

Pugwash

NEWSLETTER

*issued by the Council of the Pugwash
Conferences on Science and World Affairs
Nobel Peace Prize 1995*



2008—Centenary of the Birth of Sir Joseph Rotblat

Volume 45 • June 2008

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Pugwash

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Jo Rotblat speaking from the porch
of Thinker’s Lodge, the Cyrus Eaton
home in Pugwash, Nova Scotia, with
Ruth Adams listening, July 2003
(photo by Götz Neuneck)

To the Pugwash Community

Centenary of Joseph Rotblat's Birth

November 4, 2008 marks the centenary of the birth of Pugwash's leading spirit, the British Nobel Peace Laureate Professor Sir Joseph Rotblat (1908-2005), a former nuclear weapons scientist who held strong views on the kind of world we should try to create. This centenary provides an opportunity to explore several key strands of his life, and to show how society is still debating some of the key principles he championed: the need for dialogue across political divides, the dangers of continued possession of nuclear weapons, the need ultimately for a world without war and the social responsibility of scientists.

Pugwashites are familiar with Jo's story: Jo worked with Bertrand Russell to promulgate a 1955 statement that became known as the Russell-Einstein Manifesto, and signing this statement was one of the last acts of Einstein's life. The Manifesto led to a conference in 1957 that took place in Pugwash, Nova Scotia. This historic meeting involved scientists from East and West, and laid the groundwork for a new type of transnational organization, the Pugwash Conferences on Science and World Affairs. In 1995 Rotblat and Pugwash were jointly awarded the Nobel Peace Prize for their efforts to diminish the role of nuclear weapons. Today, as is evidenced throughout this Newsletter, Pugwash continues to work across political divides in regions of conflict where disagreements could potentially lead to nuclear exchanges: Iran, Kashmir, the Middle East, DPRK/South Korea, etc.

Rotblat was a leading voice for the abolition of nuclear weapons. He himself left the US-led Manhattan Project on principle when he learned that Hitler was not developing a nuclear weapon. For this action he was labeled a possible spy, and changed his field of work, to become a pioneer in the emerging field of nuclear medicine. He would have been encouraged by the current rhetorical shift in favor of

.....
The quest for a war-free world has a basic purpose: survival. But if in the process we learn how to achieve it by love rather than by fear, by kindness rather than by compulsion; if in the process we learn to combine the essential with the enjoyable, the expedient with the benevolent, the practical with the beautiful, this will be an extra incentive to embark on this great task.

Above all, remember your humanity.

—Joseph Rotblat, Nobel Lecture, 1995
.....

a nuclear weapons-free world, and he would have encouraged Pugwashites everywhere to 'make that vision a reality.'

As we go to press, we know there are events scheduled around the world to celebrate Jo's centenary, and to promote the causes he held dear. We expect this list will grow. To date we have learned that Pugwashites and Student Pugwashites in Argentina, Australia, Canada, Germany, Italy, Japan, Russia, South Africa, Sri Lanka, the UK, and the USA are all hoping to hold events focused on Jo's life, and will feature the new film on Jo Rotblat and the Pugwash Conferences, by the National Film Board of Canada, *The Strangest Dream*. As director Eric Bednarski said, "Although in many ways *The Strangest Dream* is a historical documentary which tells the story of a man and a movement, it is also very much situated in the present. We hope that it will educate people about nuclear weapons in the world today, and generally raise awareness about that problem, which effects us all."

There is a special focus in the UK, where Jo lived and worked. The British Pugwash Group initiated an essay competition in Jo's honor, with the winning essay by Emmet Farragher published in this *Newsletter*. UK

Pugwash held a special double-session meeting in April which focused on the social responsibility of scientists and the UK Trident programme. The WMD Awareness Programme, launched by Jo and Mikhail Gorbachev, held a "Peace of Art" competition for school kids, culminating in a special awards day and concert on 4 November. Kit Hill, a former scientific colleague of Jo's and a leader in British Pugwash, has published a book, *Professor*

Pugwash: The Man Who Fought Nukes, for people of all ages and with the science accessibly explained to a wide audience. And international Pugwash will honor Jo's centenary in early December 2008 in London, with the European premiere of *The Strangest Dream* and a half-day symposium to honor the achievements and memory of a truly remarkable human being.

Sandy Ionno Butcher



The 11th Pugwash Quinquennium: 2007-2012

This issue of the *Pugwash Newsletter* includes coverage of the 57th Pugwash Conference on Science and World Affairs, held in Bari, Italy in October 2007. The Bari conference marked the beginning of the 11th Quinquennium of Pugwash and the installation of a new President, Mr. Jayantha Dhanapala, a new Pugwash Council chaired by Prof. Saideh Lotfian of Iran, and a new Pugwash Executive Committee chaired by Dr. Steven Miller of the United States.

During the 57th conference, the Pugwash community had the opportunity to express its thanks to those Council members rotating off the Council, and to outgoing President, Pres. M.S. Swaminathan of India, for his wonderful service to Pugwash during the 10th Quinquennium from 2002 to 2007.

Sadly, we note the death of Giuseppe 'Beppe' Nardulli, the main organizer of the Bari conference, who died of cancer in June 2008 (please see p. 89). Beppe Nardulli epitomized the warm hospitality that all the participants of the 57th conference felt while in Bari, and he will be missed by family, friends, and colleagues alike.

The period since the Bari conference has been perhaps even more active for the Pugwash Conferences than usual. President Jayantha Dhanapala has traveled widely on behalf of Pugwash, visiting numerous countries and conferring with government leaders and nuclear non-proliferation experts on the current and future work of Pugwash. Secretary General Paolo Cotta-Ramusino continued his heavy travel schedule and active engagement with policymakers in countries such as Iran, Pakistan, India, Israel, China, and the United States on issues relating to regional conflict and nuclear weapons. Much

of this work is done 'behind the scenes' and not publicly reported, but is vital to the success of Pugwash in bringing together parties in conflict to discuss ways of reducing the nuclear threat and strengthening the international nuclear non-proliferation regime.

58th Pugwash Conference on Science and World Affairs

At its meeting in Bari, Italy in October 2007, the Pugwash Council decided to move to a schedule whereby the large 'annual' conference of Pugwash would be held approximately every 18 months, instead of once a year. Greatly increased international travel costs in particular, and hotel/conference costs in general, have dictated that international Pugwash can no longer subsidize the large conferences as done in previous years.

Accordingly, the 58th Pugwash Conference on Science and World Affairs is scheduled to be held from April 17-21, 2009 in The Hague, Netherlands. The 18-month interim between the large conferences also means that national Pugwash groups, in this case Netherlands Pugwash, are given more time to raise funds from local sources to help cover local hospitality and conference costs.

Acknowledgments

For continued support of the *Pugwash Newsletter* and the Pugwash Conferences, we are grateful to the German Research Society, the Russian Academy of Sciences, the John D. and Catherine T. MacArthur Foundation, the Carnegie Corporation of New York, the Ploughshares Fund, and the Cyrus Eaton Foundation.

Jeffrey Boutwell, Editor

57th Pugwash Conference on Science and World Affairs *Prospects for Disarmament, Dialogue and Cooperation*

Bari, Italy, 21–26 October 2007

STATEMENT OF THE PUGWASH COUNCIL

The threat posed to humanity by the vast destructive power of nuclear weapons remains as dangerous today as it was 50 years ago when the initiators of the Pugwash Movement first met in Pugwash, Nova Scotia. The need for “new thinking” on these matters is as urgent today as it was when the 1955 Russell-Einstein Manifesto, the founding document of Pugwash, first captured the world’s attention with its direct and urgent appeal.

In this spirit, the Pugwash Council welcomes the enhanced awareness of nuclear issues provided by recent statements by many prestigious non-governmental organizations like the WMD Commission and by senior figures and former politicians such as Mikhail Gorbachev, Margaret Beckett, Henry Kissinger, Sam Nunn, George Shultz, and William Perry, calling for a nuclear weapons free world. These public pronouncements create an important window of opportunity.

And yet, nuclear weapons still pose a great and overriding peril. Many years after the end of the Cold War there are over 20,000 nuclear warheads in the world, the majority of them in possession of the US and Russia. Regrettably, many of the US and Russian weapons remain deployed on quick-reaction alert. The United Kingdom, France, China, India, Pakistan, and Israel each hold smaller numbers of nuclear weapons and do not plan to disarm. Moreover, it remains the policy of nuclear weapons states to modernize their nuclear arsenals. In addition, there are increased threats posed by the possible acquisition and use of nuclear explosive devices by non-state groups.

The nuclear non-proliferation regime is under severe stress. The Comprehensive Test Ban Treaty and START II have not entered into force. There has been no progress on the Fissile Material Cutoff Treaty. The Nuclear-Weapon States have not sufficiently met their Article VI obligations under the Nuclear Non-Proliferation Treaty; nor are they demonstrating a commitment to the goal of a nuclear

weapons free world. Proposed new nuclear warheads and systems could lead to a resumption of nuclear testing. New types of missiles and missile defense systems are under development. There is the prospect that weapons may be deployed in space. In this climate, the Pugwash Council notes with deep regret the progressive unraveling of the arms control regime, including the abandonment of the Anti Ballistic Missile Treaty by the US, the risk that the Intermediate Nuclear Forces Treaty may be undone, and the freezing of Russian participation in the Conventional Forces in Europe Treaty and the non-ratification of the adopted CFE Treaty by most NATO countries. All of these developments are interrelated, and reinforce the idea that political leadership for a nuclear weapons free world is sorely needed.

Conflict and instability in the Middle East, South Asia and Northeast Asia make the threats to security posed by nuclear weapons more acute. There have been encouraging signs that the DPRK is ready to relinquish its military nuclear capabilities and the Pugwash Council welcomes the agreement reached earlier this year over the DPRK nuclear program and hopes for its speedy and comprehensive implementation and early reentry into the NPT.

As it has throughout its 50 year history, Pugwash calls for the total elimination of nuclear weapons. The Pugwash Council welcomes activities by national governments, international organizations, and other non-governmental organizations to this end, and is ready to initiate, to participate in, and contribute to these important initiatives.

Drawing on analysis gathered during the past year in Pugwash workshops, the Council advocates the following intermediate steps toward the goal of eventual elimination of nuclear weapons:

1. The US and Russia should initially commit themselves to reduce their nuclear arsenals to hundreds, and not thousands, of nuclear weapons under verifiable agreements that radically extend and continue beyond the SORT and START-1 agreements.
2. The US and Russia should destroy or disassemble decommissioned warheads and delivery systems.
3. The US and Russia should declare their quantities of tactical nuclear warheads and negotiate a treaty to withdraw and destroy them.
4. The US and China should ratify the Comprehensive Test Ban Treaty. All states should sign and ratify the CTBT.
5. The danger posed by the large stocks of fissile material must be urgently addressed by eliminating it as quickly as possible and by reinforcing its physical security pending elimination.
6. A Fissile Material Cutoff Treaty should be achieved as soon as possible.
7. All states with nuclear weapons should refrain from modernizing or renewing their nuclear forces and commit themselves to further reduce their nuclear arsenals. In this light, the Council deplores the recent UK decision to modernize its Trident submarine fleet and hopes this decision eventually will be reversed.
8. The US should withdraw its nuclear weapons deployed in Europe, and NATO should abandon its reliance on nuclear weapons in its forthcoming Strategic Concept. The Pugwash Council calls for an international agreement on norms that prevent the deployment of nuclear weapons outside national territories.
9. The nuclear powers should agree to proposals for establishing further nuclear weapons free zones, and fully respect existing zones.
10. The US should forgo strategic missile defenses and understand that attempts at developing strategic missile defenses are going to decrease, rather than increase, its security and also that of the entire world.
11. The international community should prevent the development and deployment of weapons in space, under the auspices of the 1967 Outer Space Treaty, and develop further restraints and confidence-building measures.

