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UNAI Charter
Publications

世界平和への歩み

ノーベル平和賞受賞者が語る

Pathways to Peace - for building a culture of Peace
Interviews with Three Nobel Peace Laureates

We Believe

J. F. Oberlin University
桜美林大学国連アカデミックインパクト Hub1 テキスト出版委員会
J. F. Oberlin University UNAI Charter Hub1 Publications Committee

To all students,
who pursue world peace and sustainable development and learn for "The Future We Want",

and to my esteemed friend Michael Adams, a deceased former President of Fairleigh Dickinson University,

who was an excellent leader of IAUP(International Association of University Presidents) , the World Higher Education Leaders' Society,

who worked together with a great resolution as a partner for building the globally minded higher education community, these highly worthful documents are dedicated with deeply affectionate thanks.

Toyoshi Satow J.F. Oberlin University

United Nations Academic Impact (UNAI) is a global initiative that aligns institutions of higher education with the United Nations in actively supporting ten universally accepted principles in the areas of human rights, literacy, sustainability and conflict resolution. The Academic Impact also asks each participating college or university to actively demonstrate support of at least one of those principles each year.

The critical role of higher education in economic and social development as well as foundation for world peace is widely acknowledged. Only lacking is the resolve and action of academic leaders around the world. By formally endorsing the ten principles in the Academic Impact, institutions make a commitment to use education as an engine for addressing global problems.

The International Association of University Presidents (IAUP) is an association of university chief executives from higher education institutions around the world. IAUP is a NGO (Non-Governmental Organization) holding the highest (ECOSOC) consultation rights at the United Nations and formal consultation rights with UNESCO. IAUP has been involved with the UN Academic Impact Program since its very beginning. IAUP took an active role in developing these principles and now hosts the website(http://academicimpact.org/) through which universities may join the initiative.

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PROLOGUE

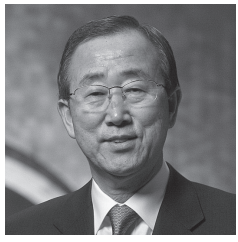
INTERVIEW

PROLOGUE

Message on the occasion of the publication of "UN Academic Impact"

Message from the United Nations

Ban Ki-moon
Secretary-General of the United Nations



— Message on Disarmament for UN Academic Impact Publication issued by J.F. Oberlin University (Japan)

Disarmament is one of the most pressing issues of our times. With the stakes so high for global stability and human well-being, it is extremely important that young women and men take a pro-active stand to demand that their leaders rid the world of nuclear weapons and dramatically cut conventional weapons as well.

At a time of pressing social needs, worldwide military expenditures, including weaponry, are more than $1.5 trillion annually. Surely such sums can be more profitably and creatively invested in fighting poverty, mitigating and adapting to climate change, improving food security, and ensuring health and education for all.

With the winds of change blowing in many parts of the world, especially in the Middle East and North Africa, we have seen the mobilizing power of today's youth as well as their commitment to democratic change. I call upon them to make a nuclear-weapon-free world an integral part of the new social and political contract they are seeking.

Nuclear disarmament has been a top priority since my earliest days in office. The five-point plan that I presented on United Nations Day in 2008 remains a clear blueprint for pursuing the common goals of nuclear disarmament either through a new convention or through mutually reinforcing instruments backed by a credible system of verification.

While governments will be the primary actors in bringing this plan to fruition, we also need a global coalition of willing partners -- scholars, scientists and other members of civil

society. As a driving force behind technological innovation and socio-economic change, young people have the vision and energy to spur the transformation we need. The United Nations, for its part, will always be on your side.

I commend the initiative taken by J.F. Oberlin University in Japan, in partnership with the United Nations Academic Impact (UNAI), to produce this publication. As the UNAI global hub on "education as a means to fulfil the principles and purposes of the United Nations Charter", J.F. Oberlin has, by this effort, contributed to the realization of the very first mandate in that document, to "save succeeding generations from the scourge of war".

By aligning institutions of higher education with the United Nations — and with each other — the UN Academic Impact offers a valuable platform for exploring new ideas and initiatives. I look forward to working more closely with students, faculty and university leaderships throughout the world in pursuit of our shared goals and the future we want.

To Live and Work Together for the Common Good

Toyoshi Satow
Chancellor
J.F. Oberlin University, Tokyo

The first decade of the 21st century is already over. We are now living in the second decade of this new century. After the wars of the 20th century, at the beginning of the new century we prayed for World Peace. Now look at our world. Have we freed ourselves from wars and started creating a better world?

The 20th century was the age of emerging sciences and technologies. The radio was invented at the beginning of the 1900's in the United States. In Japan, a radio broadcasting system was first introduced in the 1920's. Who could have imagined, just a century later, this modern global society with highly advanced information technologies and networked systems?

It was 1903 when Wilbur and Orville Wright invented the first airplane and achieved manned, powered flight. A century later, in today's world, hundreds of thousands of airplanes take off and land every day. In fact, airplanes have become indispensable, greatly contributing to internationalizing societies. Those who lived in the time of the Wright brothers probably couldn't have even dreamed of these developments. How much more incredible is it that shuttles fly into space to dock with space stations!

On one hand, the rapid advancement of sciences and technologies has improved the quality of human life. On the other hand, however, the power of modern technology has brought enormous destruction. It turbulently affected people's lives and social structure. The last century was epitomized by world wars, regional disputes, ethnic conflicts, economic crises, and environmental disruption. The strong demand for social revolution by the working class and nationalism rising from small European nations gradually resulted

in the conflicts leading to the first Great War and the Russian Revolution. More than ten million people died or were seriously injured in World War I, and nuclear weapons in World War II took the world to the precipice of anguish and desolation. The 20th century was the age of war for nations and ethnic minorities.

We are now living in the age of speed. The speed of technology and its impact on society is exhilarating. What was new just a few years ago is already obsolete. Education, which is expected to instruct people to deal with the speed, cannot keep up with the speed. Only a decade has passed since the beginning of the 21st century. We may not be aware yet of all the changes in this decade. However, by the time we move into the 22nd century, we will live in a world with new sciences and technologies that those alive today could never have imagined. Education that prepares the next generation for their future must keep up with this speed.

The 21st century is also the age of collaboration across boundaries. We need to support with each other across countries, regions, cultures, religions, and societies. Efforts for friendship and harmony will bear new fruit. I often call this "KYOSEI" in Japanese. KYOSEI is to live and work together for the common good. In this sense, the United Nations Academic Impact (UNAI) program is momentous. Hundreds of colleges and universities throughout the world will commit themselves to the 10 principles for a better world of peace and development through this program. We as higher educational institutes must work together to build an academic circle, and UNAI is the ideal platform to realize this collaboration so that higher education can lead the world toward peace and harmony.

J.F. Oberlin University, Tokyo, is committing itself to this project as the hub institution for Principle One. We are delighted to be able to publish this textbook as a resource for young people throughout the world to learn about world peace and disarmament movements. It is our hope that this textbook will be used in many countries as a tool for global learning to motivate the youth of the next generation to work and live together peacefully as international citizens. I would like to show my greatest respect and appreciation to the United Nations and the International Association of University Presidents for all the support they have provided to make this possible.

The Great Adventure of the United Nations Academic Impact (UNAI)

Ramu Damodaran
Director,
the United Nations Academic Impact

This landmark publication is a joint celebration. Here, at the United Nations, the United Nations Academic Impact (UNAI) enters its second year, in a season of renewal and promise. And, in Japan, J.F. Oberlin University - UNAI's global hub for education in support of a commitment to the United Nations Charter - has taken the initiative to reach young minds and their teachers throughout Japan, and beyond, with a publication on a subject central to our Organization and the peoples in whose name it was established - that of disarmament,

The idea of this publication was first suggested by President Satow and his dedicated team last year. We are deeply grateful to him, and Dr. Yoshi Tanaka, for making this possible so effectively and so soon.

2011 marked the ninetieth anniversary of the founding of the Chongzhen Institute in Beijing, China, by Yasuzō Shimizu. The Institute was the immediate predecessor to Obirin Gakuen - today's J.F. Oberlin University. Central to its mission today is, in the President's words, producing "students who will never lose their hope in eternal goodness, even in face of many adversities and hardships."

The United Nations was, in many ways, created to reflect that "eternal goodness" inherent in humanity in which children, women and men could seek refuge no matter how adverse or hard their circumstances. UNAI serves through its modest but ambitious means to support that mission. It has grown into a global alliance of almost 800 institutions of higher education and research in some 110 countries committed to working with the Organization and Member States to realize common mandates and objectives. It represents

the first formal engagement by the United Nations with the dynamic community of scholarship and the energetic activities of students in a common effort to contribute to, and benefit from, the exercise of intellectual social responsibility for the peoples of the world.

UNAI has three principal objectives.
(i) to supplement the existing policy making and operational activities of the Organization with academic inputs directly relevant to an office's need;
(ii) to catalyze this community as a powerful source of support to the Organization by such engagement and
(iii) to foster partnerships between institutions on areas of common endeavor which can benefit the Organization, and the peoples of the world in whose name it was established.

In addition to the commitment to the Charter of which J.F. Oberlin is the global hub, the other UNAI principles ask member institutions to actively support a commitment to human rights; educational opportunity for all - and higher education opportunity for every interested individual - ; capacity- building in higher education systems; global citizenship; peace and conflict resolution; addressing poverty and ensuring sustainability — and the "unlearning" of intolerance. Further, a youth offshoot of UNAI has been created. Called ASPIRE — Action by Students to Promote Innovation and Reform through Education — it has already begun to vigorously engage student groups around the world to work

individually and collectively to support UNAI objectives at their level.

Much of the dynamism of UNAI will be facilitated by technology. But let us not bless technology as some sort of independent force. Technology has been made possible through the ingenuity and innovation of human minds, minds like those represented in this volume, and those who take the time to read and think about it. Those minds are our earth's richest resource, and the United Nations' most valuable asset. That is what makes UNAI so exciting.

Just think of it.

Creative thoughts and energetic ideas in every area of scholarship.

Education that is truly global.

Solutions where we need them when we need them.

Allowing the daring of imagination to offer practical results to help a child, a woman or man in a part of the world to which the scholar has herself, or himself, not ventured.

Surely this is, in many ways, what this - our - United Nations was established to do. With the United Nations Academic Impact, scholars, students, teachers and university leaders join the galaxy of artists — governmental leaders and diplomats — whose colours and imagination help create the United Nations we want to be, in a world we want to see.

Thank you for being part of this adventure.

The United Nations and the Next Generation

J. Michael Adams
President, Fairleigh Dickinson University
President, International Association of University Presidents

The United Nations represents our greatest hope to unite across borders, secure peace, promote social progress and forge solutions to the most critical problems facing humanity. But the United Nations can achieve nothing unless people are willing to join hands across borders, reach meaningful compromises and cooperate to fulfill our greatest dreams and aspirations. To cooperate globally, we must have an understanding of different nations, an appreciation for diverse perspectives and an awareness of the interconnected nature of humanity.

Our enemies are ignorance and intolerance. The path to avoiding catastrophe, the path to achieving the aspirations - the promise - of the United Nations, lies in education. And to match the universal goals and global alliances represented by the United Nations, we need to offer students around the world a global education.

Those of us who aspire to be world citizens must have an understanding of the past, but always with a view toward the future. We must understand the complexities, challenges and risks associated with decision making in the 21st century.

The United Nations was formed from the ashes of two World Wars, and its greatest success has been preventing a third global conflict. Today, the importance of the United Nations has grown even more significant as the world becomes more interdependent.

With increasing globalization, finances flow freely across continents, as do goods, services and ideas. Unfortunately, though, major problems like terrorism, pandemic diseases and environmental calamities also cross borders at will. No nation can protect its citizens against ideas or problems that do not stop for passport control.

In some ways, globalization has outpaced our ability to comprehend what's happening. Products and people, ideas and information flow freely across borders and create new opportunities and challenges. But sometimes the changes happen more quickly than we can adapt.

Education must catch up to globalization. Education must catch up to the United Nations. Through global education, we must prepare world citizens who understand the interconnected nature of our planet and who are willing to act on behalf of people everywhere. We each must spend more time learning about other cultures and other lands. Schools and universities need to introduce more international lessons, expand language programs, extend study-abroad opportunities, welcome international students and encourage cross-cultural dialogues. Schools and universities also need to fully employ new technologies to connect students with others throughout the world and introduce different perspectives on the lessons being studied.

Our students today are remarkable. They are growing up in an interconnected world where they can instantly link to ideas and individuals. They are not bothered by differences, in fact they are used to them, and they appreciate them. They believe in a better future. They believe the world needs to change, but more importantly, they believe the world can be changed, and they want to be part of it. They have the talent, the enthusiasm and the energy. All they need is the education and the opportunity.

To gain the opportunity to make a difference, our students must learn how to become

world citizens. They must learn to look at problems through the eyes of others and understand their points of view. By doing so, we not only learn more about ourselves, but we simultaneously build solidarity with those from other countries that will enable us to solve global problems.

