. Indeed, they argue, the weapons in the current US arsenal have many different characteristics, including low yield. These give the President multiple options to consider, as long as their targeting is sufficiently flexible.

Another frequent argument in favor of new nuclear weapons is that they can be used in a unique military mission that will effectively counter proliferation: bunker busting. In essence, if the United States uses bunker-busters in a limited mission such as destroying buried chemical or biological sites, the weapons will enhance deterrence, dissuading adversaries from pursuing such capabilities. Proponents argue that other countries will recognize and accept the compelling nature of this mission. Therefore, the norm of non-use will not be undermined.

However, opponents counter that there are technical limits to the performance of projectiles hitting the surface of the earth at high velocity. No matter how they are hardened or what material they hit, they will only penetrate for a limited distance. This limitation would result in a nuclear explosion relatively near the surface, which would likely produce a large measure of radiation contamination at the surface and would unlikely destroy the deeply buried target. In other words, these experts argue, high-velocity earth penetration is limited by physical principles, regardless of whether the weapon is nuclear- or conventionally-armed.[3]

A third argument in favor of new nuclear weapons is that they would not have an impact on the decisions of other countries. Proponents of this view assert that nothing the United States does is relevant to decisions that other countries make about nuclear weapons. Their decisions are reached on the basis of their own regional security situation. A prime example of this phenomenon is the

behavior of India and Pakistan over Kashmir. If the United States enhances the role of nuclear weapons in its armed forces, the argument goes, other countries will not necessarily follow. They will look instead to what their regional adversaries are doing.

The opposing view focuses on the idea that as the world's leading power, the United States cannot pretend that other countries take no notice of its decisions. The US would cease to be a world leader if this were the case. Indeed, India and Pakistan made constant reference to the nuclear capabilities of the United States and other nuclear weapon states under the NPT in pursuing their own programs. Opponents argue that although other countries might choose not to follow a US decision to build new nuclear weapons, they will certainly conclude that they should seriously consider the option, since the world's leading power has decided it still has need of them.

A final argument in favor of new nuclear weapons is one that has gained particular momentum in 2005. According to its proponents, the weapons that were designed and built during the Cold War are difficult to maintain, so much so that their reliability and safety will be increasingly in question, especially absent testing. Likewise, the cadre of scientists and technicians who designed and built these weapons is retiring, so the United States no longer has the expertise at hand to maintain the weapons. New weapons should be designed and built (and possibly tested) that take advantage of new materials and techniques, for they will be easier to maintain. This process will also train and bring to professional maturity a new generation of weapon experts.[4]

Opponents to this argument express concerns that it is not giving enough credit to existing US capabilities. They assert that the weapons in the current US arsenal were built to be robust and reliable. They were also designed in such a way that their component parts can be switched out and reconstructed with more modern materials and methods. Therefore, in this view, current warheads are by no means "static" technology, trapped in the Cold War era. They can be improved for reliability and safety through the maintenance process.

Moreover, opponents of new weapons argue that the system in the US weapons laboratories *already* maintains the expertise of the scientists and technicians responsible for the stockpile. The scientists, however, are not limited to working only on the weapons. They are exploring a much broader range of scientific questions that are of use not only to the nuclear arsenal, but to larger US scientific goals. In this way, the United States maintains its scientific preeminence and is prepared in the case of new nuclear and military threats to this country and its allies.

Non-use imperative

Whether for or against, both sides in the debate must stand against a hard reality: the United States has a direct incentive to do its utmost to ensure that all future conflicts and adversaries remain non-nuclear. Only weapons of mass destruction and especially nuclear weapons can endanger the dominance of US conventional forces.

Thus, the overriding US interest in non-use of nuclear weapons is closely tied to the unrivaled effectiveness of US conventional forces. If nuclear weapons spread to many countries and regions, and the barriers to use are lowered, then the United States will have greater difficulty exploiting this effectiveness. The international community in turn would lose the benefits that the United States can provide as a guarantor of international security.

Any argument in support of new weapons and missions must make an iron-clad case that they are worth the risks. If there are any doubts about the balance of risks and benefits, then the prudent course is to protect the effectiveness of US conventional forces. Thus, instead of contemplating new nuclear weapons and missions, the United States should concentrate on ensuring its conventional dominance. This is the overriding US national security interest. The United States, in short, must embrace a non-use imperative.

As the United States leads by example in reducing its nuclear forces, other countries will receive a strong impetus to pursue sound non-proliferation policies for themselves.

To achieve this, the US should pursue a clear policy that the only reasonable use of nuclear weapons is to deter or retaliate directly against the use of nuclear weapons by others. This policy should apply to the United States and its armed forces, wherever deployed, and to US allies. Nuclear weapons have no other reasonable use.

In pursuing this policy, the United States must sustain two simultaneous goals, continuing to reduce the numbers of its nuclear weapons, while maintaining an effective, reliable nuclear deterrent as long as nuclear threats remain in the world. This balanced approach is the best hope that the United States has of ensuring that nuclear weapons are never used, and it is the most reliable spur to nuclear arms reductions. In a political context, reductions have only been accomplished against the backdrop of a strong national commitment to well-maintained nuclear forces.

If both goals are pursued together, then US non-proliferation policy also benefits. As the United States leads by example in reducing its nuclear forces, other countries will receive a strong impetus to pursue sound non-proliferation policies for themselves.

Nuclear reform[5]

The proponents of new nuclear weapons have raised some valid concerns that highlight the need for reform in US nuclear policy. Reform, in fact, is needed to bolster the non-use imperative: the President should have sufficient flexibility to act if he decides that he must use nuclear weapons, but he should also have the maximum capability to achieve US national security goals without resorting to nuclear weapons. Again, US policy must proceed simultaneously along two tracks, both vital.

More options in the *targeting* of both nuclear and conventional weapons would help to achieve the goal of greater flexibility for the US President. US nuclear weapons policy has already begun to move away from the Single Integrated Operational Plan, or SIOP, which was designed primarily for large-scale retaliatory attacks against Russian targets. Today, although Russia deploys more than 5,000 strategic nuclear weapons against the United States, Russia is not understood to be an 'immediate contingency' against which US nuclear forces are deployed. This is a major change from the Cold War years.

Likewise, the US Strategic Command has been tasked to develop more non-nuclear strike missions. US long-range bombers are being equipped and trained for such missions, and four *Ohio* class submarines are being converted to carry non-nuclear cruise missiles. These steps are being undertaken to create a 'new triad,' one devoted not wholly, as in the past, to nuclear weapons, but instead emphasizing equally non-nuclear missions and highly capable command and control. This is a positive trend that provides the President with more flexibility.[6]

Another issue to consider in the pursuit of Presidential flexibility is *the operational deployment of nuclear weapons*. The United States has long maintained an option of preemptive attacks, whether nuclear or conventional, to address threats against its territory and survival. However, during the Cold War, this policy led to dependence on rapid response with nuclear weapons, especially *launch on warning* of attack.

To this day, the US and Russian strategic nuclear arsenals are configured for rapid response, an approach that seems unnecessarily risky when an accidental or unauthorized launch of nuclear weapons is more likely than a massed nuclear attack between two nuclear superpowers. As former US Senator Sam Nunn has said, "Incredibly, eleven years after the so-called end of the Cold War, the decision time of our leaders has not changed appreciably from what it was during the peak of the tensions."[7]

Thus, although Russia is no longer considered an 'immediate contingency' for targeting purposes, the dependence on rapid response options continues to

govern aspects of operational deployment in both Russia and the United States. This Cold War vestige, in turn, hampers the President's flexibility. In the worst, horrific case, he might be forced to launch on warning of an attack, even if the incoming Russian missile were launched by accident or in an unauthorized way. In a less extreme case, he might be constrained from using a weapon platform in a conventional campaign, because it remained tied to a prompt nuclear attack mission. Moreover, if US operational deployments continue to focus on Russia, then the President might find that US strategy does not take adequate account of the need to deter small nuclear powers that might threaten the US or its allies with attacks of a few nuclear weapons.

To give the President more flexibility in this regard, the United States should work with Russia to lengthen the fuse on both countries' nuclear weapons. US and Russian diplomats and military experts should more energetically implement focused and transparent measures to pull the two countries back from their Cold War operational deployments. Detailed proposals have been advanced in several forms, including studies by the RAND Corporation and the Institute of the USA and Canada in Moscow, both of which have made practical recommendations on how to achieve this important goal.[8]

This case for nuclear reform and more Presidential flexibility *is not* an argument for new nuclear weapons. As noted above, the President should have sufficient flexibility to act if he must decide to use nuclear weapons, but he should also have the *maximum* capability to achieve US national security goals without resort to nuclear weapons. In this case, nuclear reform and the non-use imperative go firmly hand-in-hand.

Conclusion

The United States has taken some healthy steps in recent years to deemphasize nuclear weapons in US military strategy. A strong growth in strategic conventional missions in the US Strategic Command is an excellent example of this trend. These steps not only bolster US conventional superiority, but also give the President enhanced flexibility for addressing grave crises with conventional weapons alone. In this way, they support the imperative against the use of nuclear weapons, strengthening the international norm against them.

Proponents of new nuclear weapons must make an iron-clad case that this trend is worth disturbing. In particular, if a new US nuclear weapon would in any way influence other countries to acquire their own nuclear weapons, this must be taken as a blow to the effectiveness of US conventional forces.

But in the end, we must recall that the threat today is one that cannot be

confronted with military force alone. When the peril to mankind is nuclear terrorism, many tools must be turned to the task. All over the world, nuclear weapons and fissile materials must be protected to a very high standard, as rapidly as possible. In addition to protecting them, we must continue to steadily reduce and eliminate our nuclear capabilities. And we must take on terrorism directly, reaching out to troubled countries and regions with economic aid and support for political reform. The great difficulty of this task can be seen today, as we contemplate the continued chaos in Afghanistan and Iraq. Nevertheless, we must try, or we will, at some time and place we cannot predict, succumb to nuclear terror.

Bertrand Russell and Albert Einstein made this point beautifully at the close of their manifesto, although it warned against a different threat:

> ***There lies before us, if we choose, continual progress in happiness, knowledge and wisdom. Shall we, instead, choose death, because we cannot forget our quarrels? We appeal, as human beings, to human beings: Remember your humanity, and forget the rest.***

Notes

[1] In July 2005, for example, the Group of Eight Industrialized Countries (G-8), under the Presidency of the United Kingdom, devoted their Summit at Gleneagles, Scotland to the problems of Sub-Saharan Africa. The United States, for its part, launched an initiative in 2004 to address the issues of poverty and lack of political freedom in the Middle East. For more on the G-8 initiative, see www.g8.gov.uk; sub-headings Policy Issues and then Africa. For more on the US Mid-East initiative, see http://mepi.state.gov/mepi/. Both websites were accessed on June 7, 2005.

[2] This essay focuses on nuclear weapons and fissile materials used for nuclear weapons. It does not cover the debate over the use of fissile materials for other military or civilian purposes. For discussion of those issues, see George Perkovich, Jessica T. Mathews, Joseph Cirincione, Rose Gottemoeller, and Jon B. Wolfsthal, *Universal Compliance: A Strategy for Nuclear Security*, Carnegie Endowment for International Peace, March 2005; available at www.CarnegieEndowment.org/strategy (accessed June 9, 2005).

[3] A useful study on this topic is "Effects of Nuclear Earth-Penetrator and Other Weapons," Committee on the Effects of Nuclear Earth-Penetrator and Other Weapons, Division on Engineering and Physical Sciences, National Research Council of the National Academies of Sciences, 2005, which may be found at www.nap.edu.

[4] A good statement of this position can be found in the testimony of Linton Brooks on April 4, 2005, http://www.nnsa.doe.gov/docs/2005-04-04_Brooks_SASC_testimony.pdf.

[5] The discussion in this section is drawn from George Perkovich, et. al., *Universal Compliance: A Strategy for Nuclear Security*, Carnegie Endowment for International Peace, March 2005, available at www.CarnegieEndowment.org/strategy (accessed June 9, 2005).

[6] For a description of such non-nuclear strike missions and the 'new triad,' see the briefing by Assistant Secretary of Defense J.D. Crouch on the Nuclear Posture Review, which may be found in "Special Briefing on the Nuclear Posture Review," Department of Defense, January 9, 2002, available at www.defenselink.mil/transcripts/2002/t01092002_t0109npr.html (accessed January 12, 2005).

[7] Sam Nunn, "Address to the Carnegie International Non-Proliferation Conference," Remarks in Washington, DC, June 22, 2004, available at www.ceip.org/files/projects/npp/resources/2004conference/speeches/nunn.htm (accessed Jan. 12, 2005).

[8] David E. Mosher, Lowell H. Schwartz, David R. Howell, and Lynn E. Davis, "Beyond the Nuclear Shadow: A Phased Approach for Improving Nuclear Safety and US-Russian Relations," RAND Corporation, 2003, available at www.rand.org/publications/MR/MR1666/ (accessed Jan. 12, 2005); the briefing by Sergei Rogov, Director of the Institute of the USA and Canada, may be found at www.ceip.org/files/events/events.asp?EventID=706 (accessed Feb. 7, 2005).

How to Rebuild the Nuclear Nonproliferation Regime

by Nobuyasu Abe

Failed 2005 NPT Review Conference: a missed opportunity

In spite of the strenuous efforts by the President of the Conference, Ambassador Sergio Duarte, and many others who were alerted by the dire predictions about the prospects for agreement, the 2005 NPT Review Conference that ended on May 27 failed to produce a substantive outcome. It missed an important opportunity to renew the commitment by the nuclear weapon states for the ultimate elimination of all nuclear weapons. It also failed to address such urgent nonproliferation issues as the universalization of the Additional Protocol to the existing International Atomic Energy Agency (IAEA) Safeguards mechanism or the new security concerns about the control of nuclear enrichment and reprocessing facilities, as well as the equipment and technology relating to the fuel cycle. The Conference on Disarmament in Geneva did not receive any guidance about the way in which it might address the long-awaited negotiations on a Fissile Material Cutoff Treaty (FMCT), nor on such issues as Negative Security Assurances (NSA) or the long-standing question of complete nuclear disarmament. The Review Conference could not even express its dismay at the announced withdrawal of North Korea from the Treaty. If the State Parties, as the collective guardians of the Treaty, are in effect silent on a range of such important issues, it is, in my view, a measure of the difficulties facing both the NPT and the wider international community.

Silence Speaks Volumes

While the stalemate on procedural issues such as the dispute over the substantive agenda of the Review Conference or subsidiary bodies (e.g. the Sub-committees on specific questions) were all symptoms of failure, many attributed the inability of the Conference to reach a substantive outcome to the underlying confrontation between those who put nuclear disarmament first and those who attach greater priority to nonproliferation. The former position was very often asserted by the members of the Group of Non-Aligned and Other States (NAM) who represent the majority of the Non-Nuclear Weapon States, while the latter

argument was strongly pressed by the Nuclear Weapon States and the Western group of countries. The confrontation was crystallized in the dispute over the continuing relevance and importance of the 2000 Review Conference. On one hand, the US considered that document to be outdated after the recent dramatic changes to the international scene. On the other hand, the NAM did not want to retreat from the agreement reached in 2000. Egypt in particular was frustrated by the lack of progress on the Middle East question and wanted to preserve the 2000 outcome at all costs.