In the five years since the last Pugwash Quinquennial Conference in La Jolla, California, USA the world has seen increasing military interventions and violence. The invasion in Iraq and the intervention in Afghanistan (which was originally mandate by the UN) have resulted in chaos, increased spread of terrorist activities and dramatic suffering for the populations. We have seen misguided and counterproductive attempts to increase security through military actions, instead of fostering dialogue, reconciliation and reconstruction. Dialogue and reconciliation are often not easy to achieve, but are essential elements for building a lasting peace. The Pugwash Council welcomes efforts to apply these principles in Palestine and Israel, Iraq, and South and Northeast Asia, and expresses its hope that the upcoming conference on the Middle East conflict will initiate comprehensive and expeditious negotiations for a final settlement of the Israeli-Arab conflict.

The Council urges the exclusive use of diplomatic negotiations over the nuclear program of the Islamic Republic of Iran, with a view toward reaching a peaceful, non-coercive political solution with the active cooperation with the IAEA. The Council recognizes that new demands for the peaceful uses of nuclear energy are arising and notes the inalienable right of all nations to have access to nuclear technology and nuclear materials for peaceful purposes, provided appropriate IAEA safeguards and confidence-building measures are in place. The Council calls for all nations to ultimately transparently and fairly internationalize the front-end and back-end of the nuclear fuel cycle, avoid the use of double standards, and fully render the IAEA's Additional Protocol as the new norm for nuclear safeguards.

The US-India deal sends mixed signals to the international community, as it seems to suggest that nuclear weapons states, non-members of the NPT, can after some time, as de facto nuclear states, enjoy the relevant privileges of NPT members. In this way the perception that there are "good and bad proliferators" is strengthened and the NPT is weakened.

The Pugwash Council welcomes ongoing discussions in the UN General Assembly on the Arms Trade Treaty, aimed at establishing common international standards for the import, export, and transfer of conventional arms.

Pugwash will continue to work on other issues at the intersection of science and society, including the

challenges posed by poverty, pandemics, global climate change, environmental deterioration, resource scarcity, scientific illiteracy, and the need for renewable sources of energy.

On its fiftieth anniversary, Pugwash reaffirms its commitment to ensuring that science and technology are utilized for the benefit of humankind, and not its destruction. This is an inherent step toward creating a world free of nuclear weapons, and a world without war, as envisioned in the Russell-Einstein Manifesto.

The Pugwash Council met in Bari at the 57th Pugwash Conference on Science and World Affairs. The conference explored “Prospects for Disarmament, Dialogue and Cooperation: Stability in the Mediterranean Region.” The Italian Minister of Foreign Affairs, Hon. Massimo D’Alema, gave a keynote address to the 138 participants from 39 countries.

UN Secretary General Ban Ki-Moon sent a letter of greeting to the conference.

Regional political leaders addressed the meeting and helped the participants gain a deeper understanding of the challenges and opportunities facing the Mediterranean in this time of transition. They included: Hon. Nichi Vendola (Governor of the Puglia Region); Pietro Pepe (President, Puglia Regional Council); and Silvia Godelli (member of the Regional Committee in charge of the Mediterranean Area) The Pugwash Council notes with hope recent progress toward greater regional stability.

Sir Arthur C. Clarke, the renowned writer, sent a taped greeting. The conference included a wide array of plenary discussions on the following topics, many of which interplay with regional security issues: Nuclear Energy, Non-Proliferation Risks and Iran; The Status of Nuclear Arms Control; Pakistan: Political Developments, Dialogue with India; the Arab-Israeli Conflict; Iraq and Reconstruction; and Kashmir. There was also a brief session on the 50th anniversary of Pugwash, the report of the Pugwash Secretary General Paolo Cotta Ramusino, the Dorothy Hodgkin Memorial Lecture, a dialogue between incoming Pugwash President Jayantha Dhanapala and Sverre Lodgaard, and a presidential address by outgoing Pugwash President M.S. Swaminathan (see www.pugwash.org for more details about the conference).

Pugwash is extremely grateful to the Puglia Region and USPID for their support of this conference.



Berma Klein Goldewijk, Miguel Marin-Bosch, and John Finney.



Newly-installed President Jayantha Dhanapala with Masako Ikegami, Katsuko Kataoka, Hitoshi Ohnishi, Tatsu Suzuki, and Jiri Matousek.

In recognition of the optimism, insight, and courage of the participants in the first Pugwash Conference, held in Pugwash, Nova Scotia 50 years ago in July 1957, the Pugwash Council calls on the governments and peoples of the world to draw inspiration from the words of the 1955 Russell-Einstein Manifesto and to “remember your humanity and forget the rest.”

Adopted by the Pugwash Council

57th Pugwash Conference on Science and World Affairs
27 October 2007, Bari, Italy



THE SECRETARY-GENERAL

MESSAGE TO THE 57th PUGWASH CONFERENCE

Bari, 21 October 2007

I am pleased to convey my greetings to the 57th Pugwash Conference. I congratulate your departing President, Dr. M. S. Swaminathan, on his valuable contributions, and Mr. Jayantha Dhanapala, former United Nations Under-Secretary-General for Disarmament Affairs, who will soon assume the presidency.

Over the years, Pugwash conferences have promoted constructive dialogue on sensitive matters of international security. They have involved influential scientists and public leaders from throughout the world, even from countries that do not necessarily enjoy friendly relations with each other.

This year marks the 50th anniversary of the Pugwash Conferences on Science and World Affairs. It is thus fitting for you to reflect on Pugwash's contribution to the cause of world peace, and to the challenges ahead. It is also an opportunity for all of us to reflect on the importance of disarmament, dialogue and cooperation in creating a more secure world.

In 1946, the very first resolution of the United Nations General Assembly called for the elimination of all major weapons "adaptable to mass destruction." Since then, the United Nations, together with crucial civil society partners like Pugwash, has been working towards the objective of ridding our world of all weapons of mass destruction.

We have much in common. We share a global approach to promoting disarmament and non-proliferation issues. We pursue similar aims of dialogue, peace, and security. Both our institutions have received the Nobel Peace Prize for efforts in these areas.

Yet there is no room for complacency. Developments in science and technology are raising hopes that new innovations could contribute to improving the quality of life of people throughout the world. But at the same time, developments in various fields of weaponry remind us of the potential devastation from the use of weapons of mass destruction, and the very real threat they pose to all of humanity. Many such weapons remain, amid persisting risks that they may be acquired by additional states or non-state actors. Disarmament must remain at the top of our agenda.

I hope that at this gathering, you will be able to identify specific contributions that the international community and the United Nations can make towards advancing the goal of eliminating the world's most deadly and indiscriminate weapons. In that spirit, please accept my best wishes for a successful conference.

57th Pugwash Conference on Science and World Affairs *Prospects for Disarmament, Dialogue and Cooperation*

Bari, Italy, 21–26 October 2007

VIDEO GREETINGS FROM SIR ARTHUR CLARKE

Hello! This is Arthur Clarke, speaking from my home in Colombo, Sri Lanka.

I'm very happy to join you on this occasion, when the Pugwash movement is marking its 50th anniversary.

I send my greetings to all my friends – known and unknown – who share my deep interest in disarmament and peace.

And I would like to congratulate Dr M S Swaminathan, who completes his term as the President of Pugwash.

I extend a warm welcome to my long-time friend Jayantha Dhanapala, who takes over as the new President.

Your movement can be traced back to the Russell-Einstein Manifesto, which called upon scientists to assess the dangers of weapons of mass destruction. Those days, that meant only nuclear weapons. Now there are multiple threats.

I can still remember the global reverberations when the Russell-Einstein Manifesto was published in London in the summer of 1955. It took extraordinary courage for leading scientists at that time to take this uncompromising stand against the very weapons that were supposed to defend the free world.

Perhaps the most memorable line in the Manifesto was its call: “*Remember your humanity, and forget the rest.*”

These sentiments resonated strongly with me. Only a decade earlier, as a young radar officer of the Royal Air Force, I had shared the global shock and horror when the atom bomb was used to end the Second World War. During the weeks following the attacks on Hiroshima and Nagasaki, I wrote an essay, which I called “The Rocket and the Future of Warfare”.

I pointed out that the only defence against the weapons of the future was to prevent them ever being used. Even then, I recognised that the problem was political — and not military at all. A country's armed forces can no longer *defend* it; the most they can promise is the *destruction of the attacker....*

That essay was published in the *Royal Air Force Quarterly* in March 1946. There, I probably earned the dubious honour of first enunciating the doctrine of Mutual Assured Destruction — appropriately abbreviated as MAD.

I would like to share with you the closing paragraph of that essay:

“Upon us, the heirs to all the past and trustees of a future which our folly can slay before its birth, lies a responsibility no other age has ever known. If we fail in our generation those who come after us may be too few to rebuild the world when the dust of the cities has descended and the radiation of the rocks has died away.”

For half a century, all of you in the Pugwash Movement have lived up to this enormous responsibility. It's hard to pinpoint how much of sanity and good sense has prevailed because of your advocacy, but I can say without hesitation that the world is a safer place thanks to your efforts.

However, our race has still not been able to shake off its dangerous obsession with nuclear weapons. I once coined the slogan ‘Guns are the crutches of the impotent’. Similarly, hi-tech weapons are the crutches of impotent nations—where nukes are just the decorative chromium plating.

It's not only nukes that threaten our existence today – in the past few decades, they have been joined by a host of chemical and biological weapons. And now they are talking about cyber weapons that might just let us live, but instantly return us to the Stone Age...

Let us not forget the conventional weapons, which have also been perfected over the years to inflict maximum collateral damage – if you are at the receiving end, it doesn't matter if such weapons are ‘smart’ or stupid...

And it's no longer just nations that lust after all these weapons. We now have terrorist groups, disgruntled scientists and international gangsters all peddling—or seeking—deadly weapons.

So Pugwash at 50 faces new challenges no less formidable than those which your founders recognised at the height of the Cold War.

Here's one challenge that's particularly close to my heart: How do you counteract the intellectual and emotional fascination of warfare, especially as embodied in today's glamorous weaponry?

I'm both alarmed and appalled by the mass media's cheer-leading of warfare – I call it 'techno-porn'. From glossy aerospace magazines to violent video games, techno-porn images have become pervasive. And Hollywood is doing its bit to perpetuate this illusion. Much though I admire it, I'm afraid George Lucas's *Star Wars* saga is a perfect example of this, with its fascinating hardware and gorgeous explosions.

In this media-rich world of the 21st century, the Pugwash Movement must address the rapid spread of techno-porn. Yes, working with politicians and generals is tremendously important. And inter-governmental negotiations at United Nations are also needed. While doing all

this, don't forget that the next generation of leaders – in government, military or terror groups – is being raised on a diet of movies, video games and Internet full of techno-porn. How can a 'culture of peace' emerge in such a world?

In the end, I have great faith in optimism as a philosophy — if only because it offers us the opportunity of self-fulfilling prophecy.

So, despite alarming signs, I'd like to think that we've learnt something from the 20th century — the most barbaric century in history — that we've just lived through.

But as memories of the 20th century fade away, it's tremendously important to keep reminding ourselves of the horrors and tragedies that we inflicted upon ourselves.

You have a major role to play in the next half century, to make our world a truly safe and peaceful place for us — and our children.

This is Arthur Clarke, wishing you all possible success in your endeavours.