We must understand that geography and culture influence how each of us sees the world. Two individuals might look at the same thing, but each sees something different - and neither are wrong. It should not be an issue of who is "right" or who is "wrong." We must all understand and agree that other views besides our own can also be accurate and real. We must learn to see the world through the eyes of others. When you do, it will be amazing what you can see and do.

A global education considers the world as a whole, with a rich interplay of nations, cultures and societies. Teachers must regularly bring the world into the classroom and link classrooms to the world. Students must learn to make global connections and understand that actions around the world can affect them and that they can have a global impact. A global education should break down boundaries, expand horizons and introduce learners to the breadth of human achievement and diversity. Most importantly, a global education should emphasize what all peoples share in common.

This is exactly the underlying philosophy that propels the United Nations. But modern educational systems were not built with such a global attitude. Instead, they have been designed first and foremost to develop loyal national citizens. There is nothing wrong with celebrating national heritages and traditions, however, there must also be significant

attention devoted to sharing stories from other nations. Education must enable us to understand the whole world and our role in it.

The first declaration in the Preamble of the U.N. Charter affirms the desire "to save succeeding generations from the scourge of war." Simply put, wars are cultivated by dehumanizing the "other" and exaggerating the differences between "us" and "them." This is much harder to do when we have learned about our fellow world citizens and appreciate and understand their viewpoints and their common humanity. Gaining that appreciation and understanding has never been more necessary than today.

Frankly, my generation is not doing too well in the world right now. But hope is not lost and our hope lies with education and with the next generation. As H.G. Wells once write, "Human history becomes more and more a race between education and catastrophe." We will win this race.

Having a global education and being a world citizen is the key element for peace and for all elements of progress outlined by the United Nations. Being able to look at the problems through the eyes of others reduces fears and misunderstandings that breed conflict and confusion. We must learn to work together, we must learn more about each other, and we must together build a greater future.

On the Enrichment of Education for Sustainable Development (ESD)

Teiichi Sato
Former Ambassador of Japan to the UNESCO

Teiichi Sato

ESD is the abbreviation of "Education for Sustainable Development" .The United Nations adopted a resolution at its 57th Session, in 2002, which declared the period of 2005-2014 as the UN Decade of ESD. The idea of the resolution was introduced by Japan at the occasion of "the Summit on Environment and Economic Development" held in Johannesburg, South Africa in 2002. The midterm evaluation meeting was held in Bonn, Germany in 2009, and the end of the Decade meeting is decided, by UN, to be held in Japan in 2014.

The basic idea of this movement was led by the "Brundtland Report" entitled "Our Common Future" published in 1987. The report showed three pillars of the issue, that is, economic development, social development and environmental protection. Yet environmental protection was much emphasized in "Agenda 21", the report of "UN Conference on Environment and Development" held in 1992 at Rio de Janeiro of Brazil. It is notable that there, they set up a comprehensive plan of action to be taken globally, in which chapter 36 was for "promoting education, public awareness and training". It further suggested the development of 4 thrusts for this activity. The said Johannesburg meeting was meant after-10-year meeting of Rio, and in 2012, Rio+20 meeting will be held again in Rio de Janeiro.

Under these circumstances, the UNESCO was designated as a lead agency on this issue, and it has offered many action plans to the member states. The Japanese Government has continuously offered fund-in-trust to the UNESCO for ESD, from 2005.

The concept of SD has been extensively developed in these years. Nowadays, we come

back to the original idea of Brundtland Report, and have covered wide variety of the social issues, such as of climate change, population, peace, human rights, etc.,. We will see the latest development on SD in the outcome of coming Rio+20 meeting.

ESD means to cultivate people who are equipped with the consciousness of SD, hence, this movement is the must activity whatever the concept of SD will be. 2014 is the end of the DESD, but that never meant the end of the movement of ESD, but rather, it will be, and should be the beginning of the new step of ESD. We look forward to seeing further enrichment of ESD movement.

If You Want the Peace of the Dead, Prepare for Nuclear War

Ramesh Thakur
Director of the Centre for Nuclear Non-proliferation and Disarmament,
Professor of International Relations, at the Australian National University.

The world faces two existential threats: climate change, and nuclear Armageddon. Action on both is required urgently. Tackling the first will impose significant economic costs and lifestyle adjustments, while tackling the second will bring economic benefits without any lifestyle implications. Those who reject the first are derided as denialists; those dismissive of the second are praised as realists. Although action is needed now in order to keep the world on this side of the tipping point, a climate change-induced apocalypse will not occur until decades into the future. A nuclear catastrophe could destroy us at any time, although, if our luck holds out, it could be delayed for another six decades. The uncomfortable reality is that nuclear peace has been upheld, owing as much to good luck as to sound stewardship. Because we have learned to live with nuclear weapons for 66 years, we have become desensitized to the gravity and immediacy of the threat. The tyranny of complacency could yet exact a fearful price if we sleepwalk our way into a nuclear Armageddon. The time to lift the spectra of a mushroom cloud from the international body politic is long overdue.

Nuclear weapons are strategic equalizers for weaker sides in conflict relationships, but they do not buy defence on the cheap. They can lead to the creation of a national security state with a premium on governmental secretiveness, reduced public accountability, and increased distance between citizens and Governments. There is the added risk of proliferation to extremist elements through leakage, theft, state collapse, and state capture. In terms of opportunity costs, heavy military expenditure amounts to stealing from the poor. Nuclear weapons do not help to combat today's real threats of insurgency, terrorism, poverty, illiteracy, malnutrition and corruption. As they said in the streets of Delhi in

1998: “No food, no clothing, no shelter? No worry, we have the bomb.”

Since the end of the Cold War, the risk of a Russia-United States nuclear war has diminished, but the prospect of nuclear weapons being used by other nuclear-armed states or non- state actors has become more plausible. As a result, we find ourselves at a familiar crossroads, confronting the same old choice between security in or from nuclear weapons.

The Nuclear Non-Proliferation Treaty (NPT) has kept the nuclear nightmare at bay for over four decades. The number of countries with nuclear weapons is still in single figures. There has been substantial progress in reducing the number of nuclear warheads. However, the threat is still acute with a combined stockpile of more than 20,000 nuclear weapons; of these, 5,000 warheads are launch-ready and 2,000 are in a state of high operational alert.

The NPT enshrined multiple bargains. The non-nuclear countries agreed among themselves never to acquire nuclear weapons. They entered into a deal with the nuclear weapon states (NWS) whereby, in return for intrusive end-use control over nuclear and nuclear-related technology and material, they were granted favoured access to nuclear technology, components, and material. The non-nuclear countries struck a second deal with the NWS by which, in return for forever forswearing the bomb, the NWS would pursue good faith negotiations for complete nuclear disarmament. Article 6 of the NPT is the only explicit multilateral disarmament commitment undertaken by all NWS.

Those agreements are now under strain due to a five-fold challenge:

1. The five NPT-licit nuclear powers (Britain, China, France, Russia and the United States) have disregarded NPT obligations to disarm.
2. Three nuclear-armed states lie outside the NPT: India, Israel, and Pakistan.
3. As an intergovernmental agreement, the NPT does not cover non-state groups, including terrorists.
4. Some NPT members may be trying to elude their non-proliferation obligations, while the Democratic People's Republic of Korea (DPRK) has withdrawn from the NPT and tested nuclear weapons.
5. Many countries are interested in nuclear energy owing to rising environmental anxieties and fossil fuel price, raising issues of safety, security, and weaponization.

The disquieting trend of a widening circle of NPT-licit and extra-NPT nuclear weapons powers has a self-generating effect in drawing other countries into the game of nuclear brinkmanship. Adding to the five sets of concerns is the sorry state of global governance mechanisms for nuclear arms control. The Conference on Disarmament cannot even agree on an agenda. The Comprehensive Test Ban Treaty has not yet entered into force and a fissile material cut-off treaty is no nearer conclusion.

After more than a decade in the doldrums, the nuclear agenda was re-energized by a coalition of four United States national security policy heavy weights—William Cohen, Henry Kissinger, Sam Nunn, and William Perry—and given fresh momentum with President Barack Obama's Prague Promise in April 2009 to aim for the peace and security

of a world without nuclear weapons. The Washington Nuclear Summit looked closely at the safety and security requirements of nuclear programmes and materials. The 2010 NPT Review Conference was a modest success. Commissions such as the International Commission on Nuclear Non-Proliferation and Disarmament and campaigns like Global Zero have helped to mobilize key constituencies. Russia and the United States have negotiated, signed, ratified, and brought into force a new Strategic Arms Reduction Treaty (known as START II) to cut back nuclear arsenals by one third, limiting each to 1,550 deployable warheads.

Yet, there is a palpable and growing sense that START II could mark the end of nuclear disarmament progress, instead of being the first step on the road to abolition. There is little evidence of significant demand for disarmament by domestic political constituencies in the nuclear-armed states. Tellingly, not one country that had an atomic bomb in 1968 when the NPT was signed has given it up. Judging by their actions rather than the rhetoric, all are determined to remain nuclear-armed. They are either modernizing nuclear forces and refining nuclear doctrines, or preparing to do so. For example, even after implementing START II, the United States will retain a cache of reserve warheads as a strategic hedge available for rapid uploading, should the need arise, and also build three new factories for increased nuclear warhead production capacity. To would-be proliferators, the lesson is clear: nuclear weapons are indispensable in today's world and for dealing with tomorrow's threats.

Reflecting the technical state of 1968 when the NPT was signed, Iran insists on its right to pursue the use of nuclear energy for peaceful purposes — to the point where it would be a screwdriver away from developing the bomb. The world is at a loss on how to stop Iran from crossing the weapons threshold and how to persuade, coax, or coerce the DPRK from stepping back into the NPT as a denuclearized member in good standing.

Japan is the emotional touchstone in the discourse as the world's only victim of the bomb. The United States has a special responsibility to lead the way to nuclear abolition as the only country to have used atomic bombs, and as the world's biggest military power. The A-bomb was developed during the Second World War by a group of scientists brought together for the Manhattan Project under the directorship of J. Robert Oppenheimer. Witnessing the first successful atomic test on 16 July 1945, Oppenheimer recalled the sacred Hindu text, the Bhagavad Gita: "If the radiance of a thousand suns were to burst at once into the sky, that would be like the splendor of the Mighty One." Birth and death are symbiotically linked in the cycle of life. Oppenheimer also recalled the matching verse from the Gita: "Now I am become Death, the shatterer of worlds."

The same duality is omnipresent in every aspect of modern day Hiroshima. The citizens of Hiroshima, in rebuilding their city, have consecrated it as a testimonial to social resilience, human solidarity, and nuclear abolition. Once again a beautiful, scenic, and thriving city, Hiroshima lives by three codes: transformation from a military city to a city of peace; to forgive and atone, but never to forget; and, never again.

The case for abolition is simple, elegant, and eloquent. Without strengthening national security, nuclear weapons diminish our common humanity and impoverish our soul. Their very destructiveness robs them of military utility against other nuclear powers and of political utility against non-nuclear countries. As long as any country has any, others will want some. As long as they exist, they will be used one day again by design, accident, or miscalculation. Our goal, there- fore, should be to make the transition from a world in which the role of nuclear weapons is seen as central to maintaining security, to one where they become progressively marginal and eventually entirely unnecessary. Like chemical and bio- logical weapons of mass destruction, nuclear weapons cannot be disinvented, but like them, nuclear weapons can also be controlled, regulated, restricted and outlawed under an international regime that ensures strict compliance through effective and credible inspection, verification, and enforcement.

The common task is to delegitimize the possession, deployment, and use of nuclear weapons; to require no first use and sole purpose commitments; to reduce their numbers to 10 per cent of present stockpiles (500 warheads each for Russia and the United States, and 1,000 among the rest) by 2025; to reduce the high-risk reliance on them by introducing further degrees of separation between possession, deployment and use, by physically separating warheads from delivery systems and lengthening the decision-making fuse for the launch of nuclear weapons; to strengthen the authority and capacity of the International Atomic Energy Agency; to establish a multilateral fuel cycle; and to toughen up supply- side restrictions.

Because the NPT has been subverted from a prohibition into a purely non-proliferation regime, the time has come to look beyond it to a better alternative that gathers all the meritorious elements into one workable package in a nuclear weapons convention. This will not self-materialize merely because we wish it so. Nor will it ever eventuate if we always push it into the distant future. There are many technical, legal, and political challenges to overcome, but serious preparatory work needs to be started now, with conviction and commitment.

Those who worship most devoutly at the altar of nuclear weapons issue the fiercest fat- was against others rushing to join them. The most powerful stimulus to nuclear proliferation by others is the continuing possession of the bomb by some. Nuclear weapons could not proliferate if they did not exist, but because they do, they will. The threat to use nuclear weapons, both to deter their use by others and to prevent proliferation, legitimizes their possession, deployment, and use. That which is legitimate cannot be stopped from proliferating.