At the beginning of the Review Conference the UN Secretary-General urged the participants to work seriously on both nuclear disarmament and nonproliferation, and specifically called upon them not to hold either issue hostage to the other. Unfortunately his advice was not heeded and the Review Conference fell into the trap he had expressly warned against.

The Way Forward: The September Summit

Whilst the failure of the NPT Review Conference is deplorable, the world does not stand still and we cannot afford to stand idly by. We need to take practical steps to ensure the continuing health and strength of the NPT. This remains a matter of central importance. The urgent international concern about the imminent proliferation risk is still there. The loophole brought to light by discovery of the Dr. A.Q. Khan network of illicit supply has to be closed quickly. North Korea declared it will pursue building up its "deterrence." In Iran, hardliners are threatening to withdraw from the NPT unless that country's long term nuclear power program is endorsed in the negotiations with the EU. Strategic nuclear warheads are still numbered in the thousands and remain on hair-trigger alert while "Non-strategic" nuclear weapons remain in vast quantities.

One of the first opportunity for world leaders to address the serious concerns about nuclear proliferation will present itself in September when Heads of State and Government assemble in New York to commemorate the 60th anniversary of the founding of the UN. Secretary-General Kofi Annan recommended last March a series of measures for adoption at the September Summit in his report to the General Assembly titled "In Larger Freedom." I strongly hope that the September Summit will acknowledge the importance of the challenge we face in the area of disarmament and nonproliferation, and I have been working hard to that end. Some of the possible measures that I have raised include the following:

- Reaffirmation of the commitment for nuclear disarmament under Article VI of the NPT and concrete steps in that direction.

- Commitment to uphold the moratorium on nuclear test explosions (pending the entry into force of the Comprehensive Nuclear-Test-Ban Treaty).
- Agreement to start the negotiations on a Fissile Material Cut-off Treaty, and bring them to an early conclusion.
- Adoption of the Model Additional Protocol as the standard for verifying compliance with Article III of the NPT.
- Commitment to explore multilateral options for improved controls over the sensitive parts of the nuclear fuel cycle, consistent with the NPT principles of the right to peaceful use, the obligations for nonproliferation, and providing assurances both of supply of services and nonproliferation,
- Reaffirmation of the commitments to negative security assurances.

I recognize that some of these issues are exactly those that led to deadlock at the NPT Review Conference. I am equally familiar with the legitimate and strongly-held views of some of the member states, as well as divergent policy positions among them. But the setting for the September Summit will be different. I hope the leaders who will assemble for the Summit will find mutually agreeable ways to positively express their determination to work for nuclear disarmament and nonproliferation rather than simply saying 'no' to each other.

I should not have to repeat the special responsibility of the five Nuclear Weapon States under the NPT. They could, for example, in my view, express their willingness prior to the September Summit to work on nuclear disarmament and nonproliferation. Were it to happen, this would give a huge boost to the world's efforts in this direction. They might consider a simple treaty or a joint declaration among themselves to solidify the existing *de facto* moratorium on the production of fissile material.

Break the Deadlock

A number of measures proposed for nuclear disarmament and nonproliferation are proposed as subjects for negotiation in the Conference on Disarmament in Geneva – indeed they have been for some time now. The entire issue of nuclear disarmament, Fissile Material Cut-off Treaty, negative security assurance, and PAROS (the Prevention of an Arms Race in Outer Space), to name a few, are the topics on the table in Geneva. But to move these issues forward the Conference has to break the deadlock on its substantive programme of work. The current disarmament mindset appears to be one of avoiding progress as though it were an illness. The Conference on Disarmament has been in its grip for many years now. It has also affected the Disarmament Commission in New York. The NPT Review Conference is its latest victim. Unfortunately the failure to reach

agreement at the NPT Review Conference may not make it any easier to break the deadlock in the Conference on Disarmament. But, in my view, precisely because the NPT review process proved to be unsuccessful, the Conference on Disarmament has to work harder to achieve a new momentum in dealing with these urgent issues of concern.

The multilateral process is the best way to address nuclear disarmament and nonproliferation. But, it is important to acknowledge that the challenge of proliferation continues to be met by like-minded States in other, perhaps more practical ways, for that may indeed be an unavoidable consequence of the latest developments at the Review Conference. Its inability to set an agenda for action leaves the field open to interested States with particular nonproliferation concerns to pursue them via other avenues such as the Proliferation Security Initiative and Nuclear Suppliers Group.

Other Venues for Action

There are other venues where disarmament and nonproliferation efforts may be pursued until the NPT Review Process starts working again.

IAEA:

The IAEA is an important forum to discuss many aspects of the NPT implementation. The IAEA is expected to follow up the work of the Expert Group on Multilateral Approaches to the Nuclear Fuel Cycle which submitted a report to the IAEA Director-General last February. That report proposed potential multilateral options to improve controls over the proliferation of sensitive parts of the nuclear fuel cycle while preserving assurances of supply and services for nuclear energy exploitation. The IAEA has to continue its effort to universalize the Comprehensive Safeguards Agreement and the Additional Protocol. The IAEA is also expected to continue requiring strict compliance with its Safeguard agreements.

CTBT-EIF Conference:

The Fourth Conference on Facilitating the Entry-Into-Force of the CTBT will be held in New York from 21 to 23 September. The conference is intended to identify measures that would help expedite the entry into force of the CTBT. Because it is a gathering of high level government officials from countries which are very committed to the cause of nuclear disarmament and non-proliferation, the conference may provide a unique opportunity. Those who are eager to promote these causes informally can use the conference to search for the best

ways to support nuclear disarmament and nonproliferation in today's difficult circumstances.

Security Council Resolution 1540

The full implementation of Security Council resolution 1540 would greatly help close the gaps existing in the nonproliferation regime. The 1540 Committee of the Security Council is currently examining the national reports submitted by the UN Member States. There are many measures to be taken to establish domestic laws and regulations to criminalize activities concerning proliferation of WMD to non-state actors and to establish and tighten export and border controls.

Workshops and seminars can be usefully organized to promote the implementation of such measures. The Committee may strengthen its work to offer technical assistance to those Member States which are most in need of practical support.

US-Russian Initiative

There are a number of concrete steps which, I believe, the US and Russia could voluntarily take towards nuclear disarmament consistent with their declared goal of gradual nuclear reduction, such as:

- Unilateral declaration of the intent for further deep reductions in arsenals, strategic and non-strategic
- Bolstering the infrastructure to facilitate more rapid dismantlement of nuclear weapons
- Bilateral process to build on START and SORT resulting in a framework for the post 2010 period
- Increased transparency and irreversibility
- Implementation of measures to minimize the risk that nuclear weapons would ever be used. These could include a reduction of operational status: confidence building and a diminishing role for nuclear weapons in security policy.

NPT Review Process: Rethink the Working Mode of the Review Conference

Since the 2005 NPT Review Conference ended without agreement, there will be no formal follow-up work or other scheduled international activity under the NPT framework until the first Preparatory Committee meets in 2007 in preparation for the 2010 Review Conference. There are, nevertheless a number of things concerned Participating States may do informally during this interim period:

- Salvage and save the many good proposals made during the Review Conference for future work. This could be done by one or more willing States, or by research institutes.
- Carry out an assessment of the rigid working modality of the NPT Review Process, especially the strict consensus rule, in order possibly to ensure the success of future Review Conferences. It may also help if we review the geo-political grouping of the Review process and the way in which they function.

Conclusion

In conclusion, I believe that it will be important to draw the correct lessons from the setback undoubtedly suffered at the 2005 Review Conference. The basis for future success lies in the analysis we make now and the actions we then take forward. The outlook is far from being uniformly bleak. I detect continuing and strong commitment to the international norm established by the NPT from the vast majority of its State Parties. International action against proliferation continues to be conducted at an enhanced level whether it be through the IAEA Additional Protocol, UNSCR 1540, the Proliferation Security Initiative or the work of the Nuclear Suppliers Group. All of these activities are ultimately founded on the nonproliferation bedrock that is the Nuclear Nonproliferation Treaty. All the more reason then for those of us who are convinced that the multilateral approach to nuclear matters offers the only long-term way forward, to look at the prescriptions for immediate progress that I have proposed.

Notes

[1] The Views expressed here are personal views of the author and do not necessarily reflect those of the United Nations Secretariat.

[2] The participants of the NPT Review Conferences traditionally divide themselves into three geo-political groups; Western European and Other States, Eastern European States and the Non-Aligned and Other States.

Bin Laden And Hiroshima

by Pervez Hoodbhoy

The decision to incinerate Hiroshima and Nagasaki was not taken in anger. White men in grey business suits and military uniforms, after much deliberation, decided the US "could not give the Japanese any warning; that we could not concentrate on a civilian area; but that we should seek to make a profound psychological impression on as many of the inhabitants as possible… [and] the most desirable target would be a vital war plant employing a large number of workers and closely surrounded by workers' houses."[1] They argued it would be cheaper in American lives to release the nuclear genie. Besides, it was such a marvelous thing to show Soviet leader Josef Stalin.

Headlines like "Jap City No More" soon brought the news to a joyous nation. Crowds gathered in Times Square to celebrate; there was less of the enemy left. Rarely are victors encumbered by remorse. President Harry Truman declared: "When you have to deal with a beast you have to treat him as a beast. It is most regrettable but nevertheless true."[2] Not surprisingly, six decades later, even American liberals remain ambivalent about the morality of nuking the two Japanese cities. The late Hans Bethe, Nobel Prize winner in physics of Manhattan Project fame and a leading exponent of arms control, declared that "the atom bomb was the greatest gift we could have given to the Japanese"[3].

Even as the United States dusted off its hands and moved on, elsewhere the radioactive rubble of the dead cities spawned not only a sense of dread, but also an obsessive desire for nuclear weapons. Stalin raced ahead with his program, while Charles de Gaulle conceived his "force de frappe". Mao Tse Tung quietly decided that he too wanted the Bomb even as he derided it as "a paper tiger". In newly independent Israel, Prime Minister David Ben Gurion apparently "had no qualms about Israel's need for weapons of mass destruction," writes Avner Cohen, the historian of Israel's nuclear bomb. Ben Gurion ordered his agents to seek out East European Jewish scientists who could "either increase the capacity to kill masses or to cure masses".[4]

The wind blew the poisonous clouds of fear and envy over other third world countries as well: In 1948, while arguing to create India's Department of Atomic Energy, Prime Minister Jawaharlal Nehru told parliament, "I think we must

develop [nuclear science] for peaceful purposes." But, he added, "Of course, if we are compelled as a nation to use it for other purposes, possibly no pious sentiments of any of us will stop the nation from using it that way."[5] Just three years after Hiroshima and Nagasaki, those "other purposes" were all too clear.

Days after Pakistan's nuclear tests in May 1998, Japan invited the country's foreign minister to visit Hiroshima's peace museum. The minister was visibly moved after seeing the gruesome evidence of mass devastation. His reaction: We made our nukes precisely so that this could never happen to Pakistan.

One wonders what bin Laden – and others of his ilk – learnt from Hiroshima. The *New York Times* reported that before September 11 the US had intercepted an Al-Qaeda message that Bin laden was planning a "Hiroshima" against America.[6] In a later taped message, released just before the US attack on Afghanistan, Bin Laden called up the image of the bombing of Japan, claiming: "When people at the ends of the earth, Japan, were killed by their hundreds of thousands, young and old, it was not considered a war crime; it is something that has justification. Millions of children in Iraq is something that has justification."[7]

George Bush's "Nuclear Posture Review 2002" identifies as possible targets China, North Korea, Iraq, Iran, Syria and Libya.

One important bin Laden supporter was perfectly clear about how he felt. In a recent and widely watched nationally televised debate between myself and General Hameed Gul—an influential Islamist leader and former head of the country's powerful intelligence agency (ISI)—my opponent snarled at me: "Your masters (that is, the Americans) will nuke us Muslims just as they nuked Hiroshima; people like you want to denuclearize and disarm us in the face of a savage beast set to devour the world". Gul then vented his anger at those – like myself – who oppose Pakistan's Bomb as agents of America, apostates, enemies of Islam and the Pakistani state.

I will not burden readers with my replies to this extremist general. But he was making a point that resonates around the globe and puts on the defensive all those who oppose nuclear weapons on moral grounds. The United States has bombed 21 countries since 1948, and recently killed tens of thousands of people on the pretext of chasing weapons of mass destruction in Iraq. It claims to be a force for democracy and rule of law despite a long history of supporting the bloodiest of dictators and rejecting the International Criminal Court. And now it threatens its adversaries – those with and without nuclear weapons – with nuclear attack. George Bush's "Nuclear Posture Review 2002" identifies as possible targets China, North Korea, Iraq, Iran, Syria and Libya. The review also recommended new facilities for the manufacture of nuclear bombs, research into bunker busters, a new ICBM in 2020, and much more.

Imperial America on the move

With 12 battle carrier groups and hundreds of military bases spread around the world, the US currently will spend $455 billion on its armed forces in 2005, with another $82 billion to be spent on the wars in Iraq and Afghanistan. This is more than the total sum spent by the next 32 countries down the list, and is close to 50% of total world military spending. US military doctrines have shifted away from deterrence to pre-emption, unilateral military intervention, and simultaneously fighting several local wars overseas. The US military has put in place a 2004 "Interim Global Strike Alert Order" from Donald Rumsfeld requiring it to be ready to attack hostile countries that are developing weapons of mass destruction, specifically Iran and North Korea. The military claims to be capable of carrying out such attacks within "half a day or less" and to use nuclear weapons for this purpose.[8]

There are demands from the US Air Force for authority to put weapons in space. A former Secretary of the Air Force explained ''We haven't reached the point of strafing and bombing from space… nonetheless, we are thinking about those possibilities."[9] Full spectrum dominance – in land, sea, air, and space – is necessary to achieve the goal of total planetary control.

US foreign policy in the post Cold-War world owes much to "The Project for the New American Century" (PNAC), a Washington-based neo-conservative think-tank founded in 1997. PNAC was clear that the US must rule the world: " [the new world order] must have a secure foundation on unquestioned US military preeminence ...The process of transformation is likely to be a long one, absent some catastrophic and catalyzing event – like a new Pearl Harbor."[10] That serendipitous Pearl Harbor-like event came on 11 September, 2001.

After 9/11 there was no lack of spokesmen for the American Empire. In unabashedly imperial language, Zbigniew Brzezinski, who initiated the anti-Soviet jihad in Afghanistan, writes that the US should seek to "prevent collusion and maintain dependence among the vassals, keep tributaries pliant and protected, and to keep the barbarians from coming together."[11]

To keep the "barbarians" at bay, Pentagon planners have been charged with the task of assuring American control over every part of the planet. Major (P) Ralph Peters, an officer responsible for conceptualizing future warfare in the Office of the Deputy Chief of Staff for Intelligence, is clear about why his country needs to fight:[12]

> *We have entered an age of constant conflict.*
>
> *We are entering a new American century, in which we will become still wealthier, culturally more lethal, and increasingly powerful. We will excite*

hatreds without precedent.

There will be no peace. At any given moment for the rest of our lifetimes, there will be multiple conflicts in mutating forms around the globe. The de facto role of the US armed forces will be to keep the world safe for our economy and open to our cultural assault. To those ends, we will do a fair amount of killing.