57th Pugwash Conference on Science and World Affairs *Prospects for Disarmament, Dialogue and Cooperation*

Bari, Italy, 21–26 October 2007

PROGRAM

Sunday 21 October

- All day Arrival and Registration of Conference participants
- 20:00 Informal reception in the Salone delle Feste

Monday 22 October

- 09:00–10:00 **OPENING PLENARY SESSION**
Welcome speeches from **Pietro Pepe** (President, Puglia Regional Council), **Silvia Godelli** (Member of the Regional Government in charge of the Mediterranean Area)
Keynote Address by **On. Nichi Vendola** (Governor of the Puglia Region)
- 10:00–11:00 **PLENARY SESSION: Keynote Speech On. Massimo D'Alema, Italian Minister of Foreign Affairs and Deputy Prime Minister**
- 11:00–11:30 Coffee break
- 11:30–12:30 **50 YEARS OF PUGWASH 1957–2007**
Francesco Calogero, Sandy Ionno
- 12:30–13:30 **PLENARY SESSION: Report of the Secretary General Paolo Cotta-Ramusino**
- 13:30–15:00 Lunch
- 15:00–17:00 *Working Groups meet in parallel sessions*
- 17:00–17:30 Coffee break
- 17:30–19:30 *Working Groups meet in parallel sessions*
- 20:00 Dinner in the Salone delle Feste
- 21:00 *Meeting of the Pugwash Council with National Groups and International Student Young Pugwash*

All Plenary Sessions will be held in the Salone degli Specchi

Tuesday 23 October

- 09:00–11:00 **PANEL SESSION on NUCLEAR ENERGY, NUCLEAR PROLIFERATION RISKS AND THE IRANIAN NUCLEAR FILE**
Chair: **Paolo Cotta-Ramusino**
Tatsujiro Suzuki (Japan), **Hossein Adeli** (Iran), **MSM Al Faraj** (Kuwait)
- 11:00–11:30 Coffee break
- 11:30–13:30 **PANEL SESSION on ARMS CONTROL**
Chair: **Sergey Batsanov**
Goetz Neuneck (Germany), **Vladimir Baranovski** (Russia), **Kennette Benedict** (USA), **Wa'el Al Assad** (Jordan/Arab League)
- 13:30–15:00 Lunch
- 15:00–17:00 *Working Groups meet in parallel sessions*
- 17:00–17:30 Coffee break
- 17:30–19:30 *Working Groups meet in parallel sessions*
- 20:00 Dinner

Wednesday 24 October

- 09:00–11:30 **PANEL SESSION on PAKISTAN: POLITICAL DEVELOPMENTS, DIALOGUE WITH INDIA**
Chair: **Peter Jones**
G. Parthasarathy (India), **Talat Masood** (Pakistan), **Najmuddin Shaikh** (Pakistan), **Amitabh Mattoo** (India)
- 11:30–12:00 Coffee break
- 12:00–13:00 **DOROTHY HODGKIN MEMORIAL LECTURE**
The Future of Disarmament & the Non Proliferation Regime
Sverre Lodgaard interviews **Jayantha Dhanapala**
- 13:30–15:00 Lunch

15:00–17:00 *Working Groups meet in parallel sessions*
17:00–17:30 Coffee Break
17:30–19:30 *Discussion Session on Jammu and Kashmir*
20:00 Dinner

Thursday 25 October

09:00–11:30 **PANEL SESSION on the MIDDLE EAST**
Chair: Paolo Cotta Ramusino
Panelists from the Middle East
11:30–12:00 Coffee Break
12:00–14:00 **PANEL SESSION on IRAQ and its RECONSTRUCTION**
Chair: Hilary Synnott
Ibrahim Bahr Alolom (Iraq), Mahmoud Vaezi (Iran), Hala Al Saraf (Iraq), Andy Grotto (USA)
14:30 Buses leave at 14.30 sharp for the excursion
Afternoon Excursion
20:30 Dinner at the Palace Hotel

Friday 26 October

9:00–10:00 **PLENARY SESSION** Presidential Address by MS Swaminathan
Chair: Marie Muller
10:00–11:30 **REPORTS OF THE WGS AND OF THE ISYP CONFERENCE**
Chair: Lynn Eden
11:30–12:00 Coffee break
12:00–14:00 **PUGWASH AND THE NEXT QUINQUENNIUM**
Chair: Francesco Calogero
(Pugwash documents for the 11th Quinquennium / new Council / new President)
Interventions from *Paolo Cotta-Ramusino, Jayantha Dhanapala*
CLOSING OF CONFERENCE



57th Pugwash Conference on Science and World Affairs
Report of the Secretary General 2007
Paolo Cotta-Ramusino

23 October 2007

PUGWASH: A MOVEMENT WITH MANY FACES

Pugwash is the oldest thriving non-governmental organization dealing with the problems of nuclear weapons, nuclear disarmament, and more generally, of weapons of mass destruction. Based on the Russell Einstein manifesto, it deals naturally with the conflicts (actual or potential) that involve States or entities possessing such weapons or that may possess such weapons in the near future. Pugwash was founded by scientists who believed that putting the nuclear genie back into the bottle and controlling and ultimately eliminating nuclear weapons was the main social responsibility of scientists, especially of those who helped build the nuclear bomb. So despite the fact that it may appear as a one-issue movement, Pugwash in reality had and has many facets and components. In Pugwash we have always been involved in *calling the attention of public opinion as well as of policy makers* to the fact that *nuclear weapons are ultimately incompatible with the progress and even the existence of mankind*. Pugwash involved scientists, policy makers and experts—all taking part in their personal capacity and coming from different countries, political-ideological and religious backgrounds—who could be influential in the choices made by their governments and their respective political headquarters. This is something that in modern terminology we call promoting *track II initiatives*. Pugwash dealt naturally with people belonging to opposite and conflicting fronts; the ensuing interaction between these fronts has been on many occasion an important element of *conflict prevention and/or conflict resolution*. Finally, having been founded by scientists who had been directly involved in the fabrication of weapons with terrible devastating consequences, Pugwash has always stressed the need for the scientific/technological community to keep in mind the *social responsibility* of its actions. From an organizational point of view, Pugwash has been always very *flexible*, resisting temptations to

stumble onto the bureaucratic path that plagues other organizations. Pugwash is geographically widespread, and being now present in about 50 countries, it is truly an *international* organization and not an international NGO set up and controlled by, say, a mother-house of a specific country. Finally, Pugwash is not a mini-UN, where unanimous universal consensus is required among the representatives of different countries to do anything; in fact, most actions are carried out and implemented by Pugwash's (very slim) central structure.

A changing international environment for the problem of nuclear weapons

All these many facets of Pugwash's work have been instrumental in allowing Pugwash to face a rapidly changing international environment and to adapt to new situations. The most important changes with which we are concerned are of course those connected with nuclear weapons, their numbers, the countries possessing them and the relevant nuclear policies.

End of the Cold War but very limited disarmament

Over the last 15-20 years the confrontation between the two main blocs (US-Russia) changed nature in many ways. In particular, the number and characteristics of nuclear weapons ceased to be considered as one of the main (if not *the* main) measuring sticks for the power confrontation. But the reduction of deployed nuclear weapons made possible by the arms control agreements of the end of the 1980s and the beginning of the 1990s was not pursued to the point of getting below the existing level of several thousand warheads in the hands of the two main nuclear powers. So, despite the end of the Cold War, nuclear disarmament was and still is beyond the horizon, while the relevance of nuclear weapons as a symbol of power has been preserved, albeit in a different framework and without the

extreme emphasis on the bilateral competition that was typical of the Cold War period. Moreover, with the exception of South Africa—in its transition period to the post-apartheid era—no country dismantled its nuclear arsenal. As the aura of nuclear weapons as a currency of power has been preserved, so are the worries of non-nuclear states that are antagonized in various ways by nuclear countries.

The demise of arms control

During the Cold War, given the centrality of nuclear weapons in the East-West confrontation, arms-control treaties and talks about nuclear weapons became the key element of the more general *detente* and peace process. Discussing nuclear arms control was probably the most relevant conflict prevention initiative. This was significant even for track II initiatives or for non-official talks. After the end of the Cold War, attention to bilateral arms control or bilateral arms reduction initiatives dropped dramatically, even though the risks associated with nuclear weapons are far from having been eliminated. Moreover specific arms control agreements have been dismantled (such as the ABM treaty), prompting a possible chain reaction that in due time may bring the whole system of arms control inherited by the Cold War crashing down. As a matter of fact, there are now very worrisome symptoms of a possible renewal of the US-Russian arms race.

Nuclear proliferation after the end of the Cold War

The problem of nuclear proliferation, which was kept under relative control in the Cold War period by the bipolar system, acquired a new dimension in the post-Cold War period. Generally speaking, a country may be motivated to acquire nuclear weapons for a combination of prestige-related motivations and concerns about its own security. Despite the end of the Cold War, prestige associated with nuclear weapons has been kept unfortunately high by the lack of disarmament, both in absolute terms and considering the trend over the last 15 years or so, and even by the persisting identification of the five official nuclear powers with the permanent members of the UN Security Council. As for security concerns, those obviously did not disappear with the end of the Cold War. In some cases the lack of a bipolar equilibrium exposed some countries to heightened levels of pressures from the only superpower left; in other cases, tensions between more powerful nuclear countries and smaller non-nuclear countries encouraged the smaller countries to consider becoming nuclear at least as a form of insurance policy.

In the post Cold War period we have seen three coun-

tries added to the list of five official and one unofficial nuclear power states. The number of nuclear countries is still low, but we should not forget that *almost half of mankind now belongs to countries that possess nuclear weapons*. More countries may be on line to acquire nuclear weapons, and some countries have been suspected of having an interest in nuclear technologies, and not for civilian-only purposes.

Bad and good proliferators

The non proliferation policy of the major powers and particularly of western states has recently put more emphasis on coercing potential proliferators rather than on building a general consensus for the non proliferation goals. Sanctions and even war have been used as an instrument to prevent real or only suspected proliferation. And paradoxically, the closer some critical countries have come to the nuclear threshold, the more they have been treated with caution and respect. Even more, new nuclear or potentially nuclear countries have been divided into good and bad proliferators [or potential proliferators]. The good ones have been “forgiven” and rewarded in various ways, with the result that the “bad” ones have been induced to progress more rapidly in the nuclearization process.

Renewed interest in nuclear energy

Other elements which are important in understanding the high proliferation risks that we are now facing is the renewed interest in nuclear (civilian) technology for energy purposes, considering the relatively thin barrier that separates military from nuclear civilian activities, and the fact that military nuclear technology is, in its less sophisticated aspects, a technology which is about 60 years old and hence pretty accessible. The main technical obstacle to nuclear proliferation remains of course the availability of fissile material, the control of which is of course very important. It is also important that Pugwash support all forms of international control of the production, storage and transfer of fissile materials.

Pugwash's task to reach out to regions and countries where proliferation is a problem

In a world with more nuclear independent actors than in the Cold War period, an organization like Pugwash should not only support in general terms the goals of nuclear disarmament and non proliferation, but also extend its presence to new subjects and areas and try to address the dividing issues or the sources of conflicts that may affect

areas where nuclear weapons are present or nuclear proliferation may be a serious risk. This has been part of a great effort made by Pugwash in the past quinquennium.

The Cold War does not provide the only model for handling confrontation between nuclear states or potential proliferators: sources of conflict unrelated to armaments

The Cold War model of how the confrontation between nuclear states developed, was handled and eventually reduced does not necessarily apply to the various actual or potential nuclear subjects that exist today. There are a variety of divisive factors that might today trigger a military nuclear action, or induce one country to seriously damage the non proliferation regime and the NPT treaty. Addressing these factors is important for any organization whose priority is preventing the acquisition, spread and particularly use of nuclear weapons. For example, the issue of Kashmir can be more relevant in triggering an Indo-Pakistani confrontation than, say, the number of weapons that are targeted across the border or the Line of Control.

The “new” terrorism

Another important change from the Cold War period is the role of terrorism . On the one hand, it is apparent that, given the availability of fissile material and particularly of HEU, terrorist groups could produce a nuclear bomb or a nuclear explosive device. On the other hand, the relevance of terrorist organizations has increased over the last years, especially since 911. In particular, a viewpoint has gained ground by which societies are attacked from within, often by random destruction, so that from the ashes of destruction a new order might possibly be built on the basis of “new” ideas. This sort of millenarist approach has found a fertile breeding ground in the aftermath of a series of crucial mishandlings of some specific critical situations (Afghanistan, Iraq and the Middle East in general). And from the point of view of nuclear risks, it is undoubtedly relevant, since the only thing standing between a consistent number of motivated individuals and a nuclear terrorist attack is the availability of fissile material which, especially after the demise of the Soviet Union, should not be underestimated. One point of extreme importance in dealing with terrorism is not to identify all radical groups with actual or potential terrorists. Recent policies in the Middle East in particular do make this kind of confusion, complicating immensely the problem. If radical groups are indiscriminately identified with and



Pugwash Council meeting, with Galia Golan-Gild, Jayantha Dhanapala, Claudia Vaughn, Paolo Cotta-Ramusino, and Saideh Lotfian.

treated as terrorists, then the number and the influence of terrorists is bound to increase dramatically. Engaging radical groups, allowing them to operate within a framework where some basic rules are respected, and understanding their social basis, can be a complicated but necessary task.