Critics of the zero option want to keep their atomic bombs, but deny them to others. They lack the intellectual honesty and the courage to show how non- proliferation can be enforced without disarmament, to acknowledge that the price of keeping nuclear arsenals is uncontrolled proliferation, and to argue why a world of uncontrolled proliferation is better than abolition for national and international security.

The focus on non-proliferation to the neglect of disarmament ensures that we get neither. The best and only guarantee of non-proliferation is disarmament. If we want non-

proliferation, therefore, we must prepare for disarmament. Within our lifetime, we will either achieve nuclear abolition or have to live with nuclear proliferation and die with the use of nuclear weapons. It is better to have the soft glow of satisfaction from the noble goal of achieving the banishment of nuclear weapons, than the harsh glare on the morning after these weapons have been used.

INTERVIEW

JOSEPH ROTBLAT
and The Pugwash Conferences on Science and World Affairs

Chapter 1

Science should serve mankind.

“I was born in Warsaw, which when I was born, was actually under the Czarist regime and then when the first war started it was occupied by Germany and then when the first World War was over it became independent. It was my experience during the First World War that shaped, to a large extent, my future. I had a terrible experience, complete privation during the first world war, hunger and cold and disease and witnessing death and so on, cruel things which had been happening. And I, at that time, decided that I would not want to see any war once again. At the same time maybe partly as trying to escape from reality I began to read at quite a young age science fiction books, mostly Jules Verne and others. And this fired my imagination and put me into the direction of trying to pursue science. And somehow, as a young child, I got the feeling, that what I should do in my life is to make sure that science should help towards the prevention of the sort of thing which I lived through in my early childhood. In other words, that science should serve mankind and with its enormous capabilities, should be able to ensure peace for the world so people wouldn’t have to go to war. So this is how it happened that despite very difficult financial difficulties which compelled me to start work for my living at a very early age, and unable

Belgian refugees at the Port of Ostend.

Three female refugees whose husbands were killed.

Thousands of Belgian refugees reaching Holland.

A widow who has lost husband and home.

A Polish refugee.

Russian refuges from Poland on the way home.

to go to a normal school and middle school to gain access to the university education, I had to teach myself in the evenings. But eventually I managed to overcome this and I got myself entrance to a university. I managed to complete a course of studies."

Chapter 2
A chain reaction which will grow exponentially.

"When I was still working in Poland, in Warsaw, I read a paper which came out in the beginning of 1939 about the discovery of fission, of fission of uranium. This is where you split the uranium atom when you hit it with a neutron. And I happened to have, at that time, doing experiments on the scattering of neutrons by uranium. So I had an idea at the time that in addition to this fission process, some more neutrons should come out. And since I had almost all the experimental equipment ready, it didn't take me more than a week to carry out the experiment which showed that, indeed, at each fission, more neutrons come out. This is a very simple observation which, I should say, I did it independently but at the same time independently other laboratories, several other people did the same. Because once an idea is ripe it occurs to a number of scientists. So I, but what was the importance of this observation? What had occurred to me at the time was that you can use these neutrons which come out of fission to hit other uranium atoms, then you can produce a chain reaction which will grow exponentially and in a very short time produce a very large amount of energy. In other words, the idea of utilizing atomic nuclear energy which is now being used in reactors to generate electricity, occurred to me

as a result of this observation. But at the same time, also another idea struck me, namely, that if all this energy comes out in a very short time, it will result in a mighty explosion. That was, the idea of the atom bomb occurred to me at the time. However, because of my original ideas of being a pacifist from my early days, the notion of my working on a weapon never occurred to me at all. Therefore I just dismissed it from my mind."

Chapter 3
I wanted to develop the Atom Bomb not that it should be used.

"By 1939 I had already acquired a certain position, a status in physics. I published a number of papers and I received an invitation to spend a year doing research abroad. James Chadwick, who was the man who discovered the neutron, he was, at that time, was a professor of physics at the University of Liverpool, and he invited me to come and spend a year with him. I also received an invitation from Professor Frederick Joliot-Curie, who was the son-in-law of Marie Curie, to spend a year in Paris. And of course any sensible person, when you have a choice between Liverpool and Paris, you know what the choice would have been. But obviously I was not sensible and I chose Liverpool. But the reason why I went to Liverpool was I had ambitions to build up physics in Poland and at that time to do experimental physics, nuclear physics, one had to have an accelerator. In the early days of the accelerator the cyclotron was a very important machine and at that time Chadwick was building a cyclotron in Liverpool. And so I thought well the best way to learn about the machine is while it's being built. This was the main reason why I decided to go to Liverpool."

"I arrived to Liverpool early in 1939, about March or April 1939, but in 5months the war broke out. But, throughout the summer in 1939, although I tried to forget it, the problem, the possibility that a bomb could result from the process of fission couldn't leave me. Because I was worried that, although I might try to forget it, other scientists may not have the same scruples, and this means that other scientists may develop the bomb. But, I hadn't in particular in mind these other scientists, I had in mind the German scientists.

Because the early idea about fission actually was done in Germany. So I was afraid that if German scientists would develop the bomb, this would enable Hitler to win the war because I knew at that time the war was imminent. We knew, everybody living in Poland, were aware that Hitler was going to invade Poland. And therefore, I was afraid that this may enable Hitler to win the war and this will be the end of democracy. And this kept worrying me all the time and I had, this terrible time for me, this dilemma whether, on one hand the notion of my working on a weapon of mass destruction was completely alien to me. It went against any concepts about my ideals about science.

On the other hand, I was afraid that these very ideals of science would be eliminated if a regime, like the Nazi regime came to power and the end of democracy. This was the

The invasion of Poland. German troops march through Warsaw, 1939.

Einstein's Letter to President Roosevelt - 1939

Albert Einstein
Old Grove Road
Peconic, Long Island
August 2nd, 1939

F.D. Roosevelt
President of the United States
White House
Washington, D.C.

Sir:

Some recent work by E. Fermi and L. Szilard, which has been communicated to me in manuscript, leads me to expect that the element uranium may be turned into a new and important source of energy in the immediate future. Certain aspects of the situation which has arisen seem to call for watchfulness and if necessary, quick action on the part of the Administration. I believe therefore that it is my duty to bring to your attention the following facts and recommendations.

In the course of the last four months it has been made probable through the work of Joliot in France as well as Fermi and Szilard in America--that it may be possible to set up a nuclear chain reaction in a large mass of uranium, by which vast amounts of power and large quantities of new radium-like elements would be generated. Now it appears almost certain that this could be achieved in the immediate future.

This new phenomenon would also lead to the construction of bombs, and it is conceivable--though much less certain--that extremely powerful bombs of this type may thus be constructed. A single bomb of this type, carried by boat and exploded in a port, might very well destroy the whole port together with some of the surrounding territory. However, such bombs might very well prove too heavy for transportion by air.

The United States has only very poor ores of uranium in moderate quantities. There is some good ore in Canada and former Czechoslovakia, while the most important source of uranium is in the Belgian Congo.

In view of this situation you may think it desirable to have some permanent contact maintained between the Administration and the group of physicists working on chain reactions in America. One possible way of achieving this might be for you to entrust the task with a person who has your confidence and who could perhaps serve in an unofficial capacity. His task might comprise the following:

a) to approach Government Departments, keep them informed of the further development, and put forward recommendations for Government action, giving particular attention to the problem of securing a supply of uranium ore for the United States.

b) to speed up the experimental work, which is at present being carried on within the limits of the budgets of University laboratories, by providing funds, if such funds be required, through his contacts with private persons who are willing to make contributions for this cause, and perhaps also by obtaining co-operation of industrial laboratories which have necessary equipment.

I understand that Germany has actually stopped the sale of uranium from the Czechoslovakian mines which she has taken over. That she should have taken such early action might perhaps be understood on the ground that the son of the German Under-Secretary of State, von Weizsacker, is attached to the Kaiser-Wilhelm Institute in Berlin, where some of the American work on uranium is now being repeated.

Yours very truly,

A. Einstein

Albert Einstein

Letter from Albert Einstein to US President Franklin D. Roosevelt informing him of the possibility of building an Atomic Bomb and warning that Germany is probably already developing one of its own.

A Cyclotron is a type of accelerator which early physicists used to give high energy to sub-atomic particles and make them collide with targets in order to study the structure of matter. They are popularly called "Atom Smashers".

dilemma which I got through that summer and then it came to an end, the dilemma came to an end on the first of September, 1939 when the war broke out. Within a few weeks Poland had to submit, it was divided between Germany and the Soviet Union and the whole might of Germany was revealed. And I was afraid that if in addition to the military might Hitler would also have the bomb, then he would conquer the world. And this is where I made up my mind. My worry was, how can one prevent Hitler from using his bomb? And I came to the conclusion that the only way in which this could happen is if we also had the bomb and threatened with retaliation.

In other words, the concept of nuclear deterrence which, up to this day, is being used as an excuse to keep nuclear arsenals, I developed already in 1939. And so I went to Chadwick, the Head of the Department, and put in the suggestion that they should start work on the Atom Bomb. But the point was, and I must stress this from the beginning, I wanted to develop the atom bomb not that it should be used, not even against the Germans, but to prevent its use. We only need the bomb to prevent Hitler from using his bomb against us. Maybe it was a naïve idea, probably it was, but this was the main rationale for a person like myself, a pacifist like myself to work on this bomb. And later other people had the same idea, and we began the work on it in England. We established the scientific basis for the bomb in our work in Liverpool. But later on the Americans took over with the Manhattan Project and I was invited to go, to join my other colleagues to go to the United States to Los Alamos."

Sidebar 1
Nuclear deterrence doesn't work.

"Nuclear deterrence. I developed this concept already in 1939 but it didn't take me long to realize that I was wrong, the whole concept is wrong for various reasons. A simple reason, going back to my own rationale at the time, is deterrence works only if you deal with people, rational people. So therefore I explain to you, "look if you do this, then I will do that". And then if you're rational then you will accept an argument. But if not rational

the argument wouldn't accept. Now Hitler was not a rational person. And I, of course I cannot prove this but my own feeling now is that if for example Hitler had had the bomb and we also had it and we threatened with retaliation, I'm convinced that the last act, last order of Hitler from his bunker in Berlin in 1945, April '45 would have been to drop the bomb on London even if this meant terrible retribution to Germany. Because this was in line with his philosophy. Therefore it wouldn't have worked in any case. And this came to me fairly soon I said "the whole argument was wrong. However, as it turned out, the world was divided ideologically, the Cold War came in. Then at that time the Russians were very strong in conventional weapons while the allies, which later became the NATO powers, were very weak in conventional weapons. And when the Cold War developed and there may be a conflict going between them, the West decided that the only way they could prevent a takeover bid by Stalin would be nuclear weapons, and NATO was set up for this purpose. And of course the Russians immediately did the same. And so the concept of deterrence came about, that the only way in which you can prevent this is if we also build up our nuclear strength. And as the Americans mainly built up their nuclear strength, so the Russians did too. And this became unbelievable that from having only a few bombs, only a few bombs are needed for deterrence, then up to something like 10,000 nuclear warheads, I can't imagine how we can get to that stage that we'll need, even in the concept of nuclear deterrence 100 times more than you might conceivably need. In other words, nuclear deterrence was not a stable thing as people think. At no moment throughout the whole Cold War period was either side satisfied that they had enough to prevent the other side to use it. And this is the reason why Regan came out with this Star Wars idea because he did not believe that he's got enough, all these weapons not sufficient, he must have something to put an umbrella over the United States. It is an indication that nuclear deterrence doesn't work. Because as long as you believe in nuclear weapons being used, then they will be used eventually. And of course people say, "You only need it as deterrent, not to be used". Nevertheless every leader, whether it's an American or a Russian have to say, "If need be I will push the button". Otherwise the whole threat will disappear. Again the terms wouldn't mean anything. Therefore unless you are prepared to actually use it - in fact this is what the whole situation is, both sides and now many more others are prepared to use it if need be. And this is just unacceptable because it would mean the end

of civilization, maybe the end of human beings on this planet. And I believe that this itself shows that the theory doesn't work. That's why all these years I'm fighting against this."

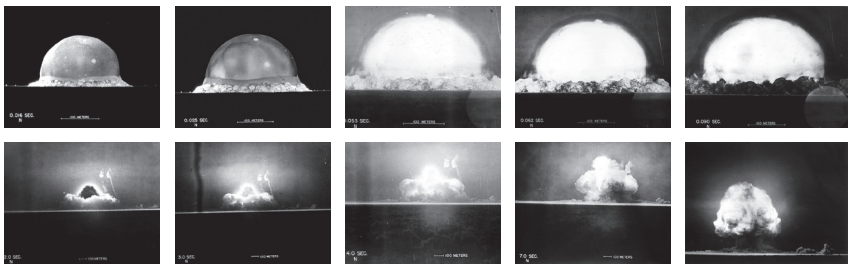
Chapter 4

I want to resign from the project.