Now, reasonably speaking, "a fair amount of killing" can be done rather well by the US with its fuel-air bombs, conventional explosives, artillery shells, and so forth. And so it is difficult to understand why the US should hunger for nuclear weapons in addition to all else that it has. Why does it want to goad other nations towards also craving nukes? And what does it seek to achieve by announcing that it may, if need be, target even non-nuclear adversaries?

The answer is obvious: imperial hubris, runaway militarism, and the arrogance of power. Nuclear weapons, in the revised US view under George W. Bush, are now to be viewed as weapons for fighting wars with. They may even be used as a first-strike – no longer are they to be thought of as weapons of last resort.

But there is a downside to this. And the long-term consequences will not be to the advantage of the US because the nuclear monopoly is breaking down. The making of atomic weapons – especially crude ones – has become vastly simpler than it was at the time of the Manhattan Project. Basic information is freely available in technical libraries throughout the world and simply surfing the internet can bring to anyone a staggering amount of detail. Advanced textbooks and monographs contain details that can enable reasonably competent scientists and engineers to come up with "quick and dirty" designs for nuclear explosives. The physics of nuclear explosions can be readily taught to graduate students. By stealing fissile materials present in the thousands of ex-Soviet bombs marked for dis-assembly, or even a tiny fraction of the vast amounts of highly enriched uranium and separated plutonium present in research reactors and storage sites the world over, it is unnecessary to go through complex processes for uranium enrichment or plutonium reprocessing.

Can the Islam-US Clash go nuclear?

Anger in Muslim countries at the United States has never been higher than today: torture and prisoner abuse in Abu-Ghraib and Guantanamo by American interrogators, and instances of Qur'an desecration have added to already existing resentments, most particularly the unequivocal US support for Israeli occupation of Arab lands. The desire for an atomic weapon to seek vengeance

– utterly immoral, foolish and suicidical though it is – is not limited to extremists. The Islamic Bomb is a concept that is becoming ever more popular.

The notion of an Islamic Bomb had existed long before 9/11. Addressing posterity from his death cell in a Rawalpindi jail, Zulfikar Ali Bhutto, the architect of Pakistan's nuclear program, wrote in 1977: "We know that Israel and South Africa have full nuclear capability. The Christian, Jewish, and Hindu civilizations have this capability. The communist powers also possess it. Only the Islamic civilization was without it, but that position was about to change."

Another Muslim leader stressed the need for a bomb belonging collectively to Islam. Addressing an Islamic conference in Teheran in 1992, the Iranian vice-president, Sayed Ayatollah Mohajerani said, "Since Israel continues to possess nuclear weapons, we, the Muslims, must cooperate to produce an atomic bomb, regardless of UN efforts to prevent proliferation."

In the celebrations following the 1998 nuclear tests, the Jamaat-e-Islami paraded bomb and missile replicas through the streets of Pakistani cities. It saw in the Bomb a sure sign of a reversal of fortunes and a panacea for the ills that have plagued Muslims since the end of the Golden Age of Islam. In 2000, I captured on video the statements of several leaders of jihadist, right-wing political parties in Pakistan – Maulana Khalil-ur-Rahman and Maulana Sami-ul-Haq – who also demanded a bomb for Islam.[13]

Nonetheless, it is impossible to conceive of any Muslim state declaring that it has an "Islamic Bomb" that would be used for defense of the "umma"[14] against the United States or Israel (but it is worth recalling that this kind of "extended deterrence", as it was called, was practiced aggressively by both superpowers in the Cold War, including during the Cuban Missile Crisis). From time to time, the media reports the speculation that Pakistan would provide a "nuclear umbrella" for Arab countries in a crisis. But nothing in the history of Pakistan has shown a substantial commitment to a pan-Islamic cause. Pakistan, so far the only Muslim nuclear state, is unlikely to risk devastating retaliation from Israel or the United States if it did attempt to provide nuclear weapons for use in the Middle East. Its earlier clandestine nuclear cooperation with Iran – officially attributed to the antics of Dr. Abdul Qadeer Khan and his network – came to an end a decade ago. This was followed by similar sales to Libya that continued until 2003 and the exposure of the network, leading to a public confession by A.Q. Khan in early 2004.

In my opinion, the danger of a nuclear conflict comes not from Muslim states, but from radicalized individuals within the states. In the post-September 11 period, although Pakistan's military government insisted that there was no

danger of any of its nuclear weapons being taken for a ride by some radical Islamic group, it wasn't taking any chances. Several weapons were reportedly airlifted to various safer, isolated, locations within the country, including the northern mountainous area of Gilgit. This nervousness was not unjustified – two strongly Islamist generals of the Pakistan Army, close associates of General Musharraf, had just been removed. Dissatisfaction within the army on Pakistan's betrayal of the Taliban was (and is) deep; almost overnight, under intense American pressure, the Pakistan government had disowned its progeny and agreed to wage a war of annihilation against it.

Fears about Pakistan's nukes were subsequently compounded by revelations that a high-ranking nuclear engineer, Syed Bashiruddin Mahmood, and a materials specialist, Chaudhry Majid, had journeyed several times into Afghanistan in 2000. Both scientists were well known to espouse radical Islamic views. Mahmood had even been photographed with Osama Bin Laden.

Preventing doomsday

Today, the United States rightly lives in fear of the Bomb it created because the decision to use it—if and when it becomes available—has already been made. But this time around business suits will be absent. Pious men with beards will decide when and where on American soil atomic weapons are to be used. Shadowy groups, propelled by fanatical hatreds, scour the globe for fissile materials. They are not in a hurry; time is on their side. They are doubtless confident they will one day breach Fortress America. Shall it will be by the end of the century? Sooner?

The possibilities for nuclear attack are not limited to the so-called suitcase bomb stolen from the arsenal of a nuclear state. In fact, this is far more difficult than the use of improvised nuclear devices fabricated from highly enriched uranium, constructed in the very place where they will eventually be detonated. Still more likely is an attack on a vulnerable nuclear reactor or spent fuel repository.

Some nuclear weapon experts (who I am not at liberty to name) privately believe that it is not a question of *if* but *when* the attack is to happen. This may be too pessimistic, but obviously tight policing and monitoring of nuclear materials (and rapid reduction of stockpiles) and nuclear weapons knowledge must be the first step. There should not be the slightest delay in moving on this. But this is far from sufficient. If nuclear weapons continue to be accepted by nuclear weapon states as legitimate instruments of either deterrence or war, their global proliferation – whether by other states or non-state actors – can only be slowed down at best. Coercive non-proliferation will only serve to drive up

demand. Non-proliferation by cooperation and consent cannot succeed as long as the US insists on retaining and improving its nuclear arsenal – by what reasonable argument can others be persuaded to give up, or not acquire, nuclear weapons?

If we accept that religious fanatics are planning nuclear attacks and that they may eventually succeed, then what? The world shall plunge headlong into a bottomless abyss of reaction and counter reaction whose horror the human mind cannot comprehend. Who will the US retaliate against? Will the US nuke Mecca? The capitals of Muslim states? What will the US and its allies do as their people fear more attacks, will they expel Muslims from the US and Europe or like the Japanese Americans in World War II, herd them into internment camps?

Hiroshima signaled a failure of humankind, not just that of America. The growth of technology has far outstripped our ability to use it wisely. Like a quarrelling group of monkeys on a leaky boat, armed with sticks of dynamite, we are now embarked on an uncertain journey. Humanity's best chance of survival lies in creating taboos against nuclear weapons, much as already exist for chemical and biological weapons, and to work rapidly toward their global elimination. We cannot afford to live in a savage dog-eat-dog world. Instead, we must dare to imagine and work urgently towards a future that is based on universal, compassionate, human, secular values. For this to happen, the civilized world will have to subdue the twin ogres of American imperialism and Islamic radicalism.

Notes

[1] Notes of the Interim Committee, May 31, 1945, in Martin Sherwin, *A World Destroyed: Hiroshima and the origins of the Arms Race*, (Vintage Books, 1987), Appendix L, p.303..

[2] Martin Sherwin, *A World Destroyed: Hiroshima and the origins of the Arms Race*, (Vintage Books, 1987), p. xvii.

[3] I heard Bethe say these words at a meeting organized by the Union of Concerned Scientists at Cornell University in June, 1997. They provoked outrage among some in the audience. Bethe responded that more Japanese lives would have been lost if the firebombing of cities had continued.

[4] Avner Cohen, *Israel and the Bomb* (Columbia University Press, 1998), p. 11.

[5] Cited in e.g. Zia Mian, "Homi Bhabha Killed a Crow", in Zia Mian and Ashis Nandy, *The Nuclear Debate- Ironies and Immoralities* (RCSS, 1998), p. 12-13.

[6] James Roisen, Stephen Engelberg, "Signs of Change In Terror Goals Went Unheeded", *The New York Times*, October 14, 2001.

[7] Anthony Shadid, "Bin Laden Warns No Peace for US", *Boston Globe*, October 8, 2001.

[8] William Arkin , "Not Just A Last Resort? A Global Strike Plan, With a Nuclear Option", *Washington Post Sunday*, May 15, 2005.

[9] Tim Weiner, "Air Force Seeks Bush's Approval For Space Arms", *The New York Times*, May 18, 2005

[10] Rebuilding America's Defenses: Strategy, Forces and Resources for A New Century, Project for A New American Century, September 2000, p.51, On the web at http://www.newamericancentury.org/RebuildingAmericasDefenses.pdf

[11] Charles William Maynes, "Two blasts against unilateralism", in *Understanding Unilateralism in US Foreign Policy*, RIIA, London, 2000.

[12] Ralph Peters, *US War College Quarterly*, summer 1997. http://carlisle-www.army.mil/usawc/Parameters/97summer/peters.htm

[13] Pakistan and India Under the Nuclear Shadow, a video production of Eqbal Ahmad Foundation, 2001, available from zia@princeton.edu

[14] *Umma* is the Arabic encompassing the entire Muslim community of believers

A Middle East Free of Weapons of Mass Destruction

by Hussain Al-Shahristani

My tribute to the tens of thousands of civilians that perished in Hiroshima 60 years ago, and to the larger numbers who suffered agonizing radiation illness that led to slow death, is to work with distinguished colleagues, such as the Pugwash Group, to make sure that the Hiroshima tragedy is not repeated again, on any population, anywhere in the world. Here, I will make a case for a nuclear weapons-free zone (NWFZ) in the region where I live, the Middle East, one of the most volatile regions of the world.

For the last thirty years, the United Nations Security Council has passed a resolution every year calling or reaffirming its resolutions for the establishment of NWFZ in this region. These resolutions call upon all parties directly concerned to consider taking practical and urgent steps required to establish a NWFZ, and, pending and during the establishment of such a zone, to declare solemnly that they will refrain from producing, acquiring, or in any other way possessing nuclear weapons or nuclear explosive devices, and prohibit third parties from stationing nuclear weapons on their territory. The resolutions also called on all countries in the region to place their nuclear facilities under International Atomic Energy Agency (IAEA) safeguards, to declare their support for the establishment of the zone, and to deposit such declarations with the Security Council.

The establishment of a NWFZ in the Middle East, and the elimination of all other weapons of mass destruction (WMD) from the region, would greatly enhance international peace and security, and would be a corner stone in confidence-building and trust among nations, greatly aiding in the resolution of such long pending issues as the Palestinian question.

The idea of a NWFZ in the Middle East was first adopted in UNSC resolution 3263 in 1974, but it was not given serious consideration by key players in the region until 20 years later when, in 1995, the US endorsed "the development of nuclear-weapon-free zones, especially in regions of tension, such as the Middle East." Three NWFZs are in force today, and two others have been negotiated. Countries in Latin America and the Caribbean, the South Pacific,

and Southeast Asia have all forsworn nuclear weapons by bringing such zones into force. The Treaty of Pelindaba, which calls for African states to establish a NWFZ, opened for signature in April 1996 with 28 state ratifications needed to make the treaty law. Only 19 states have ratified the agreement.

All these NWFZs have contributed to peace and security not only in those regions but also in the world at large. Yet, the most volatile region of the world has not managed even to start negotiations on such a crucial and world-threatening security concern. In July 2004, IAEA Director General, ElBaradei visited Israel and got an agreement from Prime Minister Sharon for the holding of a forum with Israel and the Arab states on issues involved in creating a NWFZ in the Middle East. The session was originally planned for January 2005, but more than six months later, Israel and the IAEA were still negotiating a few technical issues before proceeding with the meeting.

Israel is the only country in the Middle East that has refused to sign the NPT. All of the Arab countries, Iran and Turkey are signatories. Former UN under-secretary-general for disarmament affairs, Jayantha Dhanapala, has said "Israel remains the only country in the region not to sign the NPT, and is therefore the sole stumbling block to achieving a nuclear weapons-free zone," and argued that "a fundamental re-arrangement of priorities is necessary for the international community to build a firewall against nuclear weapon use – accidentally or intentionally – before we can seek durable and equitable solutions to the Middle East issues through the road map that we have."

Israel refuses to confirm its possession of nuclear weapons. Prime Minister Sharon said last year, "Our policy of ambiguity on nuclear arms has proved its worth and it will continue." However, US intelligence has reported to Congress that Israel has had a stockpile since the 1970s that is estimated to include between 200 and 300 bombs and missiles. While US policy has been to support the concept of a NWFZ in the Middle East, the CIA regularly omits mention of Israel's nuclear weapons in its six-month reports to Congress on WMD.

The international community demands, rightly so, that Arab countries and Iran abandon any intention to develop any military nuclear capacity, while leaving Israel in possession of huge arsenal of nuclear weapons and missiles. This double standard is wittingly or unwittingly responsible for the proliferation of nuclear and other WMD in the region when they insist on proliferation compliance in some cases and not in others.

Israel officially does not reject the concept of a NWFZ, but insists on discussing peace and democracy in the region first. The Arab countries, on the other hand, believe the focus should be on first establishing a NWFZ, believing that peace and democracy cannot be established under the threat of nuclear annihilation.

The policy of "opacity" practiced by Israel keeps its nuclear capability out of the public eye, but, at the same time, uses the state of uncertainty to deter its neighbours. The rationale for this posture has been that opacity is the best way to motivate restraint on the Arab side and Iran, while still retaining Israel's military superiority. The results of this policy, however, have not been convincing.

Three of Israel's neighbours—Iraq, Iran, and Libya—have at some time strived or are striving to create a nuclear counter-deterrent. Moreover, Syria and Egypt have acquired counter-deterrents by developing chemical and biological capabilities that coming from close distances, are quite threatening despite Israel's efficient civil defence programme. In other words, opacity has not caused five of Israel's neighbours to exercise restraint or prevented them from developing WMD as a counterweight to Israel's military power. Thus, Israel's nuclear policy has not been a success by any measure, which should prompt a reconsideration of Israel's present stance.

It is time to look at other policy options. As a starting point and to create a stable security environment, Israel and Iran should halt their production of fissile materials, and engage in serious discussion that would lead to public declarations of their nuclear capacity and allow full inspection of their nuclear facilities by the IAEA. This will pave the way to more serious discussion with the participation of the Arab countries and Turkey on establishment of a NWFZ region in the Middle East.