Back to square 1: promoting nuclear disarmament and stenghtening the NPT

One of the widespread myths used to justify the lack of progress in nuclear disarmament is that nuclear proliferators are not influenced by either the lack of or progress in disarmament. The lack of nuclear disarmament creates an international climate where nuclear weapons are considered both a currency of power and an instrument of dominance. Reactions to this climate have different and often unpredictable time scales, but this climate is defining the environment, and countries sooner or later are induced to follow the example of the more powerful states. Art. VI of the NPT is not a token compensation for the non-nuclear states. It was, and is, meant to be a clear committment. The distinction between good and bad proliferators is not so much unjust as it is conterproductive. It increases the fatal attraction towards nuclearization. Equity and fairness in the NPT is, in the long run, the most effective way to handle proliferation risks. A special word is also needed to support the preservation of the present architecture of arms control agreements and, in fact, to improve it, while avoiding that certain dubious choices, such as the deployment of BMD systems, jeopardize the existing agreements.

Improving control of critical material and nuclear technology

A big effort is needed in many directions to improve the control of fissile material and to secure the development and spread of nuclear technology against the risks of nuclear proliferation. Many ideas are on the ground, from improving safeguards to establishing international centers

for the production of nuclear fuel. Many of these ideas will not be implemented if there is the perception that these measures are unfairly imposed on certain states. Countries interested in extending the production of nuclear energy are not even interested in signing the IAEA additional protocol, not to mention the idea of cooperating with more advanced safeguard constraints. The idea of imposing safeguards or even denying access to parts of the nuclear energy production process on the basis of the right of the strongest risks being totally ineffective, and can be a stimulus for further proliferation. A special mention should be made on the need for monitoring efforts aimed at securing separated (excess) fissile material and stored or dismantled warheads. This was a crucial problem which Pugwash dealt with in many past meetings and for which there is intense international activity. The widening of these activities so as to involve countries other than Russia is also important if the issue of nuclear terrorism is to be taken seriously on a world-wide level.

Dealing with the root causes of hostility and conflicts in regions where nuclear weapons are a relevant factor.

Stabilizing situations where nuclear weapons are an important factor (whether existing or potential) requires dealing with complex issues, of which military (or nuclear) confrontation is only one. Hostility between countries or populations can come from territorial, religious, cultural and economic motivations. It can be the result of recent misgivings, or antagonisms rooted in the past. Addressing those issues and promoting dialogue across borders or across dividing lines can contribute substantially to lowering tensions and to promoting a better relations that can have an effect on military stability. The point to underline here is that lowering the risks of conflict (possibly with nuclear weapons) and promoting reciprocal engagement centered on the sources of hostility is a two way-street.

The Pugwash method of bringing together critical people from different fronts

What Pugwash has done in the past and intends to do even more in the future is to facilitate dialogue between key people coming from antagonistic countries or populations. The dialogue that Pugwash is promoting is often very private and unpublicized and, I would add, unassuming, since immediate results are hardly ever expected. These kinds of meetings usually involve a very limited number of participants. But it should be added that in the critical

situations we especially have in mind, such as the Middle East, South Asia, North East Asia and other places, the very fact of opening a dialogue among selected people across the dividing lines is a major undertaking, and any result in this direction carries in itself an important weight that is not to be underestimated. Transferring people across borders or having people sitting together from different fronts is at times both very difficult and very important.

Dealing with other types of WMD and with conventional weapons

There is a long tradition in Pugwash of dealing with the control and/or limitation of some specific type of weapons. These include non-nuclear weapons that are also called (properly or improperly) weapons of mass destruction. Chemical and Biological weapons pertain to this category. Other types of conventional weapons, from cluster bombs to the widespread use of small arms in critical areas, have also drawn Pugwash's attention.

Back to the future: the global responsibility of scientists and decision makers

Pugwash was initiated by a group of scientists (mainly physicists) interested in dealing with the consequences of their scientific activity and its horrible results on the world. Our founder Jo Rotblat belonged to this category of scientists. We should recall that he was the only one who left the Manhattan Project when it became clear that Nazi Germany would not produce an atomic bomb. In abandoning working on the construction of the bomb before the final result, he gave us a message that we still cherish as the key element of our activity. Scientists, policy makers, decision makers and military leaders do not have only an obligation or loyalty only to their country or own political-religious frame of reference. They have more and more a global responsibility. Our behavior on this planet should take into consideration the living conditions of all of us. Policy makers or scientists—if they do not interact with analogous decision makers or scientists from different countries or political-cultural-religious environments—quite often do not grasp the real essence of this global responsibility. Global responsibility is fully understood when comparison, engagement and cross cultural exchange is allowed. Pugwash is an instrument for this type of reciprocal engagement. It is, and has always been, a small organization, but we have the presumption to believe that even after 50 years, we still play a role in strengthening global responsibility.

57th Pugwash Conference on Science and World Affairs *Prospects for Disarmament, Dialogue and Cooperation*

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REPORTS FROM THE CONFERENCE WORKING GROUPS

Report on Working Group 1

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A new arms race and a new Cold War? Russia, NATO, Europe, arms control treaties and missile defense

The group covered a range of topics – from missile defense, strategies for disarmament, nuclear terrorism, the effect of globalization and networks on proliferation and arms control, nuclear weapons free zones, to arms sales in the Middle East.

Out of the discussion came proposals for three task forces:

- on missile defense and weapons in outer space;
- on prospects for nuclear disarmament;
- on the feasibility of an Arctic nuclear weapon free zone.

Missile Defense

The two papers presented were highly critical of US plans to install missile defense in Europe, and in particular the installation of a radar station in the Czech Republic and ten missile interceptors in Poland. Different arguments were flagged:

The technology is not ready, despite the fact that the US already has spent more than 150 billion dollars on it. Many experts doubt whether a 100 % secure system, or even a quasi-100% secure system, will ever become available. Nevertheless, the US administration believes that ballistic missile defense is vital for its security. Also (potential) adversaries will start from the (worst-case) assumption that the system works.

The threat has not (yet) materialized. Iran and North Korea are not capable of launching intercontinental

missiles with nuclear warheads. It will take a long time before they will be capable of doing so, if ever. And if they do, what incentives do they have to launch ICBMs against the US, knowing very well that the US will retaliate ?

Missile defense undermines strategic stability. Russia and China do not like American missile defense. Russia is especially concerned about American missile defense systems installed near its borders. While ten interceptors do not undermine the current Russian deterrent capabilities, a more expansive defensive missile shield may do so. In reaction to these plans, Putin has already frozen Russia's participation in the CFE Treaty in July 2007. Continuing negative reactions of Russia may jeopardize further nuclear weapons reductions in the future, and therefore may be a further blow to the current nonproliferation regime, which is already in crisis.

The Russian counterproposal to use Russian-controlled radars in Azerbedjan and Asmavir has not been taken seriously by the US.

A related paper made a link between BMD and NORAD. While Canada has said "no" in the past to US invitations to participate in the ballistic missile defense system, it may end up as it actively participates within NORAD.

During the debate about missile defense, many described Russia's policy as an overreaction, both as a result of corporate interests inside Russia and as a result of political gesturing vis-à-vis the rest of the world. Some also questioned whether American missile defense could undermine the Russian nuclear deterrent, but agreed that that could be the case for China. This may lead to a build-up of the Chinese offensive arsenal, and to a new Asian arms race.

Further, it was not completely ruled out that Russia may in the end cooperate with the US in the field of missile defense. A joint information exchange system about missile launches could be set up as a first step.

Others, in contrast, provided further arguments against missile defense:

- There may be a new kind of proliferation in the offing, namely missile defense proliferation, for instance in India, as well as an arms race in space.
- The interception of North Korean missiles would take place above the territory of Russia.
- How will Russia distinguish American defensive interceptors from offensive missiles flying into the direction of Russia? This may lead to Russian authorized nuclear weapons use after false alarm.

The Europeans will make themselves further dependent on the US, as they were before (and still today) with regard to the nuclear weapons umbrella.

What is hopeful (from an arms control perspective) is that the US Congress recently diminished a substantial part of the funding for the American missile defense system in Europe, and that a Democratic President in 2008 would only go along on the condition that the technology is ready, and effectively tested. In all likelihood, missile defense will remain an important arms control issue in the coming years, if not decades.

Pugwash may wish to reestablish a Working Group on Problems of Missile Defense and the Prevention of Weapons in Outer Space.

Strategies of disarmament: how to change nuclear weapons policy?

A first paper explained how the Trident decision by the Blair administration was taken, and how Pugwash UK tried to influence that decision. Pugwash pressed for an open debate, provided information to the public, invited experts, organized press briefings, and lobbied for postponing the decision to replace Trident. While initial planning for replacement submarines was approved, the issue will come back to the parliament in 3 to 4 years for a decision about funding the new system. Further input by non-UK Pugwash members is welcomed in the future.

The second paper recounted the efforts of Canadian Pugwash to change NATO's nuclear weapons policy. Senators Gen. Johnson, Gen. Dallaire, and Amb. Roche gave press conferences to publicize proposals to denuclearize NATO. In Ottawa, meetings were held with ambassadors from NATO countries.

A third paper described the arguments in favor of and against keeping American nuclear weapons in Turkey, and concluded that it was time to send them back to the US.

The debate that followed focused on the possible with-

drawal of American nuclear weapons from Europe in general. There was a consensus that their presence is an anachronism, and that public opinion in Europe is very much in favor of the withdrawal. The withdrawal could also have a very positive effect on the current nonproliferation regime, at least as a symbolic gesture.

The reasons these weapons are still in Europe are due to:

- Bureaucratic and political inertia; few politicians (except in Greece) are willing to use their political capital to change policy. There are also parochial interests involved, namely a small group within the military in the European countries, who believe that they can have more influence in NATO with the continued presence of these weapons in their respective countries.
- Responsibility-sharing/burden-sharing within NATO.
- Their presence in Europe is sometimes – e.g. in a recent platform of American experts related to the Democrats—linked to Russian tactical nukes, suggesting that the withdrawal can only happen on the condition that Russia changes its tactical nuclear weapons policy as well.
- The slippery slope argument: if NATO gives in on this issue, perhaps it will be obliged to give in on other issues in the future.
- Uncertainty about the future.

A more general question was whether public opinion had to be involved in order to convince the government. Most of the participants (although not all) agreed that public opinion was both an important actor and stakeholder. Also the media should play a much more active role in stimulating a serious debate about these issues.

There is a proposal to set up a Pugwash Working Group (or Task Force) on nuclear disarmament. The idea of elimination is not a taboo anymore, thanks in part to the Canberra Commission, the Blix Commission, and more recently the op-ed by Schultz, Perry, Nunn and Kissinger in *The Wall Street Journal*. At the same time, there is a window of opportunity with the coming change of the US administration at the end of 2008, a new NATO Strategic Concept in 2009, and the upcoming NPT Review Conference in 2010. The next two years may be critical.

It was repeatedly stressed that there was a need for a combination of vision AND concrete steps towards elimination, like the ratification of the CTBT and the withdrawal of the American nuclear weapons from Europe. A

new idea was to dismantle several American and Russian nuclear weapons under the supervision of an international or IAEA inspection team.

Russia is back on the global stage

Growing Russian assertiveness in international politics could have positive consequences for arms control in the medium term. Under Putin and with the economy doing better than in the 1990's (due to rising oil and gas prices), Russia's self-confidence is increasing. Sometimes, it even behaves in a rather assertive or even aggressive way to show the rest of the world and its own public that the era of humiliation is over. Examples are the tests with ICBM's, the vacuum bomb test in 2007, and bombers flying in the direction of the West. It is clear that the Russian military visibility and, by extension arms control, is used for geo-strategic (and domestic) reasons. The ballistic missile defense controversy should be seen in this light. The same applies to the freezing of the participation in the CFE Treaty in 2007 and the proposal to withdraw from the INF Treaty. In fact, it was suggested that Russia would like to use arms control as a way to exert political power in the international system, even going as far as playing a leading role in shaping a new international order.