"I came to Los Alamos early in 1944. And soon after my arrival I could see that despite the enormous effort made by the United States in trying to make the bomb - it was the effort, manpower, equipment, there's no limit whatsoever, whatever you wanted you could get because the urgency was there – and yet I saw that by 1944 already at that stage the war reversed and the Germans were locked up in Stalingrad, they couldn't go any further. And I could see that at that stage I could see that it would take probably another year before the bomb was made. And I thought if the Americans with all their economic might could not make the bomb in this stage and the Germans being constantly under air bombardment and the industry being destroyed, that my fear about the Germans making the bomb was not valid. And what am I doing here? There is no need for me to work there. Nevertheless I did not give up at that stage because I thought in science you never know. Maybe the

Trinity Test

On July 16, 1945, at 5:29:45 AM, a light "brighter than a thousand suns," filled the valley. As the now familiar mushroom cloud rose in to the sky, J. Robert Oppenheimer, scientific director at the Manhattan Project, quoted from Hindu scripture, the Bhagavad-Gita, "Now I am become death, the destroyer of worlds." The world had entered the nuclear age.



Nine time lapse photos of the explosion of the first Atom Bomb at the Trinity test site in New Mexico on July 16, 1945

German scientists have had a short-cut, some other way in which they do it without the same enormous effort which we had to do. And I think the people there were at that time still very enthusiastic. That's the reason why I soldiered on there in Los Alamos until I learned in November 1944, when Chadwick came to Los Alamos and he told me about the information which he had, definite information, that the Germans are no longer working on the project. My immediate reaction when he told me this was, "Oh very well in this case, there's no need for me to be here and I want to leave."

Sidebar 2
Eventually he had to agree to let me go.

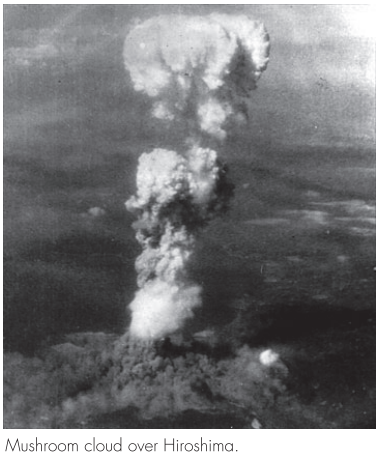
Chadwick tried to dissuade me from this. He was a bit worried it would look very bad if a member of the British team is leaving the project, maybe demoralizing for others. But Chadwick knew my views all the time, and although he didn't agree with me, I mean on this particular point we did not agree, we were very friendly. And nevertheless he saw my point and he said "OK well, I will inform the authorities in Los Alamos, the security authorities in Los Alamos about your decision". I met him the following day. The man in charge of security in Los Alamos was Captain DaSilva. As soon as I saw Chadwick I realized something was terribly wrong. I could see from his face something was wrong. And then he told me that he informed him about my wish to resign, they told him that they've got great doubts about me. They feel that the reason why I may go back and leave the project is not the one which I have mentioned, but because I wanted to give away the secrets of the Atom Bomb to the Russians. What was it based on? Now there's a story about this. It sounds a little bit odd. There was a young woman who was living in Santa Fe. I knew her from Liverpool. She came purely accidental. And she needed some help, consolation, so I used to meet her. Now nobody in Los Alamos was allowed to meet other people in Santa Fe or anywhere else without permission. But I considered myself a member of the British team, so I'd tell Chadwick, "Look", I'd explain to him the situation about this young lady that she needs help, "Would it be alright if I go and see her when I go to Santa Fe?' And he said, "Yes, it's OK". So I acted all the time under these conditions and I referred to my direct head, my superior. But of course they knew all the time about these visits therefore this was already something suspicious. And they made up a story of conversations which I had with this woman. The problem about the woman was that she

was deaf, she couldn't hear and therefore we had to sort of speak loud. And therefore what probably had happened, somebody listened to our discussions and interpreted them in the wrong way and made all this up on this basis. They said that I've asked this woman to organize a Communist cell in New Mexico, particularly in Santa Fe, I gave her money for this and so on. All sorts of these stories came out. It looked very bad indeed. And when Chadwick heard from the other side the story he came to me, h told me, "What's going on?" And he was horrified by this. But then I said, "OK, I want to talk directly to the head of the intelligence". So we went over to talk to DaSilva. And I asked him, "Give me facts (about what you) say I've been doing". He tried to give me some dates. As it happens I could (account for) every date which he gave. There were hundreds of people who knew where I was. Obviously the person who gave him the news had no idea. The whole story was made up. So I very quickly convinced DaSilva that the story has no basis for it. And so he apologized to me. So this was the problem which I had. Eventually he had to agree to let me go. But even so he insisted that I must not tell my colleagues the reason why I'm going. He was afraid of demoralization, that other scientists would join me in this. So we had to invent another reason. And this is something very sad in my own life, namely, I was married and had a, my wife was left in Poland and I didn't know what was happening during the war. I was very much worried about this. And I felt that maybe if I'm in England maybe it would be easier to find out from there, therefore… And Chadwick knew my personal situation very well and he tried to help me. So I used this argument. I wanted to be in England where I would be closer to find any information about my wife. So this was the official reason which was given. Not only this. I also had to agree, to promise I will not keep any contact with my colleagues in Los Alamos."

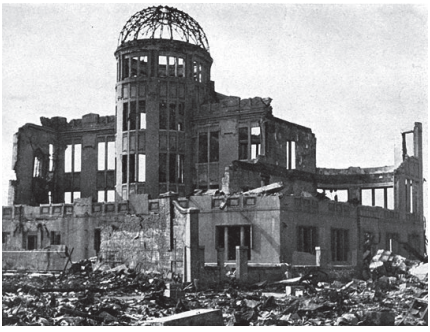
Chapter 5
I felt I was betrayed as a scientist

"And therefore I immediately sent in my resignation. I said I want to resign from the project. Eventually I was permitted to do this. And I came back to England and for the next 8 months I had no idea what was going on because I got completely cut off from

any contact with my colleagues there. It was indeed only on the 6th of August, 1945 that I heard on the BBC radio the announcement about the destruction of Hiroshima. This is the first time I learned that the project itself was successful, and also my great shock that the bomb was used. Because, going back to the days of Los Alamos, we often would meet at the houses of colleagues and discuss political situation, discuss the future. We discuss how the bomb should be used and most of us felt it should not be used against civilian populations. We felt, if need be, we should use it as sort of a demonstration, a warning shot somewhere on a desert island and so on. And this is still the feeling which I had when I heard the news, the great shock that it was used directly. But this was the first which I heard about this. So this was a terrible surprise, terrible shock to me. Took me very a long time to get over it and it had quite a big effect on my life. A dramatic effect. I felt I was betrayed as a scientist. I felt that although we had made the discovery, scientific discovery, although we collaborated because we were afraid, we tried to prevent its use. Despite of this we didn't want its use, it was used. My contribution to science was misused in my opinion. And this is why I spent a great deal of time talking to scientists to convince them that they should do something about it. That the bomb should not be used again. In fact I want to tell you about the state of my mind at that time. I was in such a state of despair. I was afraid because as it happened I knew already then when I was still in Los Alamos that the fission bomb was only the beginning. I knew that a bomb a thousand times more powerful could be developed. Because I had an office in one of the buildings in Los Alamos and the office next door was Edward Teller with Stan Ulam. Stan Ulam was also from Poland and we developed a friendship. Therefore I knew, although it was not official, I knew what's going on about the work. Therefore I was afraid that this fission bomb was only the beginning. I was afraid for the future of mankind already at that stage. Therefore I developed an idea we should do something drastic to prevent this happening. Therefore my idea was we should declare a moratorium on research in nuclear physics. I said, "Let's declare a



Mushroom cloud over Hiroshima.



Hiroshima Atomic Bomb Dome

Hiroshima Gas Company after the bomb.

Hiroshima Financial District after the bomb.

Hiroshima Red Cross building after the bomb.

moratorium for 3 years, not go any further in this, give us time to work on it, think about it, what developments lie ahead, which direction we should go." So I went around to talk to my colleagues in England, to various universities. I went to Oxford, and Cambridge, and Manchester and London. Many of my colleagues were in favor, agreed with me and many were much against it. And the interesting thing is that those that were solidly against it were those people who were on the left of the political spectrum. And their reason was, it was simple, I should have seen it myself. They said, "If we have a moratorium on further developments, this means we leave America as the only possessor of nuclear weapons. And, they said, "this puts Russia into a very weak position. And they would say, "Alright, let Russia build up its weapons and then we'll have a moratorium and we'd be against the idea." Therefore they were against the idea. But, in any case, I came to the conclusion that the whole concept was crazy. You cannot stop research. You cannot do this. You cannot stop people thinking on this. And therefore I gave up the idea. However, as a result of this, of my talks to many people, many scientists became conscious of their social responsibility. And we set up an organization, the Atomic Scientists Association. Namely that we should,

Known as the father of the Hydrogen bomb, Edward Teller along with Stan Ulam were its original designers. Teller went on to become an advisor to many US presidents and was a great promoter of nuclear arms. The H-bomb differs from the Atom bomb in that is uses fusion, where matter is compressed, to power a nuclear reaction. This is the same principle that powers the sun.

scientists should try to take part in the efforts to prevent this sort of development."

Sidebar 3
What if the discovery of fission occurred after the war was over?

"I often ask myself this hypothetical question, suppose that the discovery of fission occurred not at the time as it did, just a few months before the Second World War broke out, but let us say a few years later than that. And the war was over and then we made the discovery. I believe that effort which went into making the Manhattan Project would not have been put in there, because there would not have been the immediate need to use a weapon and the cost being enormous and therefore it would be very unlikely, that not many nations could have undertaken it. On the other hand, fission would have been used for peaceful purposes. Therefore I should imagine that under those conditions we would probably have developed peaceful uses of nuclear energy, but not actually make the bomb. But this juxtaposition of these two events, the discovery of fission and Hitler's invasion of Poland, these two together combined to produce this unique result. But we've learned from this that scientists could become involved in the production of weapons of mass destruction. But far worse than this, at least at that time we had the excuse, it was the danger to the whole of our life, democracy was in danger by this malignant philosophy of Nazism, could have been some reason why science should do so. But when the war was over, was finished, that at that time why the work should continue? Many more scientists subsequently, thousands of them, were employed both in the United States, in the Soviet Union, and smaller numbers in other countries, why they should continue there? This is the main problem really. Should scientists be involved in this sort of work? And this has been worrying me, bothering me all the time. I strongly believe that science should be used for the benefit of mankind, not for its destruction. Therefore, I myself would never consciously work on anything which could be used for

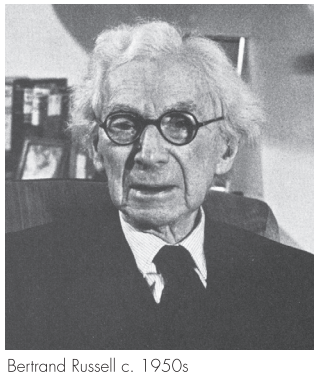
military purposes."

Chapter 6

The Consequences of A Nuclear War

"Soon after the war was over, many scientists who worked on the Manhattan Project who were shocked by the destruction of the two Japanese cities decided that scientists should organize themselves to make sure that this event will not be repeated. And so a big organization was set up in the United States called The Federation of Atomic Scientists which is still there and also in Britain, the Association of Atomic Scientists. We will come together in our field to try to influence the nuclear policies of the United States and Great Britain. However, we realized quite early that if scientists were to have any effect, it is not enough to talk to each other, we will agree with each other, we have to talk to the people on the other side of the Iron Curtain. Because we have a Cold War going on, and therefore, we have to talk to the Soviet scientists. But during the life of Stalin this would have been impossible, unheard of for any Soviet scientist to come over to America or Britain and talk about politics, about this sort of thing. We had to wait until after Stalin's death and the more moderate regime of Nikita Khrushchev came in before we could really begin to talk to each other. As it happens, the initiative for this came from a British philosopher/mathematician Bertrand Russell. I have been in touch with him quite a lot.

Bertrand Russell, 9 July 1955, at the Caxton Hall, London, press conference releasing what became known as the Russell-Einstein Manifesto. Joseph Rotblat was the youngest signatory, and chaired this press conference.



Bertrand Russell c. 1950s

He was very worried about what was going on and he felt that eminent scientists from the world should issue a proclamation warning governments and the general public about the consequences of a nuclear war and also calling on scientists to get together in a conference to discuss ways how they can avert this danger. And he asked Einstein to sponsor this. Einstein agreed. In fact, the last act of Einstein's life was that he signed this, which became known as the Russell-Einstein Manifesto in which this proclamation is being made. Now this was issued in 1955 in London, and there were 11 people who signed this declaration, I was one of them, I was the youngest."

Sidebar 4

We have to learn to think in a new way.

from The Russell-Einstein Manifesto

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.