Among the transitional measures in building confidence and trust among the countries in the region, they may seek commitment from nuclear-armed states that the region not be threatened or attacked with nuclear weapons. This would eliminate threats, real or imagined, by outside nuclear powers that seriously concern some countries in the region.

To facilitate meaningful engagement, it is important to understand how various countries in the region perceive their national security and the role their nuclear capability plays in enhancing that security. Nuclear weapons have different symbolic meanings for the different actors. For Israel, they are the ultimate guarantor of national survival against hostile neighbours. Israel projects itself as conventionally inferior because of the Arab states' superiority in population, natural resources, and strategic depth. As a consequence, a nuclear capability appears to be a long-term deterrent.

The Arab countries have a completely different assessment. They see Israel's conventional military power as greater than their combined capacity even without Israel's nuclear weapons. From the Arab and Iranian points of view, Israel's nuclear weapons are not a last-resort deterrent, but rather a protective shield under which the illegal and unjust annexation of the occupied territories continues. Arabs

and Iranians do not see Israel's nuclear weapons as a defensive precaution under which Israel can explore possibilities for peace. Instead, they see it an offensive instrument that impedes Israel's willingness to return to its internationally recognised 1967 borders, which the Arab countries and Iran believe is the corner stone of any permanent peaceful settlement of the Palestinian problem.

Thus, these two completely opposite perceptions make it impossible to engage in a meaningful discussion to establish a NWFZ. To do so, all actors must be satisfied that it is in the interest of their national security to eliminate all nuclear weapons from their region.

The presence of Israel's nuclear deterrence in the region, for more than two decades, has not reduced hostilities. On the contrary, it has provided incentives for Iraqi scientists to commit all their expertise under Saddam's regime to develop nuclear weapons despite his horrific human rights abuses. Iran's drive to develop its nuclear capacity is also an attempt to counterbalance Israel's nuclear threat.

Mutual understanding must be reached to create conditions under which all nations are satisfied that nuclear weapons will not enhance their national security. This understanding, and a measure of confidence, requires some degree of transparency of the military and military-industrial sectors. The opaque policy creates more confusion and mistrust and others will always assume worse case scenarios and react accordingly.

To assure Israel of its security if she agrees to withdraw to its internationally recognised borders, it is important that all WMD be included in the discussion—the aim should be the establishment of a WMD Free Zone (WMDFZ) throughout the region. Chemical and biological weapons are not equal to nuclear weapons in their destructive potential. Nevertheless, these weapons can cause extensive deaths among undefended civilian population.

It is encouraging that all Arab countries have pledged that they will sign the Chemical Weapons Convention (CWC) in response to Israeli accession to the NPT. Of the prospective members of a Middle East NWFZ, all but Israel are parties to the NPT. Iraq, Lebanon, Libya, Egypt, and Syria are all non-signatories to the CWC, but Iraq and Libya are in the process of accession. Israel has signed but not ratified the CWC and has not signed the Biological Weapons Convention (BWC). Egypt, Syria, and the United Arab Emirates have signed but not ratified the BWC.

The effectiveness of Chemical and Biological Weapons Conventions in the Middle East are limited because distances in the region are short and means of delivery abound. Thus missiles that would be counted as tactical or short-range elsewhere can have a strategic impact here. Any proposal for the Middle East

region must indeed address all WMD, and NWFZ cannot exist in isolation from these other weapons. This can be done as an integrated WMDFZ covering all three weapons systems or separate legal instruments governing each weapon system individually. Either solution would be useful. Disentangling the issues and proceeding on each in parallel perhaps is the most effective means.

Security dialogue among competing nations should start right away to examine if NWFZ in the region would enhance or undermine their security. WMD are highly related to the feeling of insecurity, and unless the causes of these perceptions and sense of insecurity are adequately addressed with a degree of confidence-building measures, nations may continue to feel that their only protection and defence is possession of WMD.

In the Middle East presently, the security environment is challenged by many negative factors, such as conditions in Iraq, the impasse in the Palestinian peace process, global terrorism, growing instability in the region and the threat of WMD. In order to deal with such a situation – which represents a challenge for both the Middle East countries and the international community– several strategies have been put forth by different proponents. The proposed options range from a strictly regional security architecture to a broader vision connecting security to a process of general social and political reform in the Middle East.

However, in the current environment it would appear very difficult to achieve simultaneously both "human rights and democratization" and the solution of regional security issues. I believe a more realistically achievable task is to aim for regional stability by agreeing on a Multinational Regional Security Arrangement (MRSA) through direct negotiations by the countries in the Middle East, including Iran and Turkey, with the participation of the UN, EU, US and Russia as observers and guarantors. Without true regional stability – not imposed by a super-power or by an external coalition, but positively involving all the regional actors – neither permanent security nor the setting in motion of all those complex social, political and cultural trends required for a real reform of the Middle East countries are likely.

The different strategic security concerns of the regional actors must be satisfactorily addressed and any acceptable solution must offer a truly collective security arrangement. To achieve this, a clear definition and categorization of security threats as perceived by each actor must be carefully considered, and sufficient guarantees provided to alleviate those security concerns. Obviously, there would be wide differences, and the different positions should be examined to see where they diverge and where they intersect. The security arrangement should work on these intersections, on shared perceptions and on issues where states' interests converge and have points in common.

There is no magic formula for solving all the security and instability challenges in the region simultaneously. A good starting point is to remove political excuses, such as regional instability and insecurity, failure of the peace process, dual standards, discriminations, etc., and focus on a security arrangement that satisfies the national security needs of all countries in the region.

Another problem that should be resolved is to find a satisfactory solution to the needs of the countries in the region for nuclear fuels for their power reactors and other peaceful applications. This is particularly important for Iran, given the long history of economic boycotts and political isolation.

One way to ease concern for independent nuclear fuel supply for peaceful nuclear reactors is multinationalizing the front and back ends of the nuclear fuel cycles of those states in the Middle East region with a nuclear capability. The expansion of URENCO operations to the Middle East nations, specifically Iran, may provide a solution to its concern for guaranteed nuclear fuel supply. Alternatively, bilateral agreement between Iran and the Russian Federation could provide such a guaranteed supply while assuring the West that it is not directed for non-peaceful purposes.

Of course, such an agreement must be verified or sponsored by international organizations such as the IAEA or the nuclear suppliers groups or ad-hoc regional organizations. One option is an agreement along the lines of the Argentinean and Brazilian ABAAC model. This would mean providing nuclear fuel at a competitive price for an agreed period of time, as the buyer requires, and with the undertaking to receive back the spent fuel.

At the same time, and during this transitional confidence-building stage, the international community can support the countries of the Middle East in pursuing peaceful applications of nuclear science and technology. These peaceful applications would enhance socio-economic developments in the region by providing significant benefits in key areas such as medical diagnosis and treatment, nutrition, soil fertility, irrigation, plant breading, animal production and health, insect and pest control, and food preservation and sterilisation. But, more importantly, it would convince the people of these countries that a NWFZ is not a pretext to deprive them of the benefits of modern technological advancements.

This combination of a regional security arrangement, a guaranteed supply of nuclear fuel, and the peaceful development of nuclear science and technology, if successfully implemented, would create confidence and trust such that countries could then proceed with serious negotiations to remove all nuclear weapons and facilities, as well as all other forms of WMD and their production facilities, from their countries in order to establish a WMDFZ in the region of the Middle East.

Confronting the Threats to the Nuclear Non-Proliferation Regime

by Mohamed I. Shaker

The Nuclear nonproliferation regime has grown into a complex and multifaceted set of treaties, rules, guidelines, and regulations, overseen by international, regional and sub-regional organizations within and outside the UN system. The centrepiece of the regime is the Nuclear Non-Proliferation Treaty (NPT) which came into effect in 1968 and was extended indefinitely in 1995. After a successful review in the year 2000, the NPT received a serious setback in May 2005 during the Seventh NPT Review Conference in New York.

Although in his latest report on UN reform, the UN Secretary General warns of threats that may lead to the weakening or even the collapse of non-proliferation efforts, an in-depth analysis of the Nuclear Nonproliferation Regime in its entirety is beyond the scope of this paper. Nevertheless, an analysis of only the threats will still provide insight into relevant aspects of the regime.

Although the current threats to the regime are very much interrelated, they can be divided into six types:

1. The non-universality of the regime and the dangers inherent in the unwillingness of certain countries to join the NPT exacerbate protracted regional instabilities (Pakistan – India – Israel)
2. Noncompliance (Iraq – North Korea - Iran)
3. Lack of Disarmament, and more particularly nuclear disarmament, by the nuclear-weapon-states, as defined in the NPT (Article VI) (also a case of noncompliance)
4. Excessive regulation of the peaceful uses of nuclear energy to the point of denial of certain technologies and materials without firm and binding commitments guaranteeing supply (Article IV of the NPT)
5. Nuclear terrorism
6. Disregard for international legitimacy

Universality

Adherence to the NPT is almost universal, with India, Pakistan and Israel being the only states possessing nuclear weapons that remain outside the Treaty. India first demonstrated its nuclear-weapon capabilities in 1974 and again, with Pakistan, in 1998. Israel is known to have developed a nuclear-weapon capability but instead declared that it would not be the first to introduce nuclear weapons into the Middle East. The withdrawal of North Korea from the NPT almost three years ago was also a blow to the NPT's universality (we shall come back to the case of North Korea when we tackle non-compliance).

Moreover, universality is nullified by the failure of many signatories to implement the required safeguards agreements according to Article III of the Treaty. Although, it is obviously a case of noncompliance (though much less alarming), as these states are almost all without significant or any nuclear activity at all. However, this should not be a reason to neglect fulfilling their obligations under the NPT.

Some scholars are attempting to find ways and means to affiliate India, Pakistan and Israel with the NPT without requiring that they abandon their nuclear-weapon capabilities (mainly by asking that they abide by certain provisions of the NPT that would not affect their nuclear-weapon status). Since Israel has stated that it would not be the first to introduce nuclear weapons into the region, it would find itself being forced to accept a status, implicitly or explicitly, that it has so far hesitated to recognize.

Accommodating the three countries might also encourage further proliferation from within the NPT regime. Non-compliance and violations have already beleaguered the regime and the suggested accommodation might exacerbate, not ameliorate, the malaise. Additionally, in such an atmosphere the disarmament mandated in article VI of the NPT might be further downgraded or disregarded.

In South Asia, nuclear conflagration may erupt between India and Pakistan unless a political and just settlement is found for Kashmir. Although recent agreements designed to reduce tension (such as agreeing not to attack each other's nuclear facilities) have improved their relations, the situation still remains tense.

In the Middle East, Israel's nuclear programme is a source of great anxiety and regional security cannot be maintained in the shadow of its growing nuclear-weapon capabilities. In the hope of insuring long term stability, Egypt has put forward a proposal for the establishment of a Middle East free of weapons of mass destruction. Discussion of the proposal at the League of Arab States' Summit in Tunisia in May 2004 resulted in the call for an international conference to discuss a "weapons of mass destruction free zone" in the Middle East. Howev-

er while this is a step in the right direction, it is paramount that the countries work to implement the roadmap drawn by the Quartet (the US-the EU-Russia and the UN). A just and peaceful settlement to the Palestinian problem and the end of occupation of Arab land in Syria would diffuse tension and provide incentive towards a solution on the nuclear issue. However, it must be said that the establishment of WMD-free zone ought not wait until a full peace in the Middle East is established. Both processes can and should proceed simultaneously.

Non-Compliance: Iraq, North Korea and Iran

With regard to Iraq, the adoption of Security Council Resolution 687 and the establishment of UNSCOM (later succeeded by UNMOVIC) has led to the Iraq's relinquishment of weapons of mass destruction (WMDs). United States and its allies waged a war on Iraq with a multitude of objectives, including dismantling the WMDs believed to have remained under the control of the deposed regime. However, nothing was ever found. We shall later revert to the war in Iraq when we deal with the disregard for international legitimacy as a threat to the nuclear nonproliferation regime.

In North Korea, the six-way talks have not yet led to any concrete results and therefore, the situation in Northeast Asia remains precarious and carefully watched by its neighbours, especially South Korea, Japan and China (all participants in the six-way talks). The UN Security Council has, for the time being, avoided examining exactly what took place with regard to North Korea. Even when North Korea decided once more to withdraw from the NPT with a one day notice, the Security Council did not discuss or challenge such a decision.* These events are a serious setback to the UN collective security machinery.

Additionally, Iran committed a mistake in not reporting to the IAEA in due time about its uranium enrichment activities, which has led to speculations about its real intentions and whether Iran is contemplating a nuclear weapon capability away from any international control. The situation has reached an alarming stage whereby the case could be referred to the Security Council with the possibility of sanctions or any other measures under Chapter VII of the Charter.

I believe that one way of solving this issue is for Iran to ratify the Additional Protocol attached to its Safeguards Agreement with the IAEA and agree to suspend and dismantle its enrichment and reprocessing activities. Countries that could potentially supply nuclear fuel to Iran should formally guarantee a supply that would fulfill its needs for its peaceful nuclear programme. These assurances should be legally binding, reliable and guaranteed by the Security Council and the IAEA. Additionally, any agreement reached with Iran would create

a precedent that would affect the entire non-proliferation regime. The Russian proposal to enrich Iranian uranium needed for nuclear power facilities is an attractive one and could be a way out of the present crisis. Anyhow, parties to the NPT have a stake in the ongoing negotiations, but I will come back to this point later when we discuss the threats emanating from excessive regulation of peaceful uses of nuclear energy.

Finally, the Gulf countries and the Arab world at large, would like to see a happy ending of the Iranian crisis. A nuclear weapon capability in Iran would be received with great regional worry and concern, although some would rejoice at the capability to stand up to Israel, a country that has not been subjected to curtailment, questioning or investigation like others. It is true that Israel is not a party to the NPT and could escape any reprimand, but at the end of the day, it should not be forgotten that the Israeli nuclear programme, shrouded in secrecy, may have tempted both Iraq and Iran to invest heavily in nuclear energy, and may still tempt others in the region to do likewise unless Israel is brought under full-scope safeguards.

Lack of Disarmament

Progress by the five nuclear-weapons states party to the NPT on disarmament, specifically nuclear disarmament is disappointing. Even the 13 points that they have agreed upon at the NPT Review Conference of 2000 have not been fulfilled or even referred to in the agenda of the NPT Review Conference of 2005.

As indicated earlier, the failure to disarm and achieve a serious step towards nuclear disarmament is a serious act of non-compliance. It would be difficult in a world without disarmament to incriminate some for their failure to comply, and keep silent about non-compliance of the nuclear-weapon states with regard to their obligations under Article VI of the NPT as well as their undertakings in the 2000 NPT Review Conference. This double standard is one of the most serious threats to the nuclear nonproliferation regime. It should not be forgotten that The NPT Review Conference of 1980 failed to issue a final declaration because of the failure to agree during the conference on the importance of a comprehensive test ban treaty and the ways to achieve it.

It is time to bring the Comprehensive Test Ban Treaty signed in 1996 into force, followed by an agreement on a cut-off of fissionable material for military purposes. More importantly, countries must reactivate and fully employ the Conference on Disarmament in Geneva. To let such an important conference lie dormant and unemployed while there are so many important and crucial issues is also a violation and a non-compliance act on the part of the nuclear-weapon states that have the power to direct this conference.