Some questioned whether Russia was really back on the world stage. Others wondered what the long term vision behind this growing assertiveness was. Are we going back to a new Cold War? Most agreed that the latter was unlikely, taking into account the power gap between the US and Russia. Even a compromise with the US on BMD was envisaged, on the condition that the Iranian threat would not materialize and the US withdraws its proposal to install MD in Eastern Europe.

Danger of nuclear terrorism

How difficult is it for terrorists to build an atomic bomb? Not so difficult. The biggest hurdle consists of getting enough fissile material, about 100 kg of highly enriched uranium (HEU). Plutonium is the only alternative for HEU, but is much more difficult to handle, and has other disadvantages. Knowing that there is still a lot of HEU spread around the world – 1 million kg in Russia and 0.2 million kg in the US—without the necessary protection, it is time that the international community does everything it can to secure this material. The most urgent case are the nuclear research reactors, sometimes located at badly guarded universities. In addition, HEU is also used for naval purposes. HEU can be downgraded to lowly enriched uranium (LEU), which cannot be used for

weapons purposes. Non-state actors are not able to enrich LEU to HEU.

The US is helping Russia in this process of conversion and securing HEU. The US paid 7-8 bn \$ for about 300 ton excess HEU, which is now used as LEU in American civilian nuclear reactors. The fact that the Cooperative Threat Reduction Program (between the US and Russia) – established in 1994—is a success, is sometimes forgotten. In principle, similar deals could be made with Russia in the future, also by other countries or entities (like the EU). However, the political climate in Russia is currently not favorable for such “soft” deals.

Towards an Arctic Nuclear Weapon Free Zone

The basic idea (from the Canadian Pugwash group) is to make a NWFZ in the Arctic region. As new sea-lanes become available due to global warming and the melting of the ice, a first step would prohibit the passage of nuclear submarines in this area. In a later stage, the Russian bases in Murmansk should be closed as well. The latter may become an option if the number of strategic nuclear weapons continues to go down to a level of 1.000 or even 500 in the future. Under that scenario, one or two legs of the triad could be scrapped. For Russia, it would be more logical to keep mobile ICBMs instead of SLBMs on submarines. There are normally not more than two nuclear strategic submarines on patrol; the others are in port, and therefore vulnerable.

Nevertheless, it was admitted that the whole plan was quite ambitious because it would be the first time that nuclear weapon states were directly involved in the creation of a nuclear weapon free zone. While this ambitious plan was welcomed, many participants raised several questions: are submarines not more cost-effective than ICBMs (like the UK's decision to keep only subs)? Can this passage of submarines be effectively controlled? Would the Pentagon accept such intrusive verification mechanisms? What about the political atmosphere in Russia nowadays, which is not conducive to any substantial disarmament proposal?

On the other hand, the plans to de-alert nuclear weapons may strengthen the idea. There would at least be one bureaucratic stakeholder in favour: the Strategic Ground Forces in Russia.

A Pugwash Working Group might explore the feasibility of establishing a Nuclear Weapon Free Zone in the Arctic Zone.

Pathways to proliferation and counterproliferation

The paper mentioned two new proliferation processes: 1) networked proliferation (e.g. Pakistan); and 2) non-state actors (see nuclear terrorism). Networked proliferation, which is a phenomenon that is understudied, has the characteristic that it is not well detectable, that complete products are delivered instead of drawing maps, and that non-state actors are the driving force. The paper also discussed the impact of globalization on proliferation. Globalization can both help proliferation as it stimulates the movement of people, information and money, and be a tool in the fight against proliferation.

UN role in the 1962 Cuban missile crisis

A recently discovered aspect of the Cuban missile crisis is the pivotal role played by the UN Secretary-General U Thant. Thanks to Thant's mediation efforts, President Kennedy had time to lower the tensions, and to imagine a solution without the use of force. In particular, Kennedy asked Thant to contact Khrushchev and ask him to keep his ships away from Cuba in order to have more time to work out a diplomatic solution. The Soviet leader agreed to the UN request. Second, Thant proposed the dismantlement of the missiles in exchange for an American guarantee that Cuba wouldn't be invaded by the US. The latter was also accepted by both parties. Thirdly, Thant visited Castro at the end of the crisis and convinced Castro to tone down his rhetoric. This diplomatic approach was successful, and should be an example for the handling of current conflicts.

Conventional weapons sales to the Middle East

Although weapons of mass destruction are often the center of the international debate, we should not forget that wars are fought with conventional weapons. When it is discussed, the focus is most of the times on the demand side. The paper focused instead on the supply side. There are entities that have huge vested interests in selling arms. They can easily get away with the argument that "if we do not sell, other firms or states will sell exactly the same weapons". After the Cold War, this economic logic applies even more than during the Cold War when friends and enemies were chosen on the basis of ideology to fight "proxy" wars.

The consequences of this arms trade, however, are substantial. Weapons are regarded as offensive, and stimulate others to acquire arms as well. The security situation in the end may be worse than was the case before

acquiring these weapons. Another paradoxical result is that states are sometimes confronted with their own weapons in the hands of the enemy.

As the Middle East is an unstable region, there is a huge demand for weapons. These weapons further destabilize the region as a result of the wars that are fought (e.g. the recent Lebanon war in 2006, the Iraq war since 2003, etc).

In the debate that followed, the aspect of security guarantees was touched upon. If states feel secure, they would have no need to acquire (so many) weapons. Is there for instance no possibility to offer security guarantees to Iran or Israel? On the supply side, there exists already the UN Arms Register and the Wassenaar Agreement, which are just two examples of promoting transparency, which in turn may soften the security dilemma. Recently, the idea of an Arms Trade Treaty came up in the UN General Assembly, proposing that arms sales should be regulated. It was also mentioned that parliaments should take responsibility for arms exports much more than is the case today.

Working Group 2 Report

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Rapporteur: Bob van der Zwaan

1. The relation between nuclear non-proliferation and disarmament

Presentations and ensuing discussions in Working Group 2 left no doubt that the global nuclear non-proliferation and disarmament regime is in need of significant and urgent repair. Yet it was recognized that the Non-Proliferation Treaty (NPT) remains the fundamental and indispensable cornerstone of this regime. It was observed that some current events and public statements, among them the publication in early 2007 of a seminal article in the Wall Street Journal calling for a complete elimination of nuclear weapons, present glimmers of hope that should be exploited to the fullest extent possible, also in the light of recent and imminent changes in political leadership in several of the countries directly concerned. Arguments were made in support of both directions of correlation between a lack of progress in global disarmament efforts and proliferation of nuclear weapons. It was observed by some that the stationing of American tactical nuclear warheads in Europe contradicts the spirit of the NPT, and therefore needs to be addressed by the governments of the countries concerned. The demand side of the proliferation

problem could be addressed, in part, by decreasing the value of nuclear weapons through invigorated incremental disarmament efforts. Furthermore, increasing public awareness of the dangers involved with nuclear weapons could play a beneficial role in achieving a decrease of their numbers and eventually their elimination altogether.

2. Iran and the Middle East

The key to a solution of the controversy surrounding the Iranian nuclear energy programme is the building of mutual trust and confidence, rather than a fixation on the suspension of uranium enrichment activities, as the latter cannot be sustained in the long term under the rights provided by the NPT to which Iran is a member. To this end, however, it is in the interest of Iran itself and of the entire non-proliferation and disarmament regime, to use the opportunities that exist to significantly enhance transparency regarding both its past and present nuclear activities. Other options exist for all parties involved that could strengthen mutual confidence, such as Iran ratifying the Comprehensive Test Ban Treaty (CTBT). First and foremost, however, it is time that the US and Iran undertake direct one-to-one discussions. Without it, it is hard to envisage a satisfactory outcome of the conflict. It was noted that sanctions have become part of the problem: they escalate the conflict without providing any solution. All members of this working group were convinced that the use of military force should in any case be avoided.

3. The Korean Peninsula

It is gratifying that recent developments in the context of the 6-party negotiations have generated a breakthrough in the previous deadlock between the government of the DPRK and the other 6-party group members. Optimism was therefore expressed regarding the feasibility today to provide the DPRK the security assurances it desires and to finally establish a Peace Treaty between the 4 main Parties involved. Given that prospects now exist for realizing a complete denuclearization of the Korean Peninsula, it seems justified to currently carry great expectations, but that for the moment still need to be accompanied by considerate caution.

4. The peaceful use of nuclear energy and the nuclear fuel cycle

Given the fundamental role of energy supply in economic development, it is becoming increasingly evident that the world will continue to experience large increases in energy

consumption. The concurrent substantial increases in the global demand for electricity, as well as the need to mitigate global climatic change and ensure energy resource security, may lead to a sizeable increase in the use of nuclear energy world-wide and correspondingly the construction of new nuclear power plants during the forthcoming decades. Of concern, however, is that—if realized—this trend regarding the peaceful use of nuclear energy is likely to lower the barriers to black market activities. Also, due attention needs to be paid to possible deficiencies in adequate governance that new nuclear energy countries will need to be characterized by. In the light of these developments, it would be advantageous for all to ultimately transparently and fairly internationalize the front-end and back-end of the nuclear fuel cycle, avoid the use of double standards, and fully render the IAEA's Additional Protocol as the new norm for nuclear safeguards. To facilitate steps in this direction, the nuclear weapons states must do more to fulfill their NPT article VI obligations.

5. Nuclear Weapon Free Zones

It was generally agreed that the establishment of Nuclear Weapon Free Zones (NWFZ) remains an important asset for the cause of nuclear non-proliferation. The deficiencies observed in the six treaties that so far have been established in this regard could be addressed by using the amendment clauses available in the corresponding treaty texts. This would allow a better exploitation of several of their benefits, primordial among which is that they provide a strong disincentive to proliferate. In particular, the practical measures needed to implement a NWFZ in the Middle East deserve urgent attention by not only the countries directly involved but also by the entire international community.

6. The India-US nuclear deal

The intended US-India nuclear deal, while receiving credits in several circles for bringing India closer to the non-proliferation regime, was strongly criticized for not going far enough in this respect, inter alia for the liberty it possesses with respect to deciding which facilities will actually fall under the deal. It is recommended that the US-India deal receives further in-depth analysis, in terms of the benefits and disadvantages that it implies for efforts to halt nuclear proliferation and promote nuclear disarmament.

Report on Working Group 3

Co-conveners: Alan McGowan, Beppe Nardulli

Rapporteurs: ISYP Antoinette Hildering

ISYP Marianna Evtodjewa

The Middle East. The role of Europe and of Mediterranean cooperation

Within the Working Group, the discussion mainly focused on the Palestinian – Israeli conflict, the situation in Iraq and the position of Syria and also Iran in the region, both related to those issues and in the broader context of the Middle East. The role of the US and Europe came up where relevant in relation to those discussions.

Palestinian – Israel conflict

The situation and conflict between Israel and the Palestinians was presented by both sides. The coming Middle East Conference—to be held in Annapolis, Maryland, aimed for in November—was elaborated upon and both hope and scepticism were expressed concerning the prospects of its success. The situation on the ground in the Palestinian territories was presented, e.g., by showing the combined effect of policies such as the building of the wall and the location of settlements in the West Bank, to which some degree of disagreement remained relating to facts and terminology. The situation in Gaza and the position and involvement of Hamas were also discussed.

Six main points of apparent agreement, in relation to both the Middle East Conference and the peace process at large, were:

- There needs to be a clear outcome from the beginning that shows the end of occupation; there is no need to start all over again, but continue from where the negotiations stopped.
- The 2-States solution seems to have the support of both parties and their populations.
- The Arab Initiative can serve as a base to the Conference and peace negotiations, accepting the pre 1967 borders and recognising Israel's place in the region.
- The peace and the peace talks need to be comprehensive, including also Syria and Lebanon.
- There needs to be an end to the violence, which will require reciprocity.
- Time is of the essence.