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?

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 radio-active particles into the upper air. They sink gradually and reach the surface of the earth in the form of a deadly dust or rain. 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 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 degeneration.

The Russell Einstein Manifesto – Full Text
The Russell-Einstein Manifesto Issued in London, 9 July 1955 Bertrand Russell and Albert Einstein

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 positions 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 a 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 radio-active particles might be diffused, but the best authorities are unanimous in saying that a war with H-bombs might 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? 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. 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 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 thermo-nuclear 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.

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."

Max Born

Percy W. Bridgman Albert Einstein

Leopold Infeld

Frederic Joliot-Curie

Herman J. Muller

Linus Pauling

Cecil F. Powell

Joseph Rotblat

Bertrand Russell

Hideki Yukawa

Chapter 7

The Pugwash Conferences on Science and World Affairs

"Soon after, a few days after the proclamation of the manifesto, we received a letter from a gentleman in the United States called Cyrus Eaton. He was born in Canada in a village called Pugwash and he set up in that village, a sort of an institution, an educational institution where he could finance it from his enormous financial stores. He was an industrialist with hands in almost every industry you can think of, shipping and trains and steel and coal and everything else. But his heart was in the right direction and he offered to finance this conference which we advocated on condition it's being held in this village in Nova Scotia called Pugwash. Well, eventually we accepted his offer and in 1957, we met in this village. A small number of people, 22 scientists but they were from the both sides of the Iron Curtain, from United States and Soviet Union, from Britain and China, from France and Poland and so on. And these eminent scientists. This is a historical event because for the first time, that scientists of this eminence met together to discuss, not

scientific matters but virtually political issues. Issues on which there was a great division in the world not only between East and West but even within the West between Great Britain or America, very big divisions of opinion about this. And I was afraid that we should get together and talk to each other and thus break up in disagreement altogether. But it didn't come to it. We ended up in full agreement. And the main reason, in my opinion, why we agreed is because we are scientists, because we decided to approach even political issues in a methodical rational way. And since all of us came as individuals, not as representatives of any organization or of any government, we were able to speak freely. And we discovered that you can really, there is something in common with each other. So as a result of this, we decided to continue and to set up an organization which we gave the name from the place where we met for the first time, the Pugwash Conferences on Science and World Affairs. And this was 1957 and during these years we've been going all the time. We've been really, we can take credit for a number of things which have happened in the world; for example some of the treaties which have been discussed for the first time. Some people believe that we can take some credit even for the end of the Cold War because we influenced Mikhail Gorbachev. He listened to his Soviet colleagues, he listened to our views. He told me so himself, actually, the great influence which we had. Whenever I meet him he tells me the same story. So we can say that we had some influence on politics. And as a result of this in 1995 we have been awarded the Nobel Prize. It was awarded in 2 halves; one to the organization and one to myself. And this is in recognition of the efforts, which we did to prevent the nuclear war."

Participants at the first Pugwash Conference (1957), Joseph Rotblat the only one not wearing a tie

THE FIRST RESPONSE

THE CHESAPEAKE AND OHIO RAILWAY COMPANY

TERMINAL TOWER · CLEVELAND 1, OHIO

CYRUS S. EATON
CHAIRMAN OF THE BOARD

July 13, 1955
TransAtlantic
Air Mail

My Lord:

Your brilliant statement on nuclear warfare has made a dramatic world-wide impact.

As a trustee of The University of Chicago, I take great pride in your one-time association with that institution, and I have long felt a special interest in your many brilliant achievements. I have read all of your fascinating books again and again.

Could I help toward the realization of your proposal by anonymously financing a meeting of the scientists in your group at Pugwash, Nova Scotia? I have dedicated a comfortably equipped residence there by the sea to scholarly groups.

Julian Huxley is coming from England to join a small company of American and Canadian scholars at Pugwash during the first part of August. If the location appeals to you, it is at your disposal any time from August 20th on. I should, of course, want to be host to you and your fellow-scientists not only during your stay at Pugwash, but on your journey to Pugwash and return.

If you feel that some other place might be more convenient, I should still be happy to be of assistance. I suggest Pugwash because I believe you could more readily focus the attention of the world on the problems you wish to stress by meeting in such a relatively remote and quiet community than by choosing one of the great metropolises where the gathering would be but one of a number of events competing for public notice.

With all good wishes,

Sincerely yours,

Cyrus Eaton

The Rt. Hon. Earl Russell
41 Queen's Road
Richmond
Surrey
England

CE:rms

Letter from Cyrus Eaton to Bertrand Russell offering his family home in Pugwash Nova Scotia for a meeting of scientists opposed to the Atom Bomb

Cyrus Eaton in front of the Pugwash train station, July 1957

Joseph Rotblat talking into a Canadian Broadcasting Corporation microphone, beside him Cyrus Eaton and scientists Antoine Lacassagne, and Dmitri Skobeltzyn.

Joseph Rotblat in Beijing 1984 talking to Chou Pei Yuan (who also participated in the first Pugwash Conference), a physicist who studied under Albert Einstein and later headed Beijing University

Joseph Rotblat standing at table talking to scientists at the Thirteenth Pugwash Conference on Science and World Affairs, Karlovy Vary, Czechoslovakia, September 13-19, 1964.

Participants at the Pugwash Conference in Varna, Bulgaria Sept. 1978

Joseph Rotblat standing talking with smokers in a garden c. 1960s

Sidebar 5
Pugwash is an expression of the awareness of scientists of their social and moral responsibilities

"We believe that scientists like every other citizen should be responsible, they should be accountable for their deeds, scientists should not be excluded just because they create new ideas, they still are responsible. And this responsibility means if you're doing research work you should think about its possible applications. And you should begin from the very beginning to influence decision makers and other people, to warn them. If you go in this direction, then this may bring very bad results. And in which case try to avoid it. This is really the main message. Pugwash is an expression of the awareness of scientists of their social and moral responsibilities."

Sidebar 6
A world without nuclear weapons.

"Now during the Cold War period we could not even think about eliminating of all nuclear weapons at a time when they're building up. All our effort at that time was confined to try to prevent the nuclear arms race getting out of hand and the Cold War turning into a hot war. Therefore you try to work out on all sorts of treaties which will limit the damage. For example: the Partial Test Ban Treaty at the beginning and then the Comprehensive Test Ban Treaty, the ABM, the Anti-Ballistic Missile Treaty and a number of others and NPT, Non Proliferation Treaty. We've been working on this. Scientists have been contributing all the time to work out these treaties. But with the end of the Cold War then we returned to our main idea, namely the elimination of nuclear weapons. And I was involved in a number of books here which we have produced the way to create a nuclear weapon free

world. This was our objective and still is. And we managed to get, for a time, many respectable people, many of the leading although retired military people, admirals and generals and field marshals and so on, they all came out in favor of the nuclear free world. Now, is this concept realistic? How can we be sure that nations disarm if they say they will? And secondly, even if we have a nuclear weapon free world, how can we be sure that some rogue nation will break out from, or a group of terrorists will get hold of these weapons. These are very serious questions and this is why we are working on them. I believe myself, as a result of my studies, that it is possible to create a safe world without nuclear weapons. I do not say that it will be a 100% safe. There is nothing in this world 100%. But what I'm saying is that a world without nuclear weapons will be much safer than a world with nuclear weapons. And this is what we are trying to convince the decision makers now."

President John F. Kennedy signing the Nuclear Test Ban Treaty at the White House in Washington D. C. on 7 October, 1963.


BERNARD LOWN
– International Physicians for
the Prevention of Nuclear War (IPPNW)
Bernard Lown
B. Lown,

Chapter 1

A sudden revelation.

"In 1961, a young psychiatry resident at the Brigham came to me to go with him to listen to a lecture by Philip Noel-Baker. Philip Noel-Baker, Sir Philip Noel-Baker, is a very distinguished Britisher. At the time he was probably 80 and he had won a Nobel Peace Prize. And we listened to this ancient British prophetic voice like some Jeremiah, like an ancient Hebrew prophet, he was intoning about the fact that the world will not survive to the year 2000, a mere 40 years away. And he, in fact, he outlined the process of the nuclear arms race which was self-sustaining and human beings increasingly must lose control.

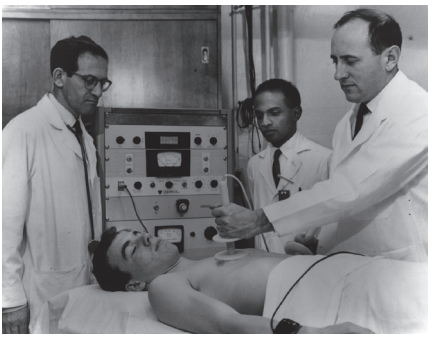
And this was so chilling to me, so absolutely a complete derangement, a sudden revelation, a shock that I can't communicate to you. And it was because my preoccupation at that time in medicine was sudden death, sudden cardiac death, the leading cause of death by far, far exceeding cancer or coronary disease itself. Suddenly, I'm confronted with another truth, far deeper. Yes, sudden death is a big problem but it's not cardiac, it's nuclear. So I decided to do something."

Sidebar 1

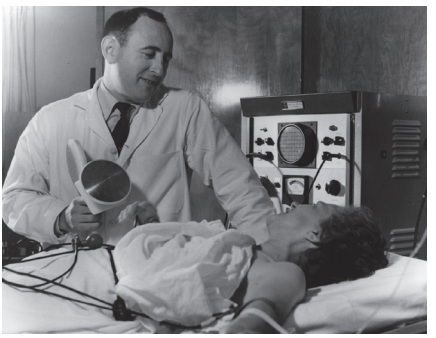
Is disarmament so difficult that it must remain a distant dream?

SIR PHILIP NOEL-BAKER from 1959 Nobel Lecture

"It is vital that the citizens of every country



Dr. Bernard Lown operating the original defibrillator with postdoctoral fellows, Jose Neuman (Argentina) and Raghavan Amarasingham (India) at the Peter Bent Brigham Hospital, 1961



Dr. Bernard Lown experimenting with cardioversion on a patient at the Peter Bent Brigham Hospital, Boston 1961

IPPNW Logo

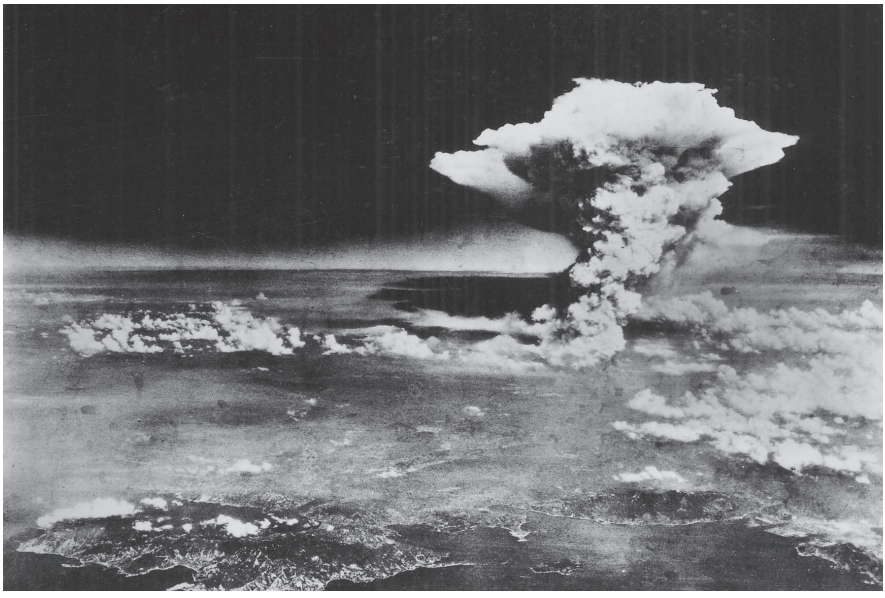
IPPNW Poster

should realize the true nature of the present arms race. It is by far the most potent factor in the conduct of our international affairs. It is the strangest paradox in history; every new weapon is produced for national defense; but all experts are agreed that the modern, mass-destruction, instantaneous delivery weapons have destroyed defense. The advance in weapons has already brought us within measurable distance of the sudden, decisive, irreparable knockout blow. In the age when the atom has been split, the moon encircled, diseases conquered, is disarmament so difficult that it must remain a distant dream? To answer "Yes" is to despair of the future of mankind."

Chapter 2

The realization that nuclear war was no longer a war.

"What I did then, is call together a meeting of colleagues, about 10 people to come and talk about this issue. And the more we studied, the more appalling was the realization that nuclear war was no longer a war. It was something else entirely. Because it was genocide, ecocide and destruction of everything dear to us as people. It severs the continuity of history. It does away with history. it does away with memory and you know what kept on perseverating in my mind, 'What the hell did we do to Beethoven that we want to abolish him?' You know, Beethoven, Bach, Schubert, Michelangelo, Leonardo, all that would disappear. And I got extraordinarily incensed, as were my colleagues as we studied it. So what could we do? And then an idea was suggested, "What do academics do?" They write papers, right? And we thought that we would write a series of papers outlining the physics, the biology, the medical consequences, a whole host of issues in a series of 6 or 7 articles. And we began to work on that."