Excessive Regulation by Export Control Regimes

Export Control Regimes have become an important ingredient in the nonproliferation regime. However, the guidelines worked out by these Export Conrol Regimes are sometimes forced upon recipient countries without their consultation. This is extremely unfair as it denies these countries the chance to respond to the suggested guidelines in discussing their merits and necessity. This process must therefore be reformed so that export control regimes would be required to involve all of the parties concerned. Supplier Countries showed some readiness to do this, but the matter has not been pursued to the full satisfaction of the recipient States.

This brings me to a second point. The restrictions imposed on the so-called "sensitive materials and technologies" are overly strict and in fact invite those who can, to bypass them to produce the materials and equipment independently or with the assistance of others. Too much control is counter productive. Instead, permissiveness under strict international control could lead to healthy and constructive attitudes.

The "Atoms for Peace Proposal" of President Eisenhower and the establishment of the IAEA had the philosophy that nuclear technology would spread worldwide whether we like it or not, and therefore, nations should work together, but under strict international control. Article IV of the NPT promises such cooperation, but the current restrictions are much greater than the fears expressed when Article IV was drafted and approved. Some quarters even whisper that this article is a loophole in the NPT, but I believe that without Article IV there would have been a loophole or no treaty at all .

A reasonable solution has been put forward by the Director-General of the IAEA: the creation of multinational or multilateral centres whereby states can pool their resources for producing fissile material needed for reactor fuels and other non-military purposes. This would guarantee the IAEA oversight over the activities, while at the same time relieving it from interfering repeatedly in the nuclear activities of each country. I believe this idea is a good compromise between those who advocate for complete freedom and equality in producing their own equipment and material (for the peaceful nuclear programmes), and those who instead advocate denial and deprivation. It is also very much in line with the proposal in the UN Secretary General's 2005 report on UN reform that the IAEA should be a guarantor of supply of nuclear fuel to recipient States.

In the meantime, it is important to reinstitute the IAEA Committee on Assurances of Supply (CAS) to workout guidelines and rules that would guarantee supply of nuclear materials and equipment to all those investing in the peaceful uses of nuclear energy. This guarantee of supply must be legally binding and reli-

able. CAS failed in the past because supplier countries were unable or unwilling to give such guarantees, as they wanted to have the full control of the traffic in this domain. We must not allow CAS or any other machinery to fail this time. Developing countries around the world suffered greatly in the past as a result of domination and monopoly of certain commodities. Nowadays, this cannot be tolerated. Grievances of the past are still with us today.

Nuclear Terrorism

A few years ago those who took the lead in warning us of the possibility of nuclear terrorism were ridiculed and the whole matter relegated to science fiction. Nowadays the threat of nuclear terrorism or even terrorism using weapons of mass destruction is not a far-fetched possibility. Because of that, I support in principle the measures suggested by the Carnegie Endowment for International Peace in its June 2004 draft study, "Universal Compliance: A Strategy for Nuclear Security." One measure suggested is to halt the use of highly enriched uranium in all reactors and replace it with low enriched uranium. However, it is important that all measures taken to preempt nuclear terrorism cannot affect the inalienable right of all nations to invest in peaceful uses of nuclear energy. Additionally, agreements or guidelines pertaining to the physical protection of nuclear materials should also be implemented to minimize the chances of nuclear terrorism.

UN Security Council Resolution 1540 (dated 28 April 2004) prescribed the way to contain, respond and act to prepare for the potential use of WMD by terrorists (now referred to as "non-State actors"). I would invite a serious debate of the consequences of such a resolution. In fact, my reservation is that with this resolution, although justified, the Security Council is trying to legislate matters that should instead be relegated to States to negotiate international treaties and conventions in this area. That is why it is important to call for an international conference on terrorism, the purpose of which would be to tackle WMD terrorism among other issues, and recommend certain actions or negotiations with a view of concluding a single comprehensive agreement.

Although the Carnegie Endowment study prescribes a role for the Security Council, the study also states that supplier states can intervene either independently or as a group, with or without the prior approval of the Security Council. However this would be a dangerous course to follow as it doesn't not rest on international legitimacy. This would apply as well to the proliferation security initiative (PSI) in intercepting ships in the high sea in the absence of an international treaty regulating such interception. The Security Council should remain the sole entity to use coercive measures, as stated under Chapter VII of the UN Charter.

Disregard for International Legitimacy

The war on Iraq was a manifestation of complete disregard of the international legitimacy represented by the Security Council and the United Nations. No coercive measure may be taken vis-à-vis any state or group of states without the authorization and blessing of the Security Council as stated under Chapter VII of the UN Charter. We must guard against another Iraq. The war also showed that Saddam Hussein possessed no weapons of mass destruction and that the action taken by the US and UK led coalition was based on speculations and inaccurate intelligence reports. Moreover, the war had objectives other than looking for WMDs.

In the past we have also seen some states take matters into their own hands. The first example was the attack by Israel in June of 1981 on an IAEA inspected Iraqi reactor. The other was the attack by Iraq during the Iran-Iraq war against the Iran's Boshahr reactor. In the future, any case that triggers worries and concerns about nuclear or WMD proliferation should be put before the Security Council for collective action. There are speculations that a preemptive strike may be launched against Iran. Here again, if the IAEA were to fail in reaching a satisfactory solution to the problem, only the Security Council could authorize an action to redress the situation. International legitimacy should be respected and even bolstered by any reform of the Security Council.

Conclusion

Although there may be others, these are the threats I perceive to the Nuclear Non-Proliferation Regime. I suggested some ideas and remedies. The International Atomic Energy Agency is at the centre of all activities in this area and its active and committed role as a guarantor of supply, stability and security in an area fraught with danger is badly needed. The Security Council should be the final arbiter in this domain. The Conference in Disarmament in Geneva should be reinvigorated in order to move forward on nuclear disarmament and thus promoting compliance to the NPT and its article VI.

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* In fact North Korea withdrew within 24 hours of its notification to the Security Council on the basis that it was a resumption of the pervious withdrawal, which was interrupted one day before the required three-month notice.

Nuclear Disarmament and Non-Proliferation: an Iranian Perspective

by Saideh Lotfian

Introduction

The nuclear arms race as we know it today is a post-World War II obsession that has passed through various degrees of intensity. After the fall of the Soviet Union, the advocates of disarmament hoped to see significant reduction in the armed forces and military budgets of both the greater and lesser powers. They also welcomed the lessening of the East-West tensions as a positive event which created a golden opportunity for progress in reducing nuclear weapons and ultimately eliminating them. Regrettably, the September 11 terrorist attacks in the United States and the subsequent military campaigns of the Bush administration against the Taliban-dominated Afghanistan and Saddam Hussein's regime in Iraq dashed this hope. As a result of these developments, we are witnessing a recurrence of the Cold War-era policies which are indicative of the great powers' feelings of insecurity and their increasing concerns over the growing dangers of nuclear terrorism and WMD proliferation. Given these new threats, it is surprising that the 189 states' parties to the 35-year-old NPT ended the seventh Review Conference on May 2005 without an agreement to strengthen this vital international treaty. The delegates could not even build on the thirteen practical steps for nuclear disarmament discussed in the 2000 NPT Conference.

Saddam Hussein's use of chemical weapons against both the Iranian troops in the battlefields and the innocent Kurdish civilians in the Iraqi town of Halabja during the Iran-Iraq war led some to fear the use of WMD would be a matter of course in the future wars in the Middle East. Chemical and Biological weapons do not possess the level of status that nuclear weapons do, but are more accessible and cheaper to produce. As a result, the implementation of the Chemical Weapons Convention (CWC) and the Biological Weapons Convention (BWC) by the Middle Eastern states is essential. An alarming factor contributing to the militarization of the Middle East is arms transfers to the regional states, even though these weapons have been extensively used in their inter-state wars or in internal conflict situations by the central governments to suppress their

own people. It is deplorable that most of these weapons have been supplied by the great powers and above all by the U.S. and Russia. There is a link between the transfer of sophisticated conventional weapons and the danger of WMD being used in wars.

The Prevailing anti-Nuclear Views in the Middle East

The charges of discrimination and double standards cannot be dismissed even by the staunchest supporters of the NPT. To prove the discriminatory character of the non-proliferation regime, the critics have made reference to the non-fulfillment of the disarmament commitments undertaken by the nuclear weapon state parties to the NPT. Nuclear weapon states are permitted to retain and even use their nuclear assets as legitimate tools of diplomacy while the non-nuclear weapon state signatories of the NPT are prevented by international law from acquiring such weapons. Nuclear weapons states (NWS) have not worked toward an unconditional No-First-Use treaty, and have made no pledges not to use nuclear weapons or threaten the use of nuclear weapons against non-nuclear weapon states as an effective step to strengthen the NPT. For the most part, of course, a large percentage of non-nuclear-weapon states (NNWS) have some sympathy with this critical perspective, but unfortunately it has not been possible to persuade the P5 to speed up the process of arms reduction. The future effectiveness of the non-proliferation regime will depend on the implementation of Article VI of the NPT and approaches that address the multiplicity of motivations for proliferation in the Middle East and other developing regions.

The United States, which is the only country ever to have used nuclear weapons in a war (against Hiroshima and Nagasaki in WW II), has integrated these horrible and inhumane weapons into its military plans since the late 1940s. A war planned or waged with nuclear weapons raises fundamental moral questions of the lack of respect for human life and for the environment in which we all live. The U.S. Air Force and the National Nuclear Security Administration (NNSA) are studying the feasibility of modifying two existing nuclear weapons into a new earth penetrator nuclear weapon known as a "bunker-buster." In fact, the Bush administration's decision to develop and deploy new types of nuclear warheads might lead to a new nuclear arms race among the nuclear weapon states to modify their existing nuclear warheads, or seek new weapons systems. This might, in turn, necessitate the resumption of nuclear testing and could well put an end to the CTBT. The more effective Robust Nuclear Earth Penetrators (RNEP) have been regarded as "usable" nuclear weapons for destroying hardened underground targets.[1] How could a state-party to the NPT justify its declared policy of the use of nuclear forces under certain tactical sce-

narios? The Bush administration has been justifying its first use policy by claiming the need to retaliate against the use of chemical and biological weapons by its adversaries. Nuclear weapons are not necessary for responding to CBW attacks. A nuclear retaliation or threats to use nuclear weapons are not effective against terrorist groups (like the Al-Qaeda network) which is scattered across the world. It is insane to even contemplate the use of nuclear weapons in any war which would result in horrifying casualties and unforgivably harmful environmental devastation. Rather than legitimizing the use of nuclear weapons as the only defense against the use of CBWs, the rational solution for the problem of the growing risk of the use of CBWs in the Third World is to intensify international efforts to implement universal adherence to the CWC and BWC together with a strengthened verification mechanism.

The political use of nuclear weapons to blackmail other states has also been a contributing factor of nuclear proliferation. The U.S. took advantage of its nuclear supremacy to issue vague threats of the use of nuclear weapons in international crisis situations such as the Berlin crisis and the 1973 Middle East war. However, the United States' nuclear capability has not enhanced regional security. Despite reliance on the unrivaled US military superiority, Iraq and Afghanistan remain in disarray. The Bush Administration's policy of encouraging democracy in the Middle East faces daunting obstacles. The lack of understanding of regional realities is especially evident in Bush's dealings with Iran. Recent reports that US officials might consider using coercive measures to deal with Iran's nuclear program are solidifying America's image as a unilateral imperial power. The destabilized regional security system in the Middle East, in turn, helps maintain a vicious cycle of wars that is eroding international security. Consequently, the regional governments and the great powers are allocating scarce national resources to the military sectors in an attempt to feel more secure.

The Middle Eastern Nuclear State: Israel

Since Mordechai Vanunu's revelations in 1986, Israel is widely recognized as the only nuclear weapon state in the Middle East.[2] It has a substantial nuclear arsenal of at least 75 to 200 nuclear devices, and is not a party to the NPT. This fact, coupled with the long-standing Arab-Israeli conflict, has created dangerous ambiguities that might encourage other regional states to develop nuclear arms, as evident from Saddam Hussein's aborted efforts to go nuclear. Over the long-run, dozens of oil rich states could develop nuclear capabilities, and sophisticated means of delivery such as intermediate-range ballistic missiles. This destabilizing event will in turn raise the risk of a potential Armageddon in the Middle East.

Given the oil wealth available to finance the import of widely-available nuclear technology and the know-how to produce said technology, and the belief that nuclear weapons would confer considerable prestige and military might on lesser powers, it is remarkable that more proliferation has not taken place in the Middle East. The pro-nuclear scholars argue that Israel's nuclear capability persuaded President Sadat to sign the peace treaty with Israel, because the Arab states could not have nuclear weapons. However, there is a counter-argument that the Israeli nuclear monopoly has acted as a strong incentive for the Arabs to try to acquire nuclear weapon capability.[3] However, the future nuclear powers in the region would not follow the same path of publicly testing and announcing their nuclear status pursued by the P5. As the recent example of the Iraqi nuclear program shows, these states are more likely to adopt the clandestine Israeli and Pakistani paths to nuclearization. Israel has secretly purchased or stolen nuclear materials, notably enriched uranium, from the nuclear-capable countries. There are now many sources which reveal how nuclear weapons states (e.g., France and the US) helped Israel to acquire secret nuclear weapons capability, disregarding their obligations to non-proliferation. These sources clarify many aspects of Israeli nuclear programs including the FBI's 1985 arrest of Jonathan Pollard, a U.S. Navy intelligence analyst who pleaded guilty to working for Israeli intelligence services.[4]

According to the US Department of Defense's 1997 report entitled "Proliferation: Threat and Response," Iran, Iraq, Libya and Syria are mentioned as the regional proliferation countries of concern in the Middle East and North Africa area. Israel as the NWS has not been listed.[5] In the third report released in January 2001, the DoD considers nuclear, chemical and biological weapons as a major source of threats for international security, but once again leaves out Israel in the updated information about the countries that possess these weapons and the means to deliver them. This deliberate neglect to publicly acknowledge the existence of the Israeli nuclear arsenal caused an uproar in the Middle East region.[6] However, a 1993 report for U.S. Congress, "Proliferation of Weapons of Mass Destruction: Assessing the Risks," rectifies this omission, and explains that Israel is "widely believed to have a clandestine nuclear arsenal of approximately 100 weapons."[7] Moreover, it recognizes the problem of double standard by stating that "even if Israeli weapons of mass destruction are not themselves deemed to threaten the United States or U.S. interests, however, their implicit acceptance complicates nonproliferation policy." [8] Israel's insistence on maintaining its nuclear monopoly has to be viewed as one of the main factors that have spurred regional arms races by the states fearful of the drastic power imbalances in the Middle East. Denuclearization of Israel will be even less

likely to succeed if the Bush administration continues to ignore the fact that Israel has introduced nuclear weapons in the region since 1967. The Middle Eastern states share a security concern—Israel's nuclear weapons capability and its nuclear deterrence goals. The only differences between them are a) whether they view this nuclear monopoly as an "offensive" or "defensive" nuclear posture, and b) whether they believe they have to do something about it. The competing views seem to include: 1- Take no action because they are incapable of changing the status quo; 2- Persuade the international community to force the denuclearization of Israel (e.g., by creating a nuclear weapon free zone in the Middle East); 3- Acquire similar nuclear capability to create a balance-of-terror in which a regional nuclear state would engage in a nuclear arms race with Israel. The immediate source of tension most likely to result in a conflict is the controversy over Iran's nuclear program.