General agreement on these points seems to exist, and might provide optimism for the peace process. Pessimism seemed to mainly relate to problems in further defining and applying these points. Issues relating to the six points

just mentioned that arose, included the following:

- The lack of trust in peace processes all the more requires clarity on the outcome and final status from the beginning of the Conference on. It needs to be clear that it will result in the end of the occupation. From there, e.g., negotiations and the implementation of the Roadmap is to take place – including issues such as the refugees, the Golan and security. Scepticism is largely present for a series of reasons, including the failure of earlier peace processes and the practice on the ground such as violence against civilians from both sides, continuance of settlements and other measures contradicting the expressed intentions. As a result, trust in the other party and in the leaders that already have a weak position is little. If the Conference would fail or only produce general principles, the position of the ones that still hope for a peaceful solution of the conflict will be further undermined. Moreover, the US as the facilitator is complicating the process, since they are part of the conflict instead of a third party viewed as neutral by both sides. A call for stronger commitment and involvement of the UN and Europe was expressed.
- The 2-States solution was the one solution mentioned by all sides. The difficulties lay in defining the two States: although the general agreement on the pre 1967 borders can be at the basis for acknowledging two States, the actual borders still need to be defined. These borders remain disputed and will have a huge impact on the negotiations, their results and their acceptance. There is some acceptance by both sides of land-swaps, but major issues on the size and the quality of the land swapped need to be overcome. It was agreed in the discussion that the Palestinian split into two by the situation in Gaza requires a solution that has to be decided upon by the Palestinians themselves and that others need to support and stimulate such a solution.
- There seemed to be agreement that there is no need for Hamas to recognise Israel since Israel does not need that recognition as a State; the acceptance of the Arab States of a place in the region seems much more important.
- It was agreed that a comprehensive peace requires the involvement of all relevant parties, including Hamas and also Syria. The Conference can focus on the Palestinian – Israeli conflict, which seems more than enough to deal with at this specific Conference, but for the larger Middle East peace process other issues such as the Golan need to be taken in as well. The current exclusive structure of the Conference and the position of the US and

Europe toward Hamas stand in the way of the comprehensive peace required and complicate successful implementation of whatever outcome of the Conference.

- Violence against civilians was clearly condemned by both sides. The trouble there seems to be who is going to be the first to stop targeting the civilians, whether it be the rocketing of the Israeli civilians or the killing of Palestinians. Respect for the human rights of the other party and implementation of humanitarian law remains problematic in a situation where the violation by the other seems to serve as a reason not to live up to own duties as well. Disagreement remained on violence used against the occupation such as against Israeli soldiers.
- Time is of the essence; both Palestinian and Israeli people are tired of the conflict, plus the idea of the 2-States solution is now accepted, which might not be the case if the present opportunity for peace is not taken up.

It can be concluded that during the discussions, agreement seemed to exist on the urgent need for a comprehensive peace that is based on the 2-States solution, with an outcome clear beforehand. To an extent, disagreement remained on both facts and perspectives, such as on the chances of success for the coming Annapolis Conference. For the Conference to have a good chance to succeed, it needs to include all parties and needs to have a clear outcome, not just principles. The urgency of reaching such an outcome was strongly emphasised by many participants in the discussion. All agreed that the focus needs to be on the future and that both parties have a large interest in and wish for peace, but it also became clear from the working group that bridging the remaining gap requires third party involvement. There was some feeling that Europe, not the United States, would be a more appropriate third party. Pugwash could play its role in this by continuing and strengthening its efforts to bring both sides together, facilitate dialogue and underline common grounds and shared interests.

Syrian-Israeli relationship

Participants of the working group agree that the Syrian-Israeli relationship is an important part, one of the main tracks of the Middle East peace process. But the problem of involvement of Syria to the talks on the Middle-East issues which are to be held in November, 2007 in Annapolis, Maryland (US) still exist. This and stopping of the Syrian-Israeli talks is one of the important issues (tendencies) of the political process in the region. The main problem is that neither Syria nor Israel wants to

undertake any gestures, or concessions, to another side on the questions which might be put on the agenda (return of the Golan heights, cooperation between Syria and Iran, Syrian ties and financing of Hezbollah, Palestinian refugees in Syria, etc.).

Israel is reluctant to initiate peace talks with Syria because the present situation in the Golan heights is stable, there is no violence or clashes, the Israeli boarders at the side of Golan are comparatively safe (it is Syria that provides nowadays such stability and security). In this situation Israel from the one hand continues to built new settlements on the territories of Golan plateau (most of the 30 Israeli settlements situated there were built in the 1990-ies), and from the other hand prefers to keep status-quo in relationship with Syria offering instead of it only measures on regulation of Palestinian-Israeli conflict. That is why as some experts regard at present day it is almost impossible to explain to Israeli society the necessity of talks with Syria.

Syria also nowadays doesn't want to implement any steps to promote dialogue with Israel. Syria feels itself isolated. Syrians have no allies in the region at present day and that is why they have to turn to more close cooperation with Iran. Besides Syrian authorities continue to consider Israelis as invaders who captured the heights, and they cannot agree on concessions with Israel on Lebanon issues because of importance of "Lebanon question" for Syrian policy. As some experts warned, if Syria will express less tough and more open positions in relationship with Israel and the US it may lead to weakening of positions of president Bashar Assad and to political instability in Syria.

Nevertheless the peace process in the Middle East cannot be implemented without regulation of Syrian-Israeli relationship; otherwise Israel could not manage to prevent further attacks from Hezbollah, the situation in Lebanon would remain instable and possibly would run out in new clashes, fall of Lebanon government, etc. Besides there are some tendencies that may be favourable for promotion of peace process. For example, as some participants recognise, the structure of possible peace regulations between Israel and Syria may be more simple than between Israelis and Palestinians. Also Syria may be regarded as a reliable partner that fulfils punctually conditions of treaties that it signs.

During the sessions of the working group some *recommendations* were offered according to which the Israeli-Syrian bilateral talks and inclusion of them into the agenda of the Middle-East process could be possible. First, Syria and Israel should both be able to offer each other

beneficial measures that could promote the peace process. These measures should include: a) elaborating of mechanisms of return of Golan heights to Syria or dividing of the lands; b) some guarantees from Syrian side that it will not support anti-Israeli activity of Hezbollah and other radical groups in Lebanon and will not maintain ties in this sphere with Iran.

At the same time as some experts recommended, Syria should be more flexible in international politics and especially in issues of relationship with Israel, Lebanon and Iran, and also Syrian leadership need to demonstrate to international community more clearly their willingness to start peace talks (by means of mass media, in speeches of Syrian officials, etc.). Israel, on the other hand, as some working group participants argued, ought to draw up peaceful dialogue with Syria. From this point of view, Israel should convince Washington of the necessity of starting of new round of talks with Syria, and the initiative of such talks should proceed from the US administration. From another point of view, Israel and Syria may start consultations on peace process on bilateral basis without involving the US in talks. In particular, as some experts recommended, Syria should draw more attention to improving relationship with European countries and involve them more widely in the peace process.

Situation in Iraq

Problems of political development in Iraq secured a special part in consideration of political processes in the Middle East. During the session of the working group the participants turned their attention to the questions of electoral processes and development of democracy in Iraq, political clashes and tensions and sectarian problems within the Iraqi society, growth of number of Iraqi refugees, problems of possible withdrawal of US troops from Iraq and low effectiveness and activity of Iraqi security forces, possibilities of Turkey operation in the Northern Iraq against Kurds, etc.

Many experts acknowledged that situation in Iraq has deteriorated in the last two years (2006-2007). These tendencies may be confirmed by high increase of refugees who fled from Iraq because of spread of violence (the number of refugees to Syria and Jordan already exceeded 2 million), and the strengthening of sectarian tensions in Iraq.

In discussion on causes and different kinds of violence in contemporary Iraq most of experts agreed that it is necessary to divide violence of different Iraqi groups

against occupation forces, violence between sectarian groups (Shia and Sunni), criminal violence (including kidnapping), and political violence. In this connection some experts pointed out that often the importance of sectarian tensions in Iraq is overexaggerated, and besides the political and social causes of increasing violence are underestimated (for example, "Al-Qaida" can "hire" a potential suicide-bomber in Iraq for \$100). From the other hand, as some participants argue, sectarian factors still exist and possibly the significance of them will even grow. Thus, many people Iraqi people perceive the violence as a sectarian matter (they blame for murders and killings of their relatives Shias or Sunnis). As many experts affirmed, the role of sectarian factor may also grow because of a wide involvement of different countries of the region in Iraqi political processes. Among the key players in Iraq the participants of working group mentioned Iran, Turkey, Syria, Saudi Arabia and other Arab countries. In a whole as it was emphasised the role of these countries and the balance of forces in the region in the last years significantly changed: Iran strengthened its positions due to close ties with Shias, Arab countries, on the contrary, lost the previous role and faced with new problems of widespread of instability and violence, refugees and others.

As for Turkey-Kurdish issues specifically, many experts expressed deep concerns that tendencies oriented on further federalization of Iraq and separation of Kurdish territories from it alongside with the growth of anti-Turkish terrorist activity of Kurds will remain in the region.

On the questions of possible terms of withdrawal of American troops from Iraq and strengthening of Iraqi security forces many experts within the working group had quite different visions. They agreed that demolition of Saddam Hussein army and security forces in which Sunnis played the main role had led to many negative consequences in the Iraqi security sphere, which is one of the reasons why it is very difficult nowadays to improve security situation in the country. In discussion about positions of American forces in Iraq many experts agreed that they definitively have lost a credit of trust of Iraqi people and might be therefore right now withdrawn from Iraq and replaced by international forces. However some of the WG participants argued that withdrawal of troops will lead to more negative development of situation in Iraq (to civil war and raise of sectarian clashes, to turn of Iraq into a huge terrorist base and headquarters, etc.).

Among the recommendations on situation in Iraq that were offered by working group participants must be mentioned the following:

- On the problem of Iraqi refugees it was suggested that a special document should be elaborated to determine general priorities of rendering assistance to Iraqi refugees in different countries (Syria, Jordan, etc.). This act should include means of improving life conditions of refugees, provide social assistance, assistance in getting jobs, etc. If it would not be done, as some experts affirmed, we may face in the future a possible repetition of the Palestinian scenario with the Iraqi refugees;
- Many WG participants also emphasised the necessity of adoption of special UN resolution on assistance in unification of Iraq. This document should define some conditions of promotion of further peace process in Iraq, fix the principle of indivisibility of Iraq, and also include some necessary obligations of neighbouring countries on non-intervention in Iraqi affairs.

Report on Working Group 4

Chairs: Lynn Eden, Claire Galez

Rapporteurs: Abeer Yassin, ISYP Noam Rahamim

Religion-inspired political movements, the spread of radicalism and the consequences of the "War on Terror"

Religion has always played an important role throughout the world, both in the east and the west. It played a central role in great changes in human society through the centuries. Through the 20th century might be seen as the most secular one, we are now witnessing a revival of religious movements and increase in their radicalization.

In our working group we dealt with this interdisciplinary issue from different perspectives, and devoted our three sessions to discussions on geographical areas as the Middle East and Central Asia and to a global discussion on the consequences of the so called "the War on Terror". We concentrated mainly on Islamic movements in these regions and in the context of the War on Terror, as they have been major players. The leading question of the discussion was why is there an increase of Islamist political movements and what is their nature?

During the first session we focused on the idea of the Shia Crescent as a myth or reality. The Crescent is the continuous of Shiite communities from Lebanon, through Iraq, the Gulf countries, Iran and further on into Asia, and presented by surrounding Arab and western leaders as an ethno-religious based threat. The second session dealt with the Middle East, particularly the Palestinian-Israeli

conflict, and in Central Asia, Afghanistan and Pakistan. On the third session we discussed the issue of the "War on Terror" and its consequences.