Mushroom Cloud over Hiroshima

A-bomb Dome

"Shadow of Railing (890m from the hypocenter
Heat rays scorched and blackened the asphalt, but it remained white where the bridge railing blocked the rays.)"

Bombed City

Sidebar 2
Human survival in this area would be practically impossible.

from the article in the New England Journal of Medicine of May 1962

“This article examines the short-term human and ecologic consequences in metropolitan Boston, of a "limited" thermonuclear attack on the United States.

A 20-megaton ground burst on downtown Boston would seriously damage reinforced-concrete buildings to a distance of 10 miles, and demolish all other structures. Within a circle of a radius of 16 to 21 miles second degree burns would be produced, and clothing, houses, foliage, gasoline and so forth would ignite producing a fire-storm. Human survival in this area would be practically impossible, and an estimated 2,250,000 deaths would occur from blast and heat alone. Beyond the area consumed by fire, many persons would be exposed to lethal doses of radiation from local fallout. A thermonuclear attack poses a series of questions for physicians. How many persons will be killed outright? How many will be fatally injured? How many will be injured, but survive? Similarly, how many physicians will be killed or injured? How many hospital beds will be destroyed, and how many will remain intact? Will any necessary medical supplies - drugs, plasma, blood, dressings, instruments and the like - be left? The answers depend, however, on still other questions. What will be the type, timing, magnitude and distribution of the attack - or more bluntly, how many bombs will there be? Will they be fission or fusion or both? There is, to our knowledge, no scientific basis for accurate prediction of the pattern of an enemy attack. It is deeply misleading, therefore, to speak of any single disaster plan as a secure

Hypocenter Area in Ruins, Shima Hospital The hypocenter/ Saiku-machi, Shima Hospital (November 1945)The Shima Hospital, which had one-meter-thick walls, succumbed to the bomb's destructive force.

Bombed City

answer to the hazards of thermonuclear war. Physicians interested in rational consideration of any given medical plan for nuclear attack must recognize the nature of the vast gamble with human lives that selection of this plan would represent. Since it is impossible to prepare adequately for every possible type of nuclear attack the physician's responsibility goes beyond mere disaster planning. Physicians, charged with the responsibility of the lives of their patients and the health of their communities, must also explore a new area of preventive medicine: the prevention of thermonuclear war."

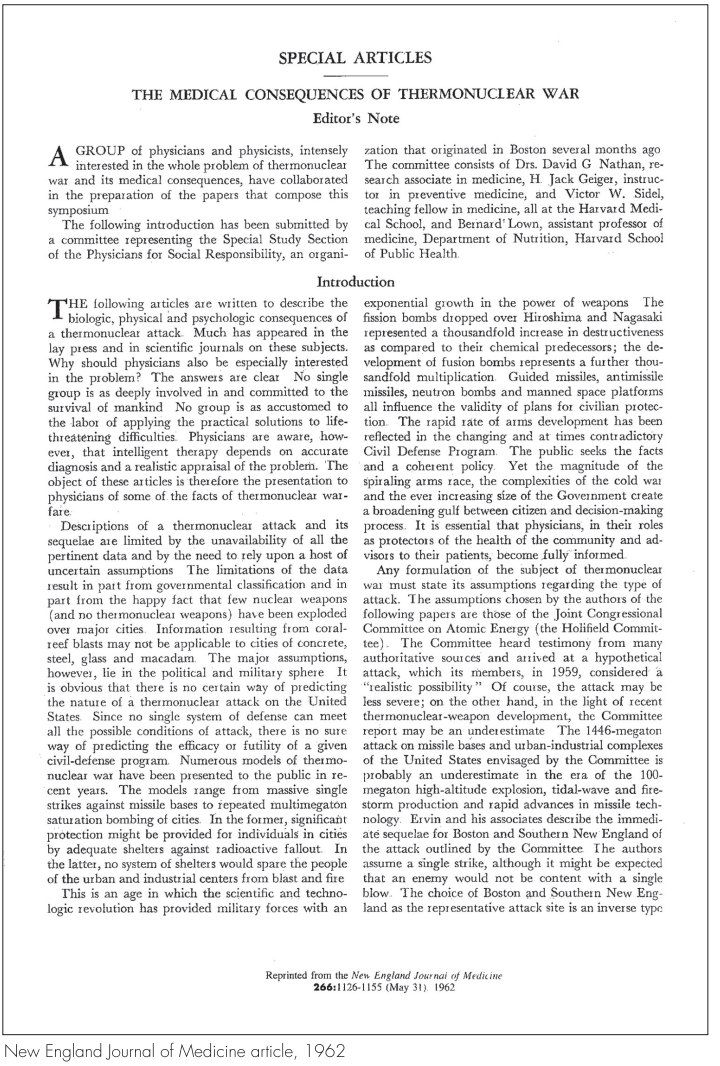

Temporary relief station, Hiroshima

Chapter 3
We showed there was no way to have shelter.

"Once we wrote it, I was the oldest of the group and I was chosen to try to go to The New England Journal, the most prestigious journal in America at the time to try to persuade this medical journal to print these articles. So, I went to the, Dr. Joseph Garland, who was the editor of The New England Journal, very conservative man, highly distinguished as an editor, and I said to him, Dr. Garland, I have a series of articles about nuclear war I would like you to consider. He looked askance; he looked dismayed. He said, "We are a medical journal Lown!" I said, "But this is a medical issue". He said, "Most of the Massachusetts Medical Society will not see it that way and I work for the Massachusetts Medical Society who owns this journal." He says, "It's irrelevant to our purposes." In desperation I said, "Dr. Garland, would you mind if I leave the article for you just to pour over on the weekend, this is Friday." On Monday, I get a call from Garland's office. He wants to see you right away. I chase over, my heart is pounding. What has happened? I was sure he didn't change his mind. He says, "I read them, I am going to publish them."

In May 1962, the New England Journal published, the whole issue is occupied with a remarkable editorial by Dr. Garland and he quotes Whittier, the poet. "Earthquake,

Wind, and Fire". "Breathe through the heat of our desire, Thy coolness and thy balm, Let sense be dumb, let flesh retire, Speak through the earthquake wind and fire. Oh still small voice of calm." When it appeared, it made headlines, all over the country. Front page, "Doctors Show". What did doctors show? Because, you have to go back to the era. The country was horrified on how to protect against nuclear bombs. By that time, the Russians had tested and we had tested and the atmospheric testing was still going on. The United States under Kennedy was going to build, encourage shelters for every American and at that point, people began to build shelters and get arms in them to keep their neighbors



SPECIAL ARTICLES

THE MEDICAL CONSEQUENCES OF THERMONUCLEAR WAR

Editor's Note

A GROUP of physicians and physicists, intensely interested in the whole problem of thermonuclear war and its medical consequences, have collaborated in the preparation of the papers that compose this symposium.

The following introduction has been submitted by a committee representing the Special Study Section of the Physicians for Social Responsibility, an organization that originated in Boston several months ago. The committee consists of Drs. David G. Nathan, research associate in medicine, H. Jack Geiger, instructor in preventive medicine, and Victor W. Sidel, teaching fellow in medicine, all at the Harvard Medical School, and Bernard Lown, assistant professor of medicine, Department of Nutrition, Harvard School of Public Health.

Introduction

THE following articles are written to describe the biologic, physical and psychologic consequences of a thermonuclear attack. Much has appeared in the lay press and in scientific journals on these subjects. Why should physicians also be especially interested in the problem? The answers are clear. No single group is as deeply involved in and committed to the survival of mankind. No group is as accustomed to the labor of applying the practical solutions to life-threatening difficulties. Physicians are aware, however, that intelligent therapy depends on accurate diagnosis and a realistic appraisal of the problem. The object of these articles is therefore the presentation to physicians of some of the facts of thermonuclear warfare.

Descriptions of a thermonuclear attack and its sequelae are limited by the unavailability of all the pertinent data and by the need to rely upon a host of uncertain assumptions. The limitations of the data result in part from governmental classification and in part from the happy fact that few nuclear weapons (and no thermonuclear weapons) have been exploded over major cities. Information resulting from coral-reef blasts may not be applicable to cities of concrete, steel, glass and macadam. The major assumptions, however, lie in the political and military sphere. It is obvious that there is no certain way of predicting the nature of a thermonuclear attack on the United States. Since no single system of defense can meet all the possible conditions of attack, there is no sure way of predicting the efficacy or futility of a given civil-defense program. Numerous models of thermonuclear war have been presented to the public in recent years. The models range from massive single strikes against missile bases to repeated multimegaton saturation bombing of cities. In the former, significant protection might be provided for individuals in cities by adequate shelters against radioactive fallout. In the latter, no system of shelters would spare the people of the urban and industrial centers from blast and fire.

This is an age in which the scientific and technologic revolution has provided military forces with an exponential growth in the power of weapons. The fission bombs dropped over Hiroshima and Nagasaki represented a thousandfold increase in destructiveness as compared to their chemical predecessors; the development of fusion bombs represents a further thousandfold multiplication. Guided missiles, antimissile missiles, neutron bombs and manned space platforms all influence the validity of plans for civilian protection. The rapid rate of arms development has been reflected in the changing and at times contradictory Civil Defense Program. The public seeks the facts and a coherent policy. Yet the magnitude of the spiraling arms race, the complexities of the cold war and the ever increasing size of the Government create a broadening gulf between citizen and decision-making process. It is essential that physicians, in their roles as protectors of the health of the community and advisors to their patients, become fully informed.

Any formulation of the subject of thermonuclear war must state its assumptions regarding the type of attack. The assumptions chosen by the authors of the following papers are those of the Joint Congressional Committee on Atomic Energy (the Holifield Committee). The Committee heard testimony from many authoritative sources and arrived at a hypothetical attack, which its members, in 1959, considered a "realistic possibility." Of course, the attack may be less severe; on the other hand, in the light of recent thermonuclear-weapon development, the Committee report may be an underestimate. The 1446-megaton attack on missile bases and urban-industrial complexes of the United States envisaged by the Committee is probably an underestimate in the era of the 100-megaton high-altitude explosion, tidal-wave and fire-storm production and rapid advances in missile technology. Ervin and his associates describe the immediate sequelae for Boston and Southern New England of the attack outlined by the Committee. The authors assume a single strike, although it might be expected that an enemy would not be content with a single blow. The choice of Boston and Southern New England as the representative attack site is an inverse type

Reprinted from the *New England Journal of Medicine*
266:1126-1155 (May 31), 1962

New England Journal of Medicine article, 1962

out. Good Christians, Jews and Muslims are going to shoot their neighbors to keep them out of the bomb shelter. It was a horrific age. Our publication ended that. I know that from people in Washington. Ended that. Because what we showed convincingly is that in case of a nuclear bomb falling, the least safe place was to be in an underground shelter. Because, fundamentally, the firestorms will suck out oxygen and everybody there will be asphyxiated. And that is the experience of Hamburg and Dresden and Tokyo and other places where fire-storms raged, not as a result of nuclear bombs but enough bombing of the area. So we showed there was no way to have shelter. This was foolishness."

Sidebar 3

We could be rich but stupefied into silence.

"Now the interesting consequence was that we were extraordinarily anxious that we had not covered the facts correctly about radiation effects, the fire storms, the shock effects of a nuclear bomb, the right perimeter. And we thought we'll be clobbered by the military. Interestingly enough we received 600 reprint requests from militaries. And eventually somebody from the Pentagon came to negotiate for us to become consultants and do research on this very subject. It was irony of ironies! But the one condition is that this will be classified, our data. Of course classifying would have put a muzzle on us, and we said, "No thank you". They realized we were poor, we had no secretary, we had no office. They said, "This could be remedied". We could be rich but stupefied into silence. The result of that effort was the foundation of the Physicians for Social Responsibility, for which I was the first president for about the next 9 or 10 years."

Chapter 4

The first dialogue between Soviet and Americans.

BERNARD LOWN:

"In 1978, I said the major issue is the fact that we have sort of demonized the Russians and they of us. Supposing we show them to be human beings. The moment they are human beings, all this makes no sense. And I said the Soviet doctors and American doctors ought to begin to collaborate. Against a medical problem, sudden death, right? Sudden nuclear

death. For about 10 years, I had been collaborating with the Soviets, in cardiology, on the very issue of sudden death. Because the Soviets were interested in that and I was the authority. At the time, there was the Nixon/Brezhnev Accord in which Soviets could call an American specialist and we could call on their specialists. And, I had already been called by The Kremlin much earlier to see a very sick Russian. And the Soviet doctors respected me because I taught them a lot of things. So I wrote a letter to Yevgeny Chazov.