The Immediate Proliferation Concern: Iran

According to the Atomic Energy Organization of Iran (AEOI), Iran does not have nuclear weapons or sufficient fissile material to produce these weapons. Iran's nuclear facilities are under the International Atomic Energy Agency (IAEA)'s oversight.[9] However, Iran's commitment to pursue a civilian nuclear program aimed at generating nuclear power and to establish the indigenous capacity to produce fissile material is a highly political statement with tremendous socio-economic impact on Iran and the rest of the region. Iran acknowledged both the heavy water production plant at Arak and the uranium enrichment facility at Natanz after their existence was disclosed in August 2002 by the National Council of Resistance of Iran (NCRI) — an opposition group which is part of the Mujahedin-e-Khalq Organization (MEK or MKO).[10] Mohamed ElBaradei, the head of the IAEA, visited the uranium enrichment facility at Natanz, the heavy water production plant at Arak and Isfahan nuclear facilities in February 2003. The activities at these facilities had been reported to the board of governors of the IAEA. In fact, the assessment of the risk of Iran's civilian nuclear energy program leading to proliferation of nuclear weapons has been one of the most significant aspects of the IAEA's work since 2003.

Iran tried to reassure Europeans and its neighbors that its program was safeguarded. Iran started the nuclear negotiations with EU3, which culminated in Iran's signing an Additional Protocol to its NPT safeguards agreement on December 18, 2003, granting IAEA inspectors more access to its nuclear facilities as a way to alleviate other states' security concerns over its nuclear program.[11] Iran suspended the uranium conversion facility (UCF) in the Isfahan Nuclear Technology Center which consists of other facilities such as a zirconium produc-

tion plant and a small IAEA-safeguarded "zero-power" research reactor. Even so, the Iranian government has announced that its temporary suspension of its uranium enrichment as a result of its negotiation with the EU3 should not be interpreted as Iran's intention to bring to a halt its civilian nuclear power program, including enrichment activities.

While all this was going on, heated public and behind-the-scenes debates over the nuclear issue between the pro- and anti-nuclear groups proceeded in Iran. The frequent question has been "Will Iran be Next?" The government of the Islamic Republic of Iran views the continued verbal threats against Bushehr reactor with extreme sensitivity. In July 2001, Alexander Haig was quoted in a *Jerusalem Post* article as saying Iran could suffer an Israeli attack similar to Israel's surprise 1981 bombing of Osiraq in Iraq if it pursues a nuclear weapons program.[12] The U.S. "war gamesters" are looking at how the American military forces could be used in different types of air strikes and ground invasion to eliminate the "Iran threat". For American neocons, a preemptive military strike against Bushehr and other Iranian nuclear facilities is an option. Gerecht, a former CIA Middle East operative in the late 1980s who is now a resident fellow at the right-wing American Enterprise Institute, argues that "we can give diplomacy a chance. But in the end, if we turn away from preemptive action, then the "axis of evil" doctrine is over."[13] Israeli threats and the U.S. attempts to link the nuclear issues with Iran's foreign policy behaviors have made the nuclear option more tempting to the Iranian hardliners. The commander of the Islamic Revolution Guards Corps (IRGC), Major General Rahim Safavi, underlined Iran's strategic defense focus on "deterrence" to deal with "foreign aggression." He has commented on the U.S. and Israeli threats to attack Iran, and has repeatedly claimed that the Iranian military forces are fully prepared to defend Iranian territory if deterrence fails. He asserted that the US military is overstretched; the Bush administration is trapped in the Iraqi military operation and cannot launch a new war against Iran.[14]

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While the likelihood of the termination of Iran's civilian nuclear program is very small, it is unlikely the Iranian government will maintain a military program in the nuclear field while it is on the radar screen of the international community. The reformist president Khatami's endorsement of Iran's nuclear power program was motivated more by the desire to prevent Iran's dependency on oil as the only energy source for its growing population than to help establish dominance over Iran's neighbors. Iran signed an agreement for the return of the spent fuel from the Bushehr nuclear power reactor to Russia, signed the

Additional Protocol to the NPT, and agreed to more stringent safeguards for its nuclear facilities under the IAEA. Reporting Iran to the UN Security Council (UNSC) is an ominous diplomatic step opening the way for punitive measures against Tehran. Russia, as the nuclear state helping Iran to build the Bushehr reactor, might veto the anti-Iran resolution aimed at imposing U.N. sanctions against its Caspian Sea neighbor. Even if the UNSC passes a resolution to impose sweeping sanctions, the Iranian government might feel too threatened to give up a near-nuclear capability which might be viewed as a last resort for the survival of the regime. The last thing the world needs is an expanded US-led war encompassing the vast geo-strategically vital area extending from Afghanistan and Iran to Iraq and the northern Persian Gulf.

Other Regional Proliferation Challenges

As mentioned earlier, the lack of political resolve on the part of the international community to exert some type of diplomatic pressure on the Israeli government to declare its nuclear arsenal has reinforced perceptions of double standards evident in the international non-proliferation efforts. What is so troubling is that other states in the Middle East will find it in their interests to move in the direction of acquiring nuclear capabilities. The possibility of Saudi Arabia's acquisition of nuclear weapons has been raised in a few sources, but vehemently rejected by Saudi government officials.[15] There are two reasons for a suspicious attitude toward the Saudi intentions. One reason is the unsubstantiated allegations of Mohammed Khilewi, the first secretary at the UN mission of Saudi Arabia who defected to the U.S. in July 1994. Khilewi asserted that his government tried to buy Chinese nuclear reactors, financially helped Pakistan to build its nuclear bombs, and supported Iraq's nuclear program by supplying $5 billion to Saddam Hussein's regime during the 1985-1999 period. The second reason is the Saudi's 1998 purchase of fifty CSS-2 missiles from China, each possessing a range of over 1,500 miles with the capability to deliver nuclear weapons.[16]

Another potential proliferation challenge comes from Egypt which has been striving to force Israel to sign the NPT since the 1980s. Israel's regional monopoly of nuclear capabilities as well as the Iranian nuclear power program could be major factors motivating an Egyptian nuclear program. Acquisition of nuclear status would be a matter of national prestige for the most populated Arab state.[17] For the proponents of arms control, a heartening event was Libya's termination of its secret nuclear weapons program in December 2003. As more countries adopt a transparent nuclear policy, we shall see devaluation of nuclear weapons. In the next section, a major step to de-legitimize nuclear weapons in the region is examined.

The Middle Eastern Nuclear-Weapon-Free Zone

There have been prudent suggestions that the Middle East should be turned into a nuclear weapon free zone (NWFZ). There are many possibilities here, and inevitably such suggestions are based on similar perspectives on security. The existing regional security system does not provide an acceptable degree of security for all states, and must be focused on improving military as well as non-military dimensions of security.

The notion that some regional states have the right to equip themselves with instruments of warfare as dangerous and terrorizing as nuclear weapons is shocking. The NPT, as it is today, legitimizes the possession and use of nuclear weapons by the original nuclear states. We cannot expect the creation of a nuclear weapon free world any time soon, but we might see the establishment of more nuclear weapons free zones in the Middle East and other troubled regions of the world. The reasons for this optimism are twofold: First, most regional states have publicly supported the idea of the creation of a zone free of WMD or a nuclear-weapon-free zone. Second, there are existing NWFZ regional treaties and protocols which prohibit the party states from acquiring, producing, testing, stockpiling and deploying nuclear weapons. They include the treaty of Tlatelolco for Latin America and the Caribbean (was opened for signature in 1967, and entered into force in 1969), the Rarotonga Treaty for the South Pacific (was opened for signature in 1985, came into force in 1986), the Pelindaba Treaty for Africa (opened for signature in 1996, not yet in force) and the Bangkok Treaty for Southeast Asia (was opened for signature in 1995, and entered into force in 1997). Should not the Holy Land be a nuclear-free zone—inhibiting the acquisition and forbidding the use of inhumane and atrocious weapons?

The nuclear weapon free zone for the Middle East (NWFZ-ME) could be modeled on the zone created by the Treaty of Tlatelolco; and particularly on two of its most significant features: a) inclusiveness since the most notable regional 'hold-out' countries decided in the mid-1990s to join their Latin American and Caribbean neighbors in recognizing the regional NWFZ initially created in 1967;[18] and b) the treaty's Protocol II provides for the "negative security assurances" by the five original NWS which have all signed and ratified it.[19] Fundamentally, the NWFZ-ME should address the following six concerns:

- Banning the use or threats to use nuclear weapons against any state in the zone,
- Prohibiting any attack on nuclear facilities within the zone,
- Forbidding the dumping of nuclear wastes anywhere in the zone,
- Prohibiting full-scale nuclear weapons testing in the zone,[20]

- Preventing extra-regional states from deploying naval vessels or planes which are carrying nuclear weapons or nuclear material. The non-stationing of nuclear warheads as well as their delivery systems in the NWFZ-ME should be included. The U.S. has reportedly deployed nuclear weapons at the Incirlik air base in Adana, Turkey. In addition, American naval vessels in the Persian Gulf may be carrying nuclear-armed missiles.
- Adoption of "full-scope" safeguards of the IAEA by all parties in the treaty.[21]

Conclusion

From the perspective of the Middle Eastern states, three issues provide a rationale for thinking about the new role played by nuclear weapons in shaping security policies of regional actors. First of all, it is inexcusable that the nuclear states have failed to promote the steady and systematic reduction of their nuclear arsenals with the goal of eventual elimination of such deadly and destabilizing weapons. Such indecisiveness and delays in the arms control treaties compliance have sent the wrong message to the NNWS. It is true that we cannot "de-invent" nuclear weapons, and we cannot eliminate nuclear power plants simply because they might be used to gain access to nuclear material. However, we are able to prohibit the R&D, production and deployment of new and deadlier types of nuclear weapons as a pre-condition for a more rapid progress toward nuclear arms control. The nuclear weapons states should be forced to abandon developing and deploying new nuclear weapons. But the picture is not entirely bleak. Even though we cannot set a timetable for nuclear disarmament in the short run, we might compel all five original nuclear weapon states (China, France, Great Britain, Russia, and the United States) to start serious multilateral nuclear arms reduction negotiations. This view is echoed by most of the non-nuclear weapon state parties to the NPT.

Secondly, the U.S. government's official documents have made it clear that the Bush administration has a well-developed plan to strike at non-nuclear weapon states deemed to have hostile intentions, such as Iran, North Korea, and Syria. It is also apparent that President Bush advocates increasing American nuclear war-making potential. Nuclear weapons are embedded in U.S. strategic doctrine with the erroneous belief that by creating fears of vulnerability of an adversary, it is possible for Washington to extract political gains. This action has only increased the importance of nuclear weapons and other WMD in international relations. The Bush administration fought a costly war against the Saddam regime for the declared goal of finding Iraq's weapons of mass destruction that have yet to be found. George W. Bush has not changed his attitude

toward Iran, consistently emphasizing punitive actions in an attempt to force Iran to abandon its nuclear program. This reliance on coercive diplomacy will make the arguments of the proponents of a nuclear option for the NNWS in the Middle East aimed at deterring the U.S. subversion or invasion more forceful. The NNWS in the Middle East favor a fundamental change in the attitude of the NWS which refuse to forsake the policy of first use of nuclear weapons, in retaliation to a biological/chemical attack. More specifically, there are demands to change the announced US policy of a pre-emptive nuclear attack on a non-nuclear hostile state.

Thirdly, the existence of Israel's nuclear arsenal has increased the risk of accidental and "insane" use, and would induce NNWS in the region to seek a nuclear deterrence capability. A significant degree of distrust has been expressed with regard to the verification of arms control treaties and agreements. In a few cases, this skeptical attitude has been justified. For example, Iraq was a party to the 1925 Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare (the so-called Geneva Protocol), but violated the treaty by using the prohibited chemical weapons in the 1980s. Another disturbing occurrence has been the continuous unwillingness of the United States and China to ratify the Comprehensive Test Ban Treaty (CTBT). A number of confidence and security building measures especially in the transparency areas can be initiated multilaterally. Equally important is intensified international efforts to persuade the three unofficial members of the nuclear club (i.e., India, Israel and Pakistan) to contemplate signing and ratifying the NPT and the CTBT. Perhaps the most sensible and politically-reassuring CBMs is the creation of a nuclear weapon free zone to protect regional states against possible nuclear wars on their territories.

Notes

[1] Jonathan Medalia, *Robust Nuclear Earth Penetrator Budget Request and Plan, FY2005-FY2009*. Washington, DC: Congressional Research Service, the Library of Congress, April 9, 2004

[2] See the account by the British journalist who interviewed Mordechai Vanunu for the *Sunday Times* in 1986. Peter Hounam. *The Woman from Mossad: The Story of Mordechai Vanunu & the Israeli Nuclear Program*. London: Vision, 1998.

[3] Taysir Nashif. *Nuclear Warfare in the Middle East: Dimensions and Responsibilities*. Princeton, NJ: the Kingston Press, 1984, p. 43.

[4] For the details of how Israel's nuclear weapons program evolved, see Avner Cohen, *Israel and the Bomb*. New York: Columbia University Press, 1998; and Seymour Hersh,

The Samson Option: Israel's Nuclear Arsenal ***and*** *American Foreign Policy*. New York: Random House, 1991.

[5] Office of the Secretary of Defense, *Proliferation: Threat and Response*. Washington, DC: U.S. Government printing Office, 1997. <http://www.dod.mil/pubs/prolif97/toc.html>

[6] Linda S. Heard, "Bomb in Basement comes to the Fore," *Gulf News* (online edition). April 5, 2005. http://www.gulf-news.com/Articles/print.asp?ArticleID=159400 and Robert S. Norris, William M. Arkin, Hans M. Kristensen, and Joshua Handler. "NRDC Nuclear Notebook: Israeli Nuclear Forces, 2002," *Bulletin of the Atomic Scientists*. September/October 2002, pp. 73-75.

[7] United States Congress, Office of Technology Assessment, *Proliferation of Weapons of Mass Destruction: Assessing the Risks,* Washington, DC: Government Printing Office, August 1993, p. 64.

[8] Ibid, p. 26.