A consensus in the group was that it would be a mistake to consider the Shiites as one monolithic entity. The Shiite world in itself is divided to different political levels and frameworks, a fact that is expressed in aggressive confrontations between Shiites, both on local and international spheres. It seems that the loyalty and political affiliation of local Shiite communities are not dictated by the religious element, which only play one part in a much more complex system of identity characteristics.

It is important to note that states and local groups, whatever their religion may be, are still largely motivated by political interests rather than religious ideology. The examples for this are many and varied: in the war between the Christian Armenia and the Shiite Azerbaijan, Iran chose to support the Armenians, rather the Shiites; today, Sunni groups in Iraq are fighting the Sunni al-Qaeda; Shiite groups in Southern Iraq use more violence against each other than against the foreign British forces; in Afghanistan, Shiite Jihadists are now taking part in the Sunni government, and the list goes on. It is to say, national and political interests usually override religious affiliations.

Our focus quickly shifted to a more fundamental issue of the relationship between Persian-Shiite-Iran and the Arab-Sunni-World that historically have experienced violent enmity and lasting tensions. The rise of Shiite groups to power, first in the Islamic revolution in Iran, Hizbulla in Lebanon and now the US-supported elected government in Iraq, has a potential of a wide range political influence on neighboring countries, especially in the Gulf area, which have significant populations of Shiites, some even as a majority of the general population. Traditionally, deprivation of civil, social and political rights is common with regards to these groups, who do not get proportionate, and sometimes even any, political representation. As in other cases, suppressed communities turn to look for assistance from external players, namely Iran. This is true not only for Shiite groups but for the Palestinians as well. While the official regimes are insensitive, unable or unwilling to insure stability and human rights for their population, social-religious movements come to fill this gap and gather a wide popular base of support. Therefore, it is a social and political phenomenon by its nature, rather than religious, and it is strengthened also by the weakening of the Arabic nationality and political regimes.

In the more general context of globalization, nationality is losing its presence with the mass populations. Old-new identities of ethnicity, tribalism and religion are rising, and with them old-new confrontation. The media is contributing significantly to these confrontations, with an extensive use of a language that stresses an “us vs. them” approach, expressed even more in context of the so called “War on Terror” – when you are “either with us or with the terrorists”. The parallel processes create intra and inter state tensions and evoke instability throughout the area, to the level of posing a threat to contemporary regimes. The major players to utilize this situation are Iran, which gather support with growing Shiite populations, and Islamists-wahabi groups, inspired by Afghan Jihad, supported by Saudi money. These groups were first to introduce religious justifications to existing ethno-national conflicts, such as in Pakistan, Kashmir and Chechnya.

Therefore, it was the consensus in the working group that in this respect, religion itself is not an engine behind political movements, but rather is used as a mobilization tool by political leaders and groups. On the other hand, religious movements use the political sphere to gain more influence and expand their constituency by political tools. In fact, religion and politics play a game of two-way interaction and cannot be separated.

Political vacuum invites militancy and extremism. In most cases, religion and religious justifications come to play as a reaction to bad rulers, when it becomes the only available channel of expression, venting frustration and welfare for many. This facilitates the rise of spontaneous religious leaders who find it easy to play on emotions of fear and hatred, in order to gain popularity, and by that fueling a process of radicalization and conflict.

Since it is indeed a campaign for the hearts and minds of people, we noted that the best way to counter this process is by establishing good governance, in a format that is relevant to the local traditions, sensitive to its peoples’ needs. It was noted that in Pakistan, the process of opening to democratic ideas helped to reduce tensions and weakened the ability to mobilize for violent acts. As long as liberal and moderate voices cannot be heard and new forms of conflict management between the state and the individuals cannot emerge, a polarized environment is sustained, between a suppressing, usually corrupted regime, and extremist, radical and usually violent movements.

However, there was a consensus that a blanket response to these movements is a mistake that will harm our ability to differentiate between groups, as there are

many shades of gray there. It is essential that we both understand and engage with these groups to create an environment in which new possibilities for change in the relationship can be developed.

Furthermore, the development of the “War on Terror” shows clearly that the use of only military means is counter productive with winning the campaign for the hearts and minds. During the six years of this War, the Jihad arenas have only expanded to different countries and violent Jihadi terrorism is rising. On the account of the growing violence, opposition groups in Arab states are gaining power, building on the unrest in the Muslim street.

When taking about Terrorism, we acknowledged that it is the deliberated targeting of civilians. If we wish to overcome terrorism we have to pay the relevant attention to both elements of operational capabilities accompanied by motivation, with a greater emphasis on reduction of motivations. This can come in the form of establishing effective institution and education, increasing economic investments and opportunities, restoring a sense of dignity and more. In this way we would be able to isolate the radicals and win the hearts and minds of the people.

This does not mean a full and immediate withdrawal of foreign forces from Iraq and Afghanistan. The “magic solution” of “Democracy” is also not suitable, and Western forces should not impose ethno-centralistic ideas. Rather there is an urgent need to increase efforts for reconstruction and reconciliation, based on conversation with the local people. Efforts should be designed to emphasize the advantages and interests of working together and support good governance. This responsibility is shared both by western forces and by local regimes.

Several short points for conclusion:

- Social injustices are a focal source for internal instability, and it has profound influences on regional and international relations. Therefore we should focus on common interest of internal stability and prosperity, based on human rights and equality.
- As principle, initiate conversation and dialogue with an attitude of including, not excluding.
- Regimes should improve relations with existing local communities, in terms of civil, social and political rights, and economic conditions.
- For external forces, with emphasis on the US, it is crucial to shift efforts back to the use of soft power and cultural diplomacy. Great power can bring about tremendous damage but can also create tremendous good.
- Utilize positive interpretations and peaceful elements in

Islam. As religion was used to divide us, we can use it as a source of unity for all humans, stressing our communalities rather than minor differences. This is a long-term mission for mass education process especially in the Muslim world, and a responsibility of the states to override the Madrassas' influence, but it can start now.

- All players must be SELF-critical, continually re-choosing the more humanistic interpretations of their own religion and policy.

One comment was made, which we personally find deeply important. It is probably the most quoted sentence in this conference: "Remember your humanity and forget the rest". We say that again because during our very interesting discussion, we found ourselves repeatedly drawn into a political debate, focusing on politics rather than on humanity, drifting away from the power of this idea. So in this context it is curtail that we continually remind ourselves of this two-fold truth: Remember your humanity and FORGET the rest.

Report on Working Group 5

Co-conveners: Professor M E Muller and

Dr. Aharon Zohar

Rapporteur: Happpymon Jacob

Non-military Threats to Security

The group had a great deal of discussion on the theoretical as well as the practical, policy and political aspects of the many non-military threats to security. The group recognizes that major threats to humanity today emanate not only from inter-state wars or arms races but from environmental degradation, climate change, diseases, inequality, poverty to name a few. This is the age of subaltern politics. The group particularly stressed the importance of re-theorizing security so that the program for action to combat non-traditional threats to security is not without adequate theoretical and conceptual foundation. Human discourses and concepts of non-military security should translate themselves into discursive practices, political projects, and national and international advocacy.

It was considered that human security, from a conceptual point of view, is an evolving, expanding and developing concept. Human security is a much debated and written about concept and it did evoke a great deal of discussion in the group. Despite criticism about its 'expandability', which can potentially render it ineffectual from a practical point of view, it was felt, after considering

the pros and cons of its 'all-inclusive' and 'expandable' nature that it is better to let the concept evolve and expand in the course of time. Human centered discourses should be seen as a normative aspect of the international community. Such discourses carry the power of emancipation and upliftment of the downtrodden.

It was pointed out that today a large share of human discourses is unfortunately limited to citizens, leaving stateless people even more vulnerable; it is necessary to include non-citizens in such crucially important discourses.

Sometimes there can be tension, from a practical point of view, between the standard of justice and standard of humanity while implementing the principles of human discourses. However, both standards are intrinsically inter-linked to the human discourses of security, rights and development, and include associated responsibilities. It is not justice alone that should prompt us to act in favour of human security. Humanity offers us an equally forceful trigger as well as a clear basis for identifying moral, political and legal obligations. In this regard, it was pointed out that sometimes reaffirming our humanity may come first.

It was also felt that even as human discourses give a lot of importance to developing universal norms, it is necessary to give importance and recognition to local narratives. Promotion of Subaltern schools of human discourse assumes great significance in this regard. When dealing with universal human discourses, care should be taken to avoid both ethnocentrism and ethno-guilt. While local peace and justice systems and local narratives on non-traditional security are to be promoted, it is also important to understand that universal principles are not necessarily equivalent to Western principles.

One of the ways security can be demystified and used for the wellbeing of disadvantaged sections of humanity is to use the tool of securitization. The concept of human security, that keeps the human person at the centre of theory and praxis, has benefited a great deal from the concept of securitization which is an inter-subjective, constructivist, emancipatory and political project.

Despite its (securitisation's) inherent strength in empowering the security of the human person, it needs to be kept in mind that undue and careless processes of securitisation can lead to depoliticisation, creation of militarized solutions to political problems by self-seeking security elites. Such misuse has been witnessed in the ongoing war on terror, the perception of Islam and in dealing with the environment.

Under such circumstances, it is necessary to de-securitize such issues and bring them back to the normal political realm where open and unconstrained debate on issues is possible and nuances can be understood as a result. The importance of the dynamic and the discursive process in the acts of securitization and desecuritisation needs to be stressed here.

An important thematic debate in the group was terminological in nature. Whether issues at stake and under discussion in a group like ours are to be termed as 'threats' or 'challenges' was carefully considered by the members of the group keeping in mind the fact that terms, words and speech can go a long way in understanding issues and problems and can consequently determine the *modus operandi* of addressing them. It was felt that the seriousness and context of the threat would need to be carefully considered while terming it one way or the other.

The deliberations of the working group had focused on the following non-military threats to security: climate change, migration human rights, circumvention of international law, poverty, diseases, HIV/AIDS and demographic issues. There were more issues i.e. water resources, energy, food production etc. that were not mentioned.

One of the key main threats to security are climate change and environmental degradation. The existing global security framework itself needs to be transformed in order to include threats to human security such as environmental degradation. It was pointed out that while climate change and its impact on security will impact on the entire world, it will harm the developing and poorer parts of the world more acutely.

Even as more and more focus should be given to environmental security, it is necessary to inculcate attitudinal and behavioral changes in safeguarding the environment.

Migration and related human rights issues were considered to be another important issue in the non-traditional security paradigm. The international convention for the protection of rights of all the working migrants and members of their families, passed in December 1990 by the UN General Assembly, admits that many working migrants and their families are unprotected by national norms. These issues should be addressed by the international community.

Illegal immigrants face more violations than the legal ones even though legal immigrant workers are not completely free from rights violations. More significantly, it was pointed out that there is a gender dimension to the rights violations of the immigrant communities as women

suffer more from poverty, rights violations and even sexual abuse. Thus governments of the well-off countries have to be persuaded to keep this in mind such humanitarian concerns when framing policies relating to immigrant labour.

The group also considered that in order to ensure justice for humanity, it is necessary to have respect for international legal norms, laws and international courts. However it is saddening to see the manner in which some states circumvent the provisions and spirit of the International Criminal Court. Specific mention may be made of the UN Security Council Resolution that the ICC must refrain from initiating any investigation or trial against any state that is not party to the Rome Treaty on the basis of the facts or omissions connected to an operation established or allowed by the UN. To cite another such example, the United States has repeatedly signed bilateral treaties with individual countries to claim immunity for its forces brought to trial. Such actions by governments will undoubtedly violate human rights.

Poverty is another non-military threat to be discussed and tackled. There are many global structural reasons for its continuation and aggravation. The adoption of the 'Washington Consensus' in Latin American countries is a case in point. The adoption of socio-economic policies suggested by the Washington Consensus pushed many of these countries into deep crisis. In real terms, this meant reduction of the role of the state from its traditional economic ones, consolidation of oligopolic economies, disinvestment in basic infrastructure, fund cuts in education and health and the privatization of these sectors, increasing external debt etc. This combined with the lack of representative democracy, social and political instability, large scale corruption among other such socio-political problems in these countries have added to the existing insecurity of the people. It was felt that the role of the state has to be re-established as coordinator of social organisation, provider of public goods and as regulator of fair, democratic labor and labor union relations. Allocating resources and determining priorities cannot be left to the market.