Now Yevgeny Chazov, I need to talk about him a little bit. He was a young and brilliant cardiologist and advanced very rapidly in their system. He didn't speak English, but I could see he was straightforward. He wasn't the usual apparatchik but I didn't know much about him. I knew that he was a doctor to Brezhnev and that was a trump card. And I thought he was an honest guy so I wrote him a letter. He answered and his answer was interesting because he says, "Already nuclear weapons are exacting an enormous price because what we are investing in nuclear bombs is depriving our people of health care and

Dr Yevgeny Chazov

HARVARD UNIVERSITY
SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF NUTRITION
665 HUNTINGTON AVENUE
BOSTON, MASSACHUSETTS 02115

TEL. (617) 732–
CABLE ADDRESS: NUTHARV, BOSTON

June 29, 1979

Academician Eugene I. Chazov
Director General
National Cardiology Research Center
Academy of Medical Sciences of the USSR
Petroverigsky per. 10
Moscow, 101837, U.S.S.R.

Dear Eugene:

I am availing myself of the visit of one of your medical colleagues to expedite delivery of this note to you.

Over the past few years, I have been increasingly troubled by the growing thermonuclear armaments race. The year 1978 marked an unhappy milestone for mankind, largely ignored. For the first time, the nations of the world have reached a level of military spending in excess of $ 1,000,000,000 (one billion) per day. These expenditures defy elementary logic, common sense and the most essential morality. There is every likelihood that thermonuclear weapons will be used before the turn of the century. Both of our societies will not survive such a thermonuclear holocaust.

The medical profession, alas, so far has remained silent. Does our profession have no social responsibility except when the casualties start pouring in? I believe the physician has a unique capacity to influence society - silence denotes moral bankruptcy.

I believe that a conference of Soviet, Japanese and USA physicians organized to discuss the medical consequences of thermonuclear arms race will help rouse world public opinion. It will expedite passage of the Salt II Agreement and prepare the way for genuine disarmament. The inclusion of Japanese physicians is logical since they know better than anyone else what thermonuclear bombing means. We can model the conference after "Pugwash." We would like to have it organized in Washington later this year.

Some of us would be ready to travel to Moscow or meet in the USA with some Soviet colleagues to discuss this vital issue which, in my mind, is second in importance to none.

Please let me hear your thoughts about this urgent matter.

With warm regards,

Sincerely yours,

Bernard

Bernard Lown, M.D.
Professor of Cardiology

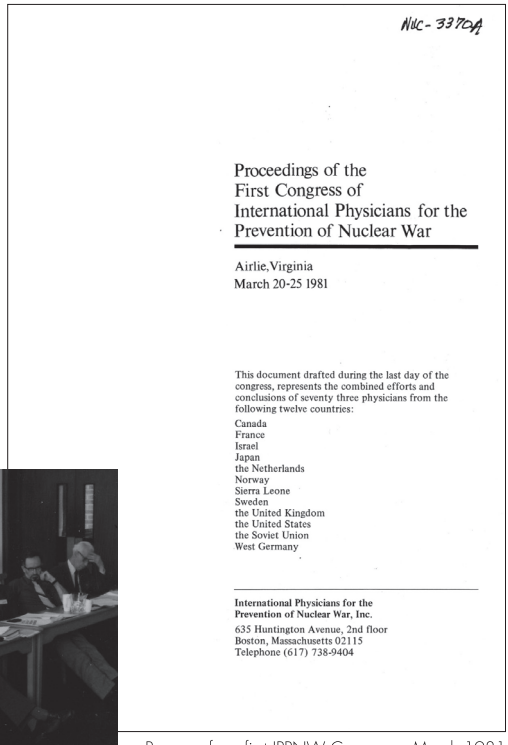
/cmk

Letter from Bernard Lown to Yevgeny Chazov

no doubt, yours too. These are billions are rubles, and our health care system is suffering and thousands are dying as a result. So those casualties have never been confronted. And we decided that we have to meet with Chazov. So we decided to meet in Geneva in December of 1980."

YEVGENY CHAZOV:

"Our connection start after Lown letter. And I as majority of the population on our planet, being busy with the solution of everyday and personal problems, I did not think about the current situation in the world which threatened my future well- being. And after this letter, I understand the situation. And, of course, when we met in Geneva, it was not so easy to discuss because we had different ideology, religion. My opinion in this discussion that first we must know tactics and strategy of our future movement. Very important that people, not only people, government understand us. Yes, and how we can change this situation. We were thinking about how to awaken them. We have agreed that there is one way to


NLC-337-CA

Proceedings of the
First Congress of
International Physicians for the
Prevention of Nuclear War

Airlie, Virginia
March 20-25 1981

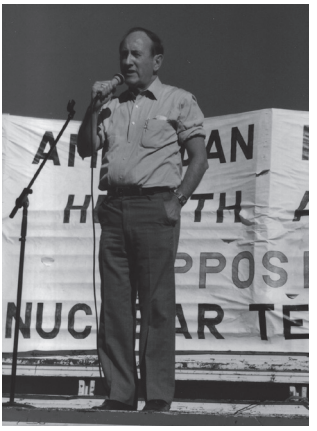
This document drafted during the last day of the congress, represents the combined efforts and conclusions of seventy three physicians from the following twelve countries:

Canada
France
Israel
Japan
the Netherlands
Norway
Sierra Leone
Sweden
the United Kingdom
the United States
the Soviet Union
West Germany

International Physicians for the Prevention of Nuclear War, Inc.
635 Huntington Avenue, 2nd floor
Boston, Massachusetts 02115
Telephone (617) 738-9404

Program from first IPPNW Congress , March 1981

Ist Meeting IPPNW Russians & Americans, 1981



Dr. Bernard Lown, on flatbed of truck protesting underground testing in Nevada – 1981

influence the human instinct of self-preservation. We must show the people example. And we were preparing there, first of all, medical consequences of the nuclear war. What will be if start nuclear war? If you know this, of course you must say, why I must be indifferent? I must work against nuclear armament. Yes? And it was our tactics."

BERNARD LOWN:

"And we agreed to have a congress, this was December, in March of 1981. And we invited and paid the way of every participant. There were about 70, leading doctors from around the world. We had no money, and I say, 'Let's mortgage our homes. Let's do something.' But I'm convinced that this is such an idea because the public, at that time, Reagan was in power. The threat of nuclear war has amplified enormously. We'll get support and we did get support from endless foundations initially. The tension was enormous. We had I don't know how many correspondents, but enormous numbers, television. Because that was the first dialogue between Soviet and Americans."

YEVGENY CHAZOV:

"And we in the first congresses propose that our movement without politics. For doctors, first of all in the health his patient. Our patient, it is my people, people my country. And we thinking in first of all not about politics, about religion, we are thinking about our patient, about health. And this united us in our movement."

Chapter 5
I got to meet Gorbachev a number of times.

BERNARD LOWN:

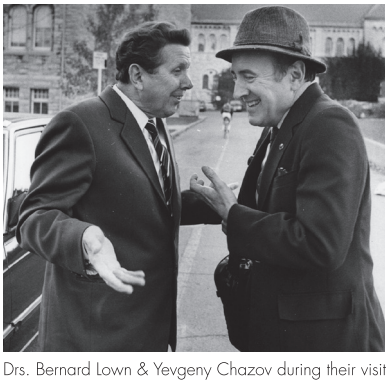
"So, #1 to get the medical profession to pervade the public with seminars, letters to the editors, speaking on television, and reach the public. Public fundamentally, we can trust the doctor because doctors speak of our life, our health, our well-being. What vested

interest does a doctor have in that? We could talk about morality. We could talk about consequences of nuclear weapons use. We can talk about the cost of it and diversion of resources from health care. We can talk about issues like that where we were authorities by public recognition of having vested us with that professionalism which spoke to those issues. "And we decided to have a congress annually. Next congress was in Cambridge at Airlie House we had 70. At Cambridge, we had 300. The next one was in Amsterdam where we had 700. The fourth one was in Helsinki where we had about 1000. The fifth one was the first one in Budapest in Eastern Europe. Our objective was firstly to organize the medical community globally and we grew like topsy. Within about 2, 3 years, we had 70,000 members. Ultimately we had about 200,000 members. And in the process, I got to meet Gorbachev a number of times."

Fifth IPPNW World Congress "Cooperation Not Confrontation" Budapest, Hungary June 1985

YEVGENY CHAZOV:

"Of course, Gorbachev know very well Lown and me, we met sometimes with him, discussed this problem before when he start work as a General Secretary. He know our data. He know about our movement. He support our movement. I am sure that our opinion very important for Mr. Gorbachev when he discussed this problem with Reagan about the sign this agreement."


Drs. Bernard Lown & Yevgeny Chazov during their visit to Queens University where they received Honorary Doctorates – Queens University 1985 Honorary Doctorates


1985 Meeting of Gobachev, Yevgeny Chazov and Bernard Lown. 1985

In his Nobel Peace Prize acceptance speech Dr. Lown said, ''We physicians protest the outrage of holding the entire world hostage. We protest the moral obscenity that each of us is being continually targeted for extinction. We protest the ongoing increase in overkill. We protest the expansion of the arms race to space. We protest the diversion of scarce resources from aching human needs. Dialogue without deeds brings the calamity ever closer, as snail-paced diplomacy is out-distanced by missilepropelled technology. We physicians demand deeds which will lead to the abolition of all nuclear weaponry."

Drs. Bernard Lown & Yevgeny Chazov & Nobel Statue - Oslo Norway December 1985

During the Nobel ceremony, 1985

Sidebar 5
Each party shall eliminate its intermediate-range and shorterrange missiles.

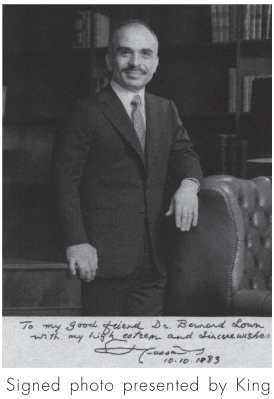
from the intermediaterange nuclear forces treaty

"Treaty between the United States of America and the Union of Soviet Socialist Republics on the Elimination of their Intermediate- Range and Shorter-Range Missiles The United States of America and the Union of Soviet Socialist Republics, conscious that nuclear war would have devastating consequences for all mankind, Guided by the objective of strengthening strategic stability, Convinced that the measures set forth in this Treaty will help to reduce the risk of outbreak

of war and strengthen international peace and security, Have agreed as follows:

Each party shall eliminate its intermediate-range and shorter-range missiles, not have such systems thereafter and carry out the other obligations set forth in this Treaty. Signed at Washington December 8, 1987 by Ronald Reagan for the United States of America and Mikhail Gorbachev for the Union of Soviet Socialist Republics."

Dr. Bernard Lown with Mikhail Gorbachev at the World Peace Forum, February 1987.



Signed photo presented by King Hussein of Jordan after consultation, October 1983

President Reagan, Vice-President Bush meet with Soviet General Secretary Gorbachev on Governor's Island, New York, 1988.

JODY WILLIAMS
and The International Campaign to Ban Land Mines

Chapter 1

The height of activism.

"I was born in 1950 and at university from '68 to '72. That period, of course, as the height of activism against US involvement in Viet Nam. And that period marked a generation of people in this country and I'm one of the people it marked. I believed that the US was misguided in its involvement and did a little bit in those days to try to make my voice be heard. We did go down to the legislature of the state and do sit-ins and things like that. And got leafleted in 1981 and the leaflet said "El Salvador, another Viet Nam?" - with a question mark. If the leaflet had said, "Come and hear what the United States is doing in El Salvador", I probably wouldn't have gone. If it had framed it any other way than, "El Salvador, another Viet Nam?" - with a question mark, I'm not sure I would have gone. But the Viet Nam thing really bothered me. I had lived for a couple of years in Mexico so the region was foremost in my mind. I had just returned to the States a couple of years previous to getting the leaflet. Mexico was my first real encounter with gross extremes of poverty and wealth. It was eye opening to see huge mansions with cardboard shacks leaning against the walls where the poor lived. So then when I get the leaflet about El Salvador to me it was an extension of the Mexico experience in a certain way, and then went back to the Viet Nam thing. Here we are doing it again. Another teeny little country that really has no impact whatsoever on the United States or what happens here in this country. And what the hell are we doing down there giving the military money and weapons to kill these people. And for 11 years I worked in a variety of projects trying to stop US involvement in Central America."

Sidebar 1

If you have the wherewithal to do it – get up and do it

"I have always recognized, my whole family has recognized that my brother Stephen is a key element in the formation of my family. He was born deaf. He developed violent schizophrenia in adolescence. And when we were very little, before he became violent, kids in town were mean to him because he couldn't talk. 'Cause kids are mean to each other. That's human nature, it's unfortunate but true. So as a family we rose to his defense. And I think ultimately it translates into any entity, any

individual who can't speak for themselves, if you have the wherewithal to do it – get up and do it. You know, help him. It's pretty much as simple as that."

Chapter 2
The "International Campaign to Ban Landmines".