[9] For the text of the agreement between Iran and the IAEA for application of safeguards, refer to: The IAEA Information Circular, *INFCIRC/214*, 13 December 1974. Available at http://www.iaea.org/Publications/Documents/Infcircs/Others/infcirc214.pdf

[10] The Iraq-based MKO was formed in the 1960s to combat the Shah's regime, and is designated a terrorist organization by the United States and the European Union for its involvement in terrorist activities. See, US State Department, The Office of the Coordinator for Counterterrorism, *Background Information on Foreign Terrorist Organizations* , October 8, 1999. Available at http://www.state.gov/s/ct/rls/rpt/fto/2801.htm#mek; and US State Department, The Office of the Coordinator for Counterterrorism, *2001 Report on Foreign Terrorist Organizations*, 5 October 2001. Available at http://www.state.gov/s/ct/rls/rpt/fto/2001/5258.htm

[11] IAEA. Iran Signs Additional Protocol on Nuclear Safeguards: Signing Ceremony Takes Place at IAEA, 18 December 2003 Available at http://www.iaea.org/NewsCenter/News/2003/iranap20031218.html; and for the text of the so-called Paris Agreement between Iran and the (E3/EU) signed in Paris on 15 November 2004, see: IAEA Information Circular, INFCIRC/637, 26 November 2004. Available at http://www.iaea.org/Publications/Documents/Infcircs/2004/infcirc637.pdf

[12] The Osiraq nuclear research reactor was purchased in 1976 and was part of Iraqi Tuwaitha research Center. Israel attacked Iraqi nuclear reactor on 7 June 1981. "Israel's Osirak Attack," in *Radical Responses to Radical Regimes: Evaluating Preemptive Counter-Proliferation,* McNair Paper Number 41, May 1995.

[13] Reuel Marc Gerecht, "The Mullahs' Manhattan Project," *AEI Online*, Monday 9 June 2003. Available at <http://www.aei.org/include/news_print.asp?newsID=17665>

[14] See, "IRGC Commander: US, Israel not in a Position to Attack Iran," Islamic Republic News Agency (*IRNA)*. Wednesday, 24 November 2004. Available at <http://www.irna.ir/en/news/view/line-17/0411241155182014.htm> and ""IRGC highly Prepared to Respond to Foreign Threats, Commander," *IRNA*. Wednesday, 26 January 2005. Available at <http://www.irna.ir/en/news/view/line-17/0501260943173029.htm>

[15] Akaki Dvali, "Will Saudi Arabia Acquire Nuclear Weapons?" *NTI Issue Brief*. March 2004. Available at http://www.nti.org/e_research/e3_40a.html; Ewen MacAskill and

Ian Traynor. "Saudis Consider Nuclear Bomb," *Guardian* (online edition). Thursday 18 September 2003. Available at http://www.guardian.co.uk/international/story/0,,1044380,00.html#article_continue; Richard L. Russell. "A Saudi Nuclear Option?" *Survival*. V. 43, N. 2 (June 2001): 69-80; Michael A. Levi, "Would the Saudis Go Nuclear?" *The New Republic,* June 02, 2003. Available at <http://www.brook.edu/printme.wbs?page=/pagedefs/32a9cfb4b170ff3c5db68ee50a1415cb.xml>

[16] "U.S. Arms Clients Profiles- Saudi Arabia." *Arms Sales Monitoring Project*, the Federation of American Scientists. Available at http://www.fas.org/asmp/profiles/saudi_arabia.htm

[17] Robert Windrem, "Is Egypt Ready to Go Nuclear? Experts Worry about Cairo's Super Weapons Program," *NBC News*, 15 March 2005.

[18] Argentina and Chile (in January 1994), Brazil (in May 1994), and finally Cuba (in March 1995) signed the treaty. Furthermore, Cuba ratified it on 23 October 2002. For details of the treaty status see, http://disarmament.un.org:8080/TreatyStatus.nsf/0/7093693e091f11018525688f006d233a?OpenDocument

[19] IAEA, "Tlatelolco Turns Thirty," IAEA Bulletin. V. 39, N. 4, December 1997. http://www.iaea.org/Publications/Magazines/Bulletin/Bull394/tlatelolco.html

[20] In the Middle East region, only nine countries (i.e., Bahrain, Jordan, Kuwait, Libya, Morocco, Oman, Qatar, Turkey and the UAE) have signed and ratified the CTBT. Four other regional states (i.e., Egypt, Iran, Israel and Yemen) have signed but not ratified this treaty. Of course, two NWS (China and the US), which should be asked to sign the NWFZME treaty, have yet to ratify the CTBT. See, "Fact Sheets- The Status of the CTBT: Signatories and Ratifiers," *Arms Control Association.* January 2005.

[21] According to the the latest status report on the NPT's Additional Protocols to Nuclear Safeguards Agreements, as of 16 June 2005, only seven Middle Eastern countries are among the 98 states-parties which have signed the Additional Protocols. These states with the date of of signature in the parentheses include Iran (18 December 2003), Jordan (28 July 1998), Kuwait (19 June 2002), Libya (10 March 2004), Morocco (22 September 2004), Tunisia (24 May 2005), and Turkey (6 July 2000). Jordan and Kuwait are among the 67 state parties which have concluded Additional Protocols that are now in force. See IAEA. "Safeguards and Verification— Strengthened Safeguards System: Status of Additional Protocols," Available at http://www.iaea.org/OurWork/SV/Safeguards/sg_protocol.html

Some ways to re-engage the nuclear dimension of global security now that the post-Cold War inter-regnum is truly ended[1]

by Gwyn Prins

"…the nuclear weapons question is shaped by self-denying hypotheses as well as self-confirming ones."

"What we expect the least may cause us the greatest damage and shock."[2]

The essence of the 1955 Russell-Einstein Manifesto, which launched the Pugwash Movement among the atomic scientists, was, that confronted with the new threat posed by nuclear weapons, humanity had to learn to think in a new way. Misplaced transpositions from other areas of strategy or politics and rigidity of thought could be world killers. Bertrand Russell had already demonstrated what some found to be a shockingly tough-minded flexibility of thought. During the period of American monopoly he had advocated threat or use to compel Soviet non-acquisition. Once the Soviet weapon was shown to be viable, he immediately switched to a policy of universal nuclear disarmament. As this essay will suggest, Russell's conundrum may soon acquire a new resonance in the early 21st century world.

But the resonance is not upon that point only. Since the implosion of the USSR in 1989-91 a similar magnitude of challenge has been gradually emerging. It has been a back-ground feature – never the primary motivator - of several episodes, notably in the Middle East, South and East Asia. But it has grown quickly in scale and visibility since the ending of the post Cold War inter-regnum. This ending began on 11 September 2001 in Manhattan, was accelerated with the fall of Saddam Hussein in 2003 and was completed on 1 June 2005 in The Netherlands. How should we think about the nuclear question in the face of the 21st century now that it has really arrived? George Quester poses the Russell-Einstein point once again.

II

This essay is not prescriptive. It is an exercise in conceptual and political navigation. In order to know where we might or should go, we first need to know where we now are and therefore from where we have come. I suggest that we now know with increasing certainty and clarity four things about the Cold War nuclear regime and that these four things should influence how we view the nuclear question now.

The first two are related in that the judgement which is the second emerges from the mixture of facts and judgments that are the first. This first is that there is no convincing direct or circumstantial evidence to believe that formal Western nuclear deterrence doctrine ever worked between enemies. However, there is a persistent suggestion that it did once work between *friends*. Israel was under great pressure in the early stages of the 1973 Yom Kippur war and urgently needed replenishment of munitions inventories which the USA was reluctant to do. However, the hinting – including by deployment of medium-range rocket delivery systems onto the battlefield where they were visible to satellite surveillance - that the prospect of conventional defeat would force Israel to unveil and employ nuclear weapons, was followed by a heavy airlift of war stocks from US bases in Europe.

By an extension of the implicit point that deterrence is only possible where there is a high level of familiarity between the parties, there is a case to be made that each Cold War side was more likely *self*-deterred by its own knowledge of its own nuclear potentials than by believing the other's threat. Hence mutual self-deterrence. We cannot know for certain. But what we do now know is that the western version of deterrence as chess was never believed or employed by the Soviets. That logic was best explained in the essay included within the British 1981 Statement on the Defence Estimates written by Michael Quinlan the then Deputy Under-Secretary (Policy & Programmes) and consistently the most cerebral and clearly expressed defender of the independent British nuclear capability. The fallacy of the chess version had been the case made most weightily in the work of the western strategic "heretics" of that time: Christopher Donnelly and James Sherr, and, most especially on Soviet blitzkrieg and nuclear doctrine, David Holloway, Michael MccGwire and Peter Vigor.[3] Their view has been now largely confirmed *ex post facto* from the FSU and DDR archives.

The second thing upon which I think that we can rely with increasing confidence is therefore the judgement that circumstantial evidence suggests that the most we can claim for nuclear deterrence is what McGeorge Bundy called "existential deterrence." This asserts that already cautious nuclear superpowers were

made more cautious, perhaps most by self-deterrence, but not proof against accident.[4]

The third is not surprising if the first two were indeed the case. We were very lucky to have survived the gravest episodes of mutual misunderstanding during the Cold War. Robert McNamara and James Blight have revisited the Cuban Missile Crisis now that the other side of the encounter is open both to archival research and, in McNamara's case, to conversation with, for example, the commander of the atomic torpedo-armed Soviet submarine squadron deployed to the Caribbean. These researches have confirmed intelligence mis-assessments and consequent risks.[5] But from what we now already know, the "Able Archer" crisis of 2-11 November 1983 was probably riskier even than the Cuban Missile Crisis. It escalated to the point where Soviet "Backfire" QRA (quick reaction alert) aircraft in the DDR were armed and on so-called "hot stand-by," with engines running, at the runways, before being stood down.[6]

The fourth aspect of this history now in view is that we can see more convincing reasons to explain observance of any of the formal arms control agreements, and most especially the NPT, than belief in the substantive efficacy of those treaties or their ancillary multilateral institutions. Nuclear decisions for all three conditions of possession – declared, opaque and that of non acquisition - are all more convincingly explained by *raison d'état,* which includes good behaviour bonuses and oblique bribes for states and their leaders.

III

The second necessary framework which we require to be able to make a grounded assessment of the nuclear dimension is, of course, a view of the defining political topography of our times. What can we assert with any conviction, on evidence, about the shape of our new age?

First, that the modern wars of religion have ended by the defeat of Marxism (hard and soft) in almost all places. Bitter-enders remain in Cuba, North Korea, Zimbabwe and other pathological places, and in parts of the South African African National Congress. The habit of heroic determinism and of its associated self-confidence (*enarqisme* may be coined as the term of art) which Marxist analysis breeds, reinforced national tendencies and remains in the minds of the majority of the French political elite which remains the last, least *demarxisé* in Europe; and of course a last hold-out is among well-upholstered European federalists of the Brussels *nomenklatura*. Fundamentally the same arrogance is to be seen, horribly exaggerated, in the quick and brutally murderous ruthlessness of the Chinese Communist Party towards its presumed opponents. Contemporary China's disregard for human rights is in its way as awful as the more

intensive and better-known killings by the Khmer Rouge in Cambodia. But whether or not these groups accept it, we all again inhabit a familiar world regulated by balance-of-power (more soft than hard power) *realpolitik*. However it has a difference; for it contains a liberal cosmopolitan ethic (R2P – the Responsibility to Protect human rights under threat from pathological governments) which was one of the few pieces to be rescued from the train wreck of the UN's 60th anniversary summit in September 2005.

Second, and related to the last point, all forms of warfare have been in decline since 1991, except civil war. Third, and related in turn again, that the post-colonial state settlement is waning rapidly in Africa and west Asia: Burma to Zimbabwe via Sudan are the current genocidal scandals.

Fourth we may observe that the draining of much power from the mid 20th century multilateral institutional regime and transformation of the residue, is now nearly complete. NATO's formal functions have been transcended since 2001/2 and Afghanistan after the USA failed to exploit the Article V mandate voted immediately after 9/11.[7] Co-ordination of the actual use of military force has moved to the successor informal alliance of the Anglosphere, where Australia, the UK and US are the principal militarily active members. Such uses of force conform so much more closely to Just War criteria than was ever possible in the 20th century, that it may change the moral balance on the last resort assumption.[8] The "European Union" project was mortally wounded on 1 June 2005 by the Dutch rejection of the federal constitution, and is now rapidly dying, although this obvious fact is currently obscured by extensive denial in the Brussels *nomenclatura*. The UN faced its reckoning in September 2005 and emerged diminished from the 60th Anniversary Summit, with only the agreement to endorse the principle of R2P and a watered-down statement on terrorism as cold comfort. Basically the "global south" reneged on the implicit grand bargain: its leaders wanted free money from development aid promises and presumed added power from enlargement of the Security Council but were not in the end willing to give the North what it wanted in the struggle with unconditional terrorists in particular. So they got neither.

Awkwardly for the liberal consensus, the fact was that it was the Egyptians, not the Americans (who provided viable language on the topic) who blocked the agreement on anything to do with the prevention of nuclear proliferation. It is true, however, that the 2005 Indo-American agreement to provide deep civil nuclear assistance to India without conditions on its military nuclear capacity, side-lined the NPT. But the decision was neither isolated nor inconsistent and should be seen geo-politically, alongside the transfer of other fundamentally important technologies from America to India. These range from clean-coal

burning technology to critical software for building fighter warplanes. With source code the Indians can also build fighters for export – unwelcome news at Dassault. These are all proofs of America's commitment to building up India as the democratic, English-speaking, demographic Asian superpower of the 21st century: an essential counter-balance in the emerging, American-pivoted concert with reassertive Japan after the Koizumi revolution and transitional authoritarian China. It is another wing of George Bush's audacious policy to promote democracy in tough neighbourhoods and should also be seen along with the rising importance of the Indian-American community in domestic American politics. (30% of the contributions to Hillary Clinton's campaigning funds are reported to come from this community which is rapidly eclipsing the Jewish community in these sorts of roles.) In such developments and in the detail of the 60th anniversary summit, we may see the UN beginning to pass into the shadows. The 60th birthday party was the UN's equivalent moment to Queen Victoria's Diamond Jubilee of 1897: the fleet was reviewed in splendour but Rudyard Kipling's poem for the occasion was correctly entitled "Recessional."[9]

Fifth, we may observe that "people power" in democratically dysfunctional areas is waxing. It is spreading from the "Velvet revolution" in eastern (1989) to the Dutch Referendum street politics in western (2005) Europe via the "colour revolutions" in the former Soviet space, into the Arab Muslim world (2002-3) and to be expected in east Asia. There the Burmese military junta has fled to the hills to escape the western retribution that it anticipates, and in November 2005, President Bush bluntly warned the leaders of the CCP to abandon attempts to control freedom of information and of belief and instead to prepare for a mainland Chinese future that looks Taiwanese. Simultaneously, the Communist regime had second thoughts about allowing the printing of foreign newspapers for fear of a contagion of "colour revolution"; but it will be a futile gesture. The colours will eventually come. Happily, no repressive regime can stand forever against the force of the information technology revolution, especially not one that is simultaneously wishing to integrate into the world capitalist economy.

IV

So what can we deduce to be the status of nuclear *weapons* in this new world?

First, that the threat of catalytic and uncontrollable escalation from most formal nuclear use by declared state actors has been much diminished. This has been accomplished by de-alerting, by stock-pile reductions and by the withdrawal of MIRVed, tactical and battlefield nuclear weapons. But although now species-survivable, especially from precision kiloton yield and Enhanced Radiation (neutron bomb) warheads, this probably does not make tactical next use

by declared owners more likely. It is a common but significant error to confuse doctrine with intention. Ironically, it is via the preferred strategies of nuclear disarmers of the 1980s, of freeze and deep cuts (although not adopted for altruistic reasons), that we are now back to a Bundy "existential deterrent" posture, with the new Russian submarine-based nuclear force, also ironically, replicating the western Cold War doctrine and force structure.