One important means of empowering the people especially the youth is by imparting socially relevant education. The use of education to resolve socially complex situations for students was appreciated by the group. The exposure of youth to research and developments in science will not only prompt them to continue with their quest for knowledge but will also instill scientific temper in them. In

an era when we talk of the responsibility of scientists to be ethical in their endeavours, it is necessary to promote such alternative ways of promoting scientific temper and ethical scientific practices.

Diseases pose a great deal of insecurity to humanity especially to the more unfortunate ones. While on the one hand certain diseases are just not curable, these incurable diseases have a more pronounced impact on the poor. Even when some of them are curable, millions die due to sheer lack of health infrastructure and medical help. HIV/AIDS is one such disease that has killed hundreds of thousands of people all over the world. Africa is the continent worst hit by the AIDS epidemic. Of the 40 million people living with HIV/AIDS worldwide, nearly 75 per cent live in sub-Saharan Africa, which is inhabited by just 10 per cent of the world's population. More so, among the 22 million people who have died of the disease, 14 million have been in this region. Malaria is another such killer disease. More than two billion people, around 40 per cent of the world's population live in areas of high risk of malaria. It may also be mentioned that around 90 per cent of the world's disease burden falls on the developing world. Yet only three per cent of the research and development expenditure of the pharmaceutical industry is directed towards those ailments since their markets are not particularly lucrative to the companies. Here lies the social responsibility of science and scientists.

While it is necessary to give funding to the developing world to fight these diseases, funds alone won't get us anywhere. There needs to be public education, increased awareness and local government responsibility to fight these human security threats effectively.

While considering effective ways of fighting HIV/AIDS new research findings would need to be considered. To cite an example, evidence now exists that HIV infection has a much greater impact on the mucosal immune system of the gut where 98 per cent of the CD4T cells are found than on its systemic counterpart, that is, the bloodstream, where only 2 per cent of the CD4T cells are found. This latest insight on HIV infection has implications for ongoing vaccine research and development, improving existing therapies and finding attractive therapeutic approaches for HIV infected persons.

Another aspect of crucial importance in this regard is the issue of anti-biotic resistance which may be termed as a formidable threat to the human race. Because of extensive usage and misuse of antibiotics, we are today faced with a number of super bugs that can not be killed by

existing antibiotics. Super bugs are those pathogens that have developed multiple mechanisms to express antibiotic resistance to counter antibiotic effects. It is necessary that the general population and the scientific community wake up to this threat. The strategies to deal with them are currently preventive in nature such as using environmentally safe multivalent vaccines, multiple antibiotic therapy, recombinant genetic technology and public education about the nature of antibiotics. It was also pointed out since the total sales of all kinds of antibiotics is only around \$25 billion per year, most pharmaceutical companies are moving away from drug research and development owing to higher cost and time involved and low return of investment.

On a different note, there was also an important presentation in the group on the future of the global population which evoked a lot of substantive debate. While the deliberations of the group were more or less focused on direct and immediate threats to human beings, the argument that the global population, especially in the developed world, will stabilize as a result of which the elderly will outnumber the young and the global population will cease to grow led to an interesting discussion. Such restructuring of the age-pyramid will have implications for global security, social security, economic priorities and ethnic composition of countries. Such issues of long-term impact on humankind will need to be factored into understanding security, the group felt.

In conclusion, I would like to report that we discussed the important concept and practice of human security from a variety of perspectives including political theory, international law, medical research, science education, demography, and sustainable and equitable development. One of the key benefits of debating non-military security issues in groups like this with participants from a broad spectrum of disciplines and streams is that there is a real possibility of doing so beyond disciplinary boundaries: many of these non-military threats are international and interdisciplinary so we need the expertise of participants from a variety of fields.

Concrete Suggestions for Future Pugwash Agenda

- Continue to include more discussion on non-military aspects of security in pugwash meetings.
- Include a greater variety of issues.
- Include a plenary panel discussion on non-military security at the next Annual Conference.

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Pugwash Workshop on Self-Governance in Jammu and Kashmir: *Building Institutions for Peace in J&K, and Improving Cooperation and Communication across the LoC*

Colombo, Sri Lanka, 22–24 July 2007

Workshop Report

by *Claire Galez*

The July 2007 Pugwash workshop in Colombo is the 4th Pugwash initiative since December 2004. The meeting was attended by eminent delegates from India, Pakistan and Kashmir; intellectuals, former diplomats, Kashmiri leaders, mainstream Kashmiri political parties' and civil society's representatives from both side of the LoC. The last Pugwash workshop had been held in Islamabad in March 2006, the report (www.pugwash.org/reports/rc/sa/march2006/march2006-

report.htm) contains the background and status of the India-Pakistan bilateral composite dialogue, which includes negotiations and national processes with regards to J&K

Since then, on December 5, 2006, in a significant departure from Pakistan's traditional position on Kashmir, President Musharraf, announced a "Four Point Formula" for the resolution of the Kashmir dispute. This formula envisages soft borders across the LoC for the free movement of people, self-governance on both sides of J&K, phased demilitarization and joint supervisory mechanisms. President Musharraf's proposal builds on the basic understanding reached between him and Indian Prime Minister Dr. Manmohan Singh that although the Kashmir status quo must change, there can be no redrawing of boundaries and yet, the LoC could become "irrelevant". Even if the three first points raise a number of crucial questions in terms of their contents and implementation-capacity bilaterally and by each country respectively, the fourth issue of joint supervisory mechanisms may be the most contentious.

In 2006-2007, the two countries have had a sustained dialogue and progressed on significant issues, including the opening of five crossing-points between IaK and PaK; protocols and agreements on

trade links. Protocols and agreements on movement of people across the LoC; the Wullar Barrage and Kishanganga power project, the Baglihar Dam on the Chenab River and the question of joint mechanisms in order to monitor and fight against the spread of terrorism in the region have also been discussed.

In 2007, President Musharraf and Prime Minister Manmohan Singh declared on several occasions that the peace process had become "irreversible" even if the restoration of trust between the two parties will take some time and remains a cornerstone for genuine improvement both in terms of bilateral relations and on the issue of Kashmir in particular. In India, Prime Minister Manmohan Singh initiated the creation of five Round Table Working Groups where all parties, including opposition leaders to Indian rule, are invited to participate. The WG are intended to develop a consensual approach on major issues of public interest and cross-border relations and include: Confidence Building Measures across Segments of Society in J&K (IaK in this case) – Strengthening Relations across the Line of Control – Economic Development in J&K (IaK) – Working Group on ensuring Good Governance in J&K (IaK). Both factions of the Hurriyat Conference and other secessionist leaders have so far declined to participate.

Throughout the document, unless otherwise specified, "Kashmir" or "Jammu and Kashmir" is taken to mean the whole territory comprising both Indian and Pakistani Administered Jammu and Kashmir

Acronyms used in the document:

J&K:	Jammu and Kashmir
IaK:	Indian Administered Kashmir
PaK:	Pakistan Administered Kashmir
NAs:	Northern Areas
LoC:	Line of Control
CBMs:	Confidence Building Measures
APHC	All Parties Hurriyat Conference
WG(s)	Working Group(s)
SAARC	South Asian Association for Regional Cooperation
SAFTA	South Asia Free Trade Agreement

With the ceasefire on the LoC holding since August 2003, a noticeable decrease in terrorist violence in the state, a popular mood in favour of reconciliation and major parties including the Hurriyat Conference (Mirwaiz Umar Farooq-lead APHC) making declarations to the effect of supporting the peace process, positive ingredients have now been injected for the dividends of normalization to be progressively generated. In the context of Kashmir nonetheless, even if there is a more constructive debate taking place, the processes of implementation of Kashmir-specific CBMs need urgently to be reinforced and put into motion.

General Debate

Pugwash Colombo workshop mainly concentrated on the present status of Kashmir-specific CBMs and on the necessary institutional arrangements that would further promote India’s and Pakistan’s efforts of normalization. The participants recognized that functional and sustainable institutional arrangements were essential in addressing the main issues of relief for the Kashmiri population, economic development of the entire state and political inclusiveness of all parties concerned. As often reflected upon, Kashmir has the full potential to be a bridge of good neighbourliness between India and Pakistan rather than remaining a potentially

highly dangerous zone of conflict that impacts on a large range of regional and international issues.

Participants at the Colombo workshop also reiterated that violence or a military solution to the Kashmir issue could definitely not offer any avenue for the resolution of the conflict. It was strongly stated that, in spite of slight improvements, there is still much violence in the State which is a major impediment to the implementation of Kashmir-specific CBMs.

The participants agreed that, at the bilateral level, there had been noticeable progress particularly in terms elaborating on and implementing low risk CBMs of mutual interest such as some aspects of security, trade and people-to-people contact. In the regional context, the SAARC vision 2020 spells out medium-long term recommendations for regional development and cooperation, especially in terms of economic, physical, infrastructural, people-to-people and cultural connectivity as well as specific development projects and the role of civil society in the development of SAARC. It was suggested by some participants that making India and Pakistan, including on the question of Kashmir, fully aware and active in developing their country perspective in view of achieving the benchmarks of SAARC 2020, would go a long way in supporting and facilitating a significant rapprochement between the two countries as well as greatly benefiting the situation in Kashmir.

While agreeing on this prospect, other participants were of the opinion that there are low risk security issues, Sir Creek and Siachen in particular that could be easily resolved but suffered so far from unnecessary delays.



It was also suggested and generally agreed that a final solution for Kashmir would emerge from genuine progress made on the ground. On one hand, party politics cannot be overruled, but they should not prevail to a point where they obstruct progress. A people-centric approach on both sides of the LoC and at the national level would help a great deal in finding common ground rather than leaving India, Pakistan and the Kashmiris in a stalemate. A great scope for improvement would come from looking at feasible cross-border infrastructural development in sharing of energy resources for example. Investing in the human capital that exists on both sides aimed at developing cooperative and institutionalized socio-economic activities would also go a long way. Some delegates pointed at the fact that there is an urgent need to restore the confidence of the people with very concrete and pragmatic initiatives not only in socio-economic terms but in making the civilian institutions functional on both sides of the LoC and with a commitment to a timeframe for implementation.

Specific Issues

1.1 People- to -People Contact

The Srinagar-Muzaffarabad bus service agreed upon in February 2005 and resumed soon after that, was considered to be a great achievement in itself and was expected to generate positive inter-action between people from across the LoC. Mainly, delays in the issuance of permits due to a lengthy and complex administrative process, both in India and in Pakistan, has considerably lessened the constructive impact expected from this service.

The security situation, which has to some extent improved but has not



yet reached a point of normalization and still proves to be a serious challenge to law and order and protection of the civilian population in the State was evoked by some delegates as a reason for lack of expediency measures in delivering crossing permits. Some other delegates remarked that those involved in illegal and violent activities would not wait for the bus service to be in place. On the other hand, when the bus service was announced and began to run across the LoC, people on both sides began repairing houses, setting up shops, etc. with the expectation that this was a chance to improve their livelihood. The disappointment is shared on both sides of the LoC, all the more so that at present the issuance of permits has been scaled down to family reunion only. Several delegates remarked that there needs to be a vision and a realization that people-to- people contact would be a fundamental asset for the peace process. The scope of connectivity should be enlarged to tourism, sports, professional, cultural, educational, religious, and other exchanges.

At present, neither Pakistan nor India have overcome the complexity of issuing permits to J&K residents from both sides of the LoC. The process should be simplified, possibly making State institutions and district

authorities operative in this matter. The creation of an appellate body in case of rejection may also have to be considered. Some delegates also suggested that instead of having to obtain the permit for each visit, the permit should be valid for a reasonable period of time (one year or more). Other delegates also suggested that once the permit obtained, the visitors should not be restricted to visit