"But after 11 years of that the cold war ended and peace came to Central America. And it didn't come because we were brilliant organizers and stopped US involvement, it came because the Cold War ended and the US didn't care anymore. It no longer had to play out its politics against the Soviet Union in Central America and other parts of the world. So it was time from my point of view to do something else too. And after so many years focused on one little region, I wanted to find a way to be involved in the entire world. And I had a reasonably sound reputation as an organizer from all the work in Central America. So I was asked by two organizations, one in the United States and one in Germany, if I thought I could do something about the landmine problem. To bring together non-governmental organizations to deal with the political question of landmines, not putting limbs on the victims or de-mining or all that stuff, which was beginning to happen, but actually to create some sort of political movement that would address the root cause of the problem which is this weapon that we believed was illegal under existing international law. And I thought it was fascinating. I mean, obviously it takes about 3 seconds to understand why landmines are bad and why they're different from other conventional weapons. That part was easy. But it was interesting to me too because you can make it as big as you want or keep it as narrowly focused as that. Landmines bad - civilian victims bad - get rid of weapon. It can be really minimalist. Or you could take the issue and turn it into a prism through which you look at

Jody Williams at the 3rd Meeting of the StatesParties to the Mine Ban Treaty, Managua, Nicaragua 2002

Mine Ban Treaty Negotiations, Oslo 1996

Washington DC, 1997

Cambodia 1996

Cambodia 1996

Hand holding single mine.

PNM-2 Mine

Two MD82B Mines

POMZ2M Mine


Cambodia 1996

international law, a prism through which you look at the means and methods of war, the rules that supposedly outline how you're supposed to legally murder other people. I just thought it was fascinating. I thought I would learn an awful lot. So I started to call it the "International Campaign to Ban Landmines" which was hilarious, it was two organizations and a staff of one, myself.

Sidebar 2
The too perfect weapon

"Interestingly enough, when the Vietnam vets and I started talking about this, and these Vietnam Vets of America Foundation was founded by combat vets, these guys were quite interesting. They said, "You know, when we were in Vietnam, the land mine was just another weapon. Until you think about after the fighting forces go home, then what? The rifle goes home with the soldier. Artillery goes home with the soldier. Land mines have been laid in the ground and they stay there for decades and decades and decades. I think the other thing that really startled people when we first started talking about this is that landmines are designed to maim you, because you want to overwhelm the logistical structure of the opposition forces. If a guy is shot clean dead, I mean, it's a drag, right? If your buddy's shot beside you, that's certainly startling. But you're trained to go on and keep fighting. If your buddy steps on a land mine and his leg blows up and you see this mutilated hunk of meat, excuse my graphic description, and you hear your buddy screaming because it hurts like hell, you can't just move on. You've got to pick him up and it takes a couple of fighters to pick him up and drag him to the back. And it takes more blood, it takes more operations, it takes more of everything to deal with a mine wound compared to other wounds. So, the weapon is designed to freak out the fighter and to overwhelm the support system of the soldiers. Oh, it's perfect. It does its job really well. But it does the same to civilians for decades after the end of a war."

Chapter 3

Calling for a treaty to ban the weapon.

“We had a meeting at the Human Rights offices in New York in October of 1992 where 6 NGO's formally decided to launch the campaign. And I put it that way, it makes it sound more formal than it actually was. We agreed that we would work together calling for a treaty to ban the weapon, that we would call for increased resources for victim assistance and mine clearance and we would hold an international conference in London in May of ’93. We had the first conference in London in May of ’93. I think we had 70 or 80 people representing 40 NGO's at that point. The next conference was held in May of '94 in Geneva. And it was a big step forward because it was cosponsored by UNICEF. It was the first UN agency that became really actively involved in the campaign, they were just

Shoe Pyramid organized by Handicap International, Paris 1997

Mine Ban Treaty Negotiations in Oslo, 1997

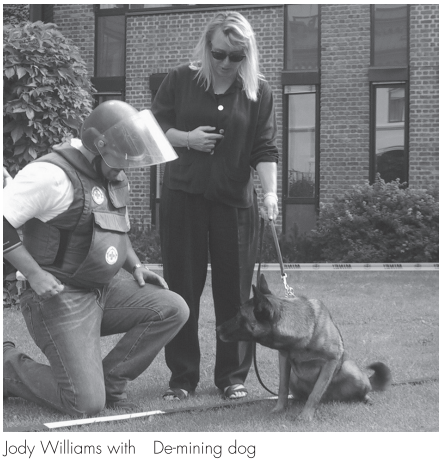
Geneva 1996

Mine Ban Treaty Negotiations in Oslo, 1997

Cambodian Monks marching for a ban on land mines, Cambodia 1996

Jody Williams giving a speech in India

Landmine survivor in Phnom Penh hospital. Cambodia, 1996



Jody Williams with De-mining dog

Jody Williams with students in Washington

fabulous throughout the campaign, and they still are. I think at that one we were up to 120 people from maybe 60 or 70 NGOs. Then another significant breakthrough in the development of the NGO side was our third conference which was held in June of '95 and that was in Phnom Penh, Cambodia. It's a big jump from London and Geneva to Phnom Penh. That one, we had 450 people from 60 countries, I think. This is truly amazing. I never believed that we would pull it off. And it was mostly, the on-the-ground-work was

done by our Cambodia campaign. And they were just fabulous. It was a very important milestone in the campaign because we had gone from NGO's in the north where most of the land mines were produced to the first conference in a seriously mine-affected country. "

Sidebar 3
I wanted a paper trail.

"I worked by myself for many, many, many years now I've worked out of my own house. Even though I work with people all over the world on a daily basis I don't have the constitution for daily interaction. So, I used the fax machine a lot at that point. I didn't, as I say, I didn't have a secretary and stuff so I was not going to spend hours and hours writing letters and stuffing envelopes and mailing them and the lag time was too big. If you send a letter to Europe, by the time you send it, somebody reads it, they answer, its two weeks, a month. I didn't have that kind of time. So I faxed and fax machines were new. They were sexy. If somebody got a fax, it was important, right? So I faxed people, made them believe, no it wasn't to make them believe, I wanted their input. And I wanted their input immediately and I wouldn't talk on the phone. And it's not just that I despise the telephone, although I do, it is because I wanted people to have to think about what they were committing to and write it down. If you have to stop and think and write, you pay more attention to what you are committing yourself to. Words are so cheap. But I wanted people to think, I wanted them to write back, I wanted it on paper so that then the next time I could send them another fax that says, "On this date you said you were going to... How did it turn out?" Or "Why didn't you?" I wanted a paper trail of who committed to what."

Chapter 4
The first unilateral moratorium on the export of land mines.

"At the same time that the campaign was growing that way, governments were increasingly taking unilateral steps too. You know, the first government to do anything shockingly was the United States. And it was not because of the Clinton administration. It was because of one senator from my state actually, Patrick Leahey from Vermont. He was able to push through the Senate in August of '92, the first unilateral moratorium on the export of

land mines. And it was hugely significant because, here is the sole remaining superpower stopping the export of what was considered to be a legitimate and legal weapon. And it really set off bells all over the world if you will, making governments and the NGO's and the International Committee of the Red Cross believe that, my goodness, if the US would do something, maybe we really could do something about this. It got a response and other countries started doing the same. Unilateral moratoria and eventually you had Bill Clinton

Senator Patrick Leahy at the Mine Ban Treaty negotiations in Oslo , 1997

Senator Patrick Leahy receives petitions. Washington, 1997

Campaigning during Mine Ban Treaty negotiations in Oslo, 1997

Kids with banners. Washington, 1997.

Campaigning during Mine Ban Treaty negotiations in Oslo, 1997

going to the UN, I think it was in '95, calling for the eventual elimination of land mines at the opening of the General Assembly."

Sidebar 4

Eliminate the deadly scourge of land mines.

US President BILL CLINTON speaking at the opening of The United Nations General Assembly, 1995.

"We need an illegal arms and deadly materials control effort that we all participate in. A package the size of a child's lunch bag held the poison gas used to terrorize Tokyo. A lump of plutonium no bigger than a soda can is enough to make an atomic bomb. Building on efforts already underway with states of the former Soviet Union and with our G-7 partners, we will seek to better account for, store, and safeguard materials with massive destructive power. We should strengthen the Biological Weapons Convention, pass the comprehensive test ban treaty next year and ultimately eliminate the deadly scourge of land mines."

Bill Clinton

Chapter 5

The Ottawa Process.

"For two and a half years there were expert meetings and then a review conference in which we had been hoping to push governments to ban the weapon knowing they wouldn't. It ended with very little change, I mean, diplomats spent two and a half years yapping and changed a couple of commas and semi-colons and called it great work. But out of that, emerged what became known as the Ottawa Process, which was: Canada invited governments who were supposedly truly pro-ban to come to Ottawa in October of '96 and formulate a plan to actually move to the eventual elimination of land mines. The conference lasted for three days and then at the end foreign minister Lloyd Axworthy stood up to thank them all for coming. And then he shocked them and said, "You know,

Kids with banners. Washington, 1997.

Jody Williams and Lloyd Axworthy

ICBL and ICRC press conference during Mine Ban Treaty negotiations in Oslo, 1997

we've laid out a great calendar, timetable, thinking for moving forward but it's not good enough for Canada. You've all come here, we've all come here saying that we're wanting to eliminate this weapon because it's a humanitarian crisis. Well, we challenge you to do it within one year. We challenge you to come back to Ottawa, Canada in December of '97 with a ban treaty and we'll sign it whether it's one other country, 10 countries, we don't care." And out of that challenge came a series of negotiating meetings around the world that in one year, negotiated the ban treaty and 122 countries signed it in December of '97. It was amazing."

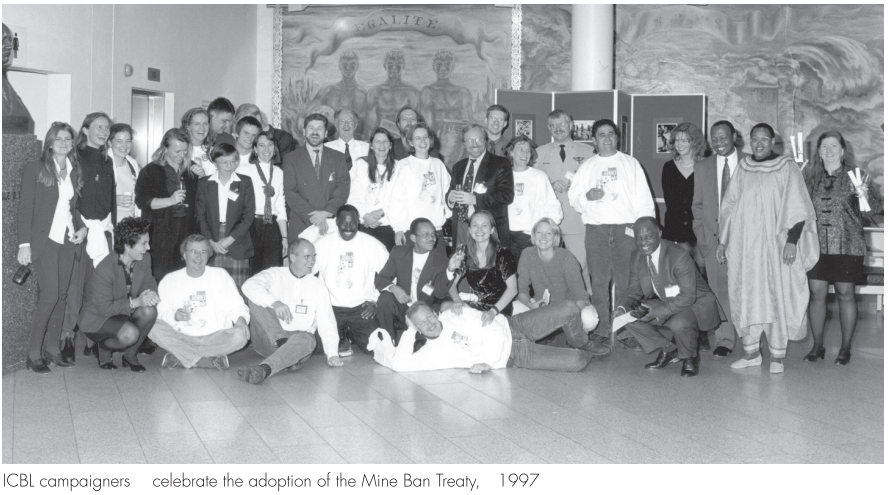
Sidebar 5
I'm no saint.

"I think part of the success of the campaign was that we always followed up on what we said we are going to do whether it was positive or it was negative. So, they knew who we were, what we stood for, that we weren't playing games, that what you see really is what you get. And it built a lot of trust. It pissed a lot of people off. I mean, governments are not fond of being called on the carpet

in public. I had no problem doing it. I don't care. I didn't do this, I don't do the work I do because I am trying to make people like me. I don't care if people like me. And that's probably, I think that sounds really harsh to people. You know, if you get the Nobel Peace Prize, you're supposed to be Mother Theresa and a saint. I'm no saint. I don't want to be a saint, I never pretended I was a saint. I do the work I do because I believe it's right not because I care one whit what anyone thinks of me."

Chapter 6
The Land Mine Monitor.

"Finally after the success of the Ottawa process the UN has embraced the treaty. It is the depository of the treaty and it's involved quite a bit now. Well we now have 140 countries that have signed, and I think we are up to 117 ratifications. We want every country that signed to ratify. We want all the countries that still haven't including my own, the United States, to come on board. But equally importantly, is those that have signed and ratified, I want them to obey the treaty. We're paying huge attention to compliance and implementation because we do not want to undermine international law by having yet another treaty that people sign to look good and then they don't obey the law. We launched immediately after the treaty was signed, a network of researchers that we produce annually a report called The Land Mine Monitor. And it's country by country, every single



ICBL campaigners celebrate the adoption of the Mine Ban Treaty, 1997

ICBL campaigners celebrate the adoption of the Mine Ban Treaty, 1997

Indian women marching on the occasion of the 10th anniversary of the Mine Ban Treaty

Launch of Landmine Monitor Report 2002 in Geneva, Switzerland

Public demonstration in Kosovo on the occasion of the 10th anniversary of the Mine Ban Treaty

country in the world, whether they've signed the treaty or not, what they have done on the land mine issue. So we follow it every year to see if it's actually having an impact."

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