Secondly it appears that given the success for its national interests of the Israeli posture, the attractions of opaque proliferation[10] are likely to grow, especially for Japan, in an era of eroding multilateral architecture. The failure of UNSC enlargement this autumn, although expected and thus somewhat discounted before the event in Japan, could increase that attraction.[11]

Thirdly, that a capricious attack by North Korea on behalf of all Koreans on Japan (Quester's novel hypothesis) contains greater shock and disruptive potential than the more predictable next use scenarios (India/Pakistan; Taiwan Straits).[12] An India/China nuclear exchange (Quester's other declared-state hypothesis) stands moot.

V

What can we deduce and/or observe to be the status of nuclear *threat* in this new world? The threat exceeds weaponisation and embraces radiological weapons also.

The first general conclusion, offered with due caution, is that autonomous integrated capability (possessing weapons-grade explosive, a viable weapon and a efficient delivery system) developed by an unconditional terrorist non-state actor still looks unlikely. The best financed and equipped to date, Aum Shinrikyo, tried and failed. They bought tracts of Australia from which to mine their own uranium ore: they were that dedicated. But there is a further reason. 9/11 was a far more psychologically elegant and therefore efficient terrorist concept of operation than a nuclear explosion. It was technically brilliantly executed, employing the victims' own public transport systems as both weapons systems and co-ordinating systems: and it had no need for or role for nuclear materials. The same was true with the East African and Bali bombs, the Madrid train bombs and on a lesser scale for 7/7 in London. In all cases, the terrorising effect might be thought to have been inversely related to the relatively small numbers of victims, over a minimum threshold of horror: it makes the point to everyone that they too could have been randomly killed.[13]

The greatest nuclear threat after 1991 (in my view and, coincidentally in that of the late Dr David Kelly of the British Defence Science and Technology Laboratory) was the combination of former Soviet finished weapons or weapons-

grade explosive acquired by a rogue state with the will and technology to weaponise and to deliver.

The prime candidate was Saddam Hussein, who we know pursued just this route after 1991. The public furore over the nature of the mass destruction threat that his regime posed was entirely misdirected, with help from Mr Blair's spin-doctors. The UN inspectors by and large were looking for the wrong things; but happily Saddam was taken down. This has had a demonstration effect in two directions – Iran (maybe) N Korea (probably) looked at Saddam's fate and decided to press forward. Libya (more certainly) decided to pull back. Turning Gaddafi was probably the biggest boost to global security of the past decade. It broke open the A.Q. Khan network and gave pause for thought to other Muslim aspirants. The tornado of anti-americanism which both precipitated and obscured the debacle over dealing with Saddam, has, as collateral damage, severely decommissioned the multilateral nuclear agencies (NPT, IAEA) as primary agents in the next phase, as the Annan High Level Panel candidly acknowledged.[14] By playing politics openly, neither al-Baradei nor Hans Blix especially helped themselves or the multilateral agencies.

The latent threat in the former Soviet arsenal remains the single greatest source of material danger. So-called "loose nukes" are probably – ironically - a declining risk. The risk declines in parallel to the extinguishing of the democratic moment in Russia. Putin's grip tightens and FSB/police security at nuclear sites is seen to improve. The greater threat is probably from ill-accounted weapons-grade materials that can be stolen, bought from criminals or in other ways, covertly procured. Some has been and is being blended down under the Global Threat Reduction Initiative; but as the Annan High Level Panel notes, it is not enough and not fast enough.[15] A third form of threat, which could translate into radiological weapons, resides in unaccounted high-level waste and is a huge problem. It has been fitfully addressed by the Nunn/Lugar Cooperative Threat Reduction Program, and more consistently by British and French technical programmes. The zeroing of the Clinton programmes by the first G.W Bush administration and consequent loss of time, was one of its single most damaging foreign policy decisions of those years. The Kola Peninsula is still the world's top nuclear risk location.[16] Radiological terrorism (a "dirty" bomb) is plainly a practical possibility.

VI

So, arising from this brief review, what aspects of the nuclear question does it suggest that we should we view with particular priority at the sixtieth anniversary of the Hiroshima bombing? The issues of taboo, pre-emption and moral

pollution stand forward.

Given that automatic catalytic escalation now no longer looms as once it did, the first is the question of the "taboo" and is the one ventilated by George Quester. Would a next use break the taboo or reinforce it? There is no abstract answer. He believes, and I agree, that the answer will be entirely situation specific. Therefore there is a thought experiment for the reader to conduct. How is that judgement of breach or reinforcement affected by (i) scale [neutron bomb on military formation in the desert; a large explosion on open city; a radiological contamination] (ii) identity of perpetrator [especially race] (iii) identity of victim (especially race]?

In a world of rapidly eroding multilateral institutions, and especially of declining trust in good faith within agreements, we need to focus upon the ethics, legality and politics of policing by pre-emption. The change of informed public mood about Israel's pre-emptive destruction of the French-supplied Osirak reactor is an interesting litmus-test. Rather in the same way that the strict abhorrence for intervention, even in defence of human rights, that was felt in 1991 and which helped worsen the Balkan crisis, has given way to an emerging norm of the responsibility to protect (R2P), it seems that there is a grudging common-place that Israel did the right thing. To the narrow defence of self defence against imminent threat, which has never been generally discounted, is now to be added the subsequent elaboration of the case for pre-emptive actions being developed in customary international law. The "Caroline" case of 1837 is one root stock.[17]

The test of this will likely be over the nuclear ambitions of the current Iranian government. It is already plain that the tri-partite European diplomatic attempt to halt the Iranian programme has, at best, slowed the rate of advance in the Iranian military nuclear programme and at worst, given covert space and time. I have little doubt that if it becomes clear that there is no intention to cease and equally that there is no internal Iranian counter-balancing political force to stay the programme, then direct force will be used by the USA and one or two close allies. That of course is predicated upon an unimpeachable case being made and sustained: no spin-doctoring diversions as occurred over the removal of Saddam. In this respect, the information given from Tehran itself – latterly confession of attempts to obtain weapon designs – make that case without need for dodgy dossiers, as was so damagingly done in the case of the Iraq war. I have equally little doubt that while there will be predictably furious reflexive anger in some quarters, there will eventually be general and generally tacit support.

But we are not yet to this point; and one must hope that the credibility of the threat of it will be an efficient deterrent that produces a less violent conclusion to Iran's nuclear weapons' ambitions. Behind this episode stands another

less well-accepted – indeed, resisted - facet of the emerging norm of the responsibility to protect human rights. The threat from nuclear capability resides more in the identity of the possessor than in the technology itself, as used to be the case during the Cold War era. This insight requires an act of tough-minded flexibility of thought equivalent to that of Bertrand Russell at the beginning of the nuclear age.

The third issue for attention is that of the relationship of nuclear possession to the higher political virtues. Are there models of political dispensations where a *modus vivendi* has been struck between working democracy, the presence of fundamentalist religious groups in a heterogeneous mix, mortal threats to national survival, terrorism and the opaque presence of nuclear weapons? I can think of one case only. So is Israel's experience the one which pre-figures the shape of a physically and morally survivable nuclear future in the world that, for better or worse, we seem now to inhabit?[18]

Notes

[1] This essay is derived from a lecture entitled "The nuclear dimension" delivered on 28th June 2005 at Wilton Park, the Foreign Office conference centre, in the context of a conference on possible future trends and threats of mass destruction from chemical, biological and nuclear means. I am endebted to Dr Richard Latter, Director of Wilton Park, for the invitation to participate, and most especially, to Professor John Simpson, Director of the Mountbatten Centre for International Security, University of Southampton, my colleague who lectured formally on the same topic, for the valuable navigational "fix" which his paper provided for mine – I hope, reciprocally - and for his incisive critique; also to all the conference participants who entered into the spirit of the exercise and offered their views both at the time and later, on the draft of this essay at its first revision. I wish to thank Professor George Quester for his comments on the pre Wilton Park draft notes. The draft was then presented to a working group during the 55th Pugwash Conference on Science and World Affairs in Hiroshima, Japan, on 25th July 2005. I am grateful for further critique and especially for comments and materials from Dr Jeffrey Boutwell, Executive Director of Pugwash. I take sole responsibility for all errors as well as the views expressed, of course.

[2] G.H.Quester, "If the nuclear taboo gets broken," *Naval War College Review*, 58 (2) 2005 pp 71-93

[3] "Nuclear weapons and preventing war", *Statement on the Defence Estimates1981*, Cmnd 8212-1 HMSO April 1981, pp 13-14. Sir Michael enlarged on the logic of this essay in "Preventing war", an essay in *The Tablet*, 18th July 1981, which became the impetus to a correspondence with Fr Roger Ruston OP. Their exchange is discussed in C.Longley, "Challenge on moral issues of nuclear policy," *The Times*, 31st July 1981; C. Donnelly, *Red Banner: The Soviet Military System in Peace and War*, Jane's Information Group, London, 1988; J. Sherr, *Soviet Power: The Continuing Challenge*, Macmillan, London, 1987; David Holloway, *The Soviet Union and the Arms Race*.

2nd ed., Yale University Press, New Haven, 1984.; M. MccGwire, *Military Objectives in Soviet Foreign Policy,* Brookings Institution, Washington DC, 1987; P.H.Vigor, *Soviet Blitzkrieg Theory*, St Martin's press, London and NY, 1983

[4] McG Bundy, "The unimpressive record of nuclear diplomacy" in (ed) G.Prins, *The Choice: Nuclear Weapons versus Security*, Chatto & Windus, London, 1984, pp. 42-54

[5] J.G.Blight, *The Shattered Crystal Ball: Fear and Learning in the Cuban Missile Crisis,* Savage, Rowman & Littlefield, New York, 1990; J.G.Blight with Robert S. McNamara *Wilson's Ghost: Reducing the Risk of Conflict, Killing and Catastrophe in the 21st Century*, PublicAffairs, New York, 2001, pp 6-8, and in particular anecdotes related by McNamara during the launch of this book at the Woodrow Wilson Center for Scholars, Washington DC; McG Bundy, *Danger and Survival: Choices about the Bomb in the first fifty years*, Random House, New York, 1988, pp 391-62

[6] This was an exercise rehearsing communications and command protocols for authorising the launch of nuclear weapons from submarines which was misinterpreted by Soviet covert watchers who under KGB Operation Rian had been watching precisely for signs of a western de-capitating strike under guise of a military exercise. Despite urgent warning conveyed via the British from Colonel Gordievsky, a western agent inside the KGB, the Americans failed to take the matter sufficiently seriously. The Soviet leaders under the physically ailing, probably depressed and possibly paranoid General Secretary Andropov took fairly advanced steps to prepare a countervailing nuclear attack. For more description see G.Prins, *The Heart of War: On Power, Conflict and Obligation in the 21st Century,* Routledge, 2002, pp 32-3; for a description and an evaluation by Robert M Gates (former DCIA) see R.M.Gates, *From the Shadows*, Simon & Schuster, New York, 1996, "1983:the most dangerous year" pp 258-73. "Able Archer" is discussed at pp. 270-73

[7] For further discussion of this point, see G.Prins, "9/11 and the Raiders of the Lost Ark," *Cornell International Law Journal,* 35, 2002

[8] (eds) C. Reed & D. Ryall, (for the Church of England Archbishops' Council & The Catholic Bishops' Conference of England & Wales), *The Price of Peace: Just War in the Twenty-first Century,* Cambridge University Press, forthcoming, *passim* and within that G.Prins, "Conditions for *ius in pace* in the face of the future."

[9] "…Far called, our navies melt away/On dune and headland sinks the fire/Lo, All our pomp of yesterday/Is one with Ninevah and Tyre!/Judge of the Nations, spare us yet/Lest we forget - lest we forget!"

[10] The term was coined by Avner Cohen. A.Cohen, *Israel and the Bomb*, Columbia University Press, New York, 1998. See also G.M.Steinberg, "Deliberate ambiguity: evolution and evaluation" in (ed) L.R.Beres, *Security or Armageddon: Israel's nuclear strategy*, Lexington Books, Lexington MA, 1986, pp 29-43. In practice, it appears that Israel has developed two different types of nuclear capability: one of large, long-range thermo-nuclear weapons intended originally to modify Soviet behaviour; the other of sophisticated short-range, low-yield weapons integrated into its battlefield options.

[11] G.Prins, "Lord Castlereagh's Return: The Significance of Kofi Annan's High Level Panel on Threats, Challenges and Change," *International Affairs,* 81 (2), 2005

[12] J.Singh, "Beyond Kargil," in (ed) J.Singh, *Kargil 1999: Pakistan's Fourth War for Kashmir*, IDSA/Knowledge World, New Delhi, 1999, pp 212-240. The tragedy of the 2005 Kashmir earthquake has served in one positive respect as a catalyst for improved regional co-operation, a dynamic which is strengthening as time passes from the event: another example of the Law of Unintended Consequence.

[13] This conforms with one of the defining criterion within the best single definition of terror, to be found in C. Gearty, *Terror*, Faber & Faber, 1991

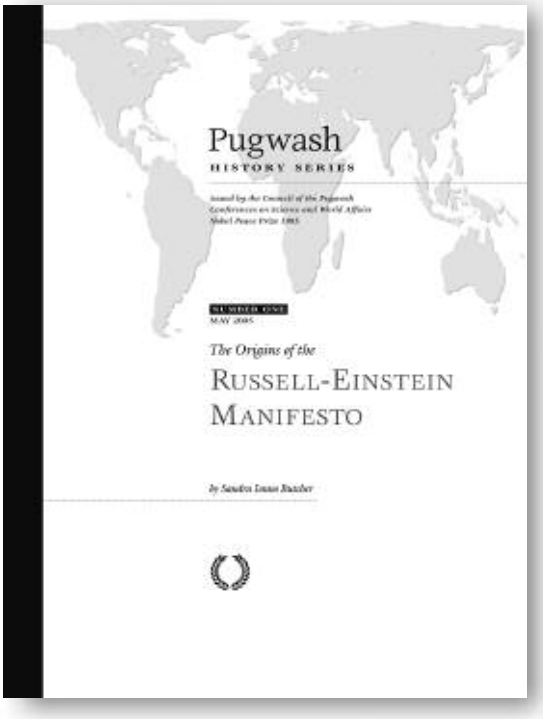
[14] High Level Panel, paras 109-10, p.39; M.B.Maerli and L van Dassen, "Eliminating excessive stocks of highly enriched uranium," *Pugwash Issue Brief*, 3 (1) April 2005, p.3

[15] High Level Panel, para 135, p.45

[16] for a short inventory see G.Prins, "Nuclear disaster may still be averted," *Pugwash on line,* http://www.pugwash.org/reports/nw/nw8c.htm; at length - Ronny Bergman and Alexander Baklanov, *Radioactive sources of main radiological concern in the Kola-Barents region*, FOA, Sweden 1998

[17] On this generally see C. Greenwood, "International Law and the pre-emptive Use of Force: Afghanistan, Al-Qaida and Iraq," *San Diego International Law Journal*, 4 (7) 2003, pp 7-37

[18] Note that Quester suggests that the more segregated Israelis and Palestinians become, the greater the temptation for an eventual Arab nuclear possessor – state or non-state – to obliterate the state of Israel. Is that credible? Certainly the episode of President Ahmadinejad's announcement that Israel should be wiped off the map gives a literal and chilling edge to the question.



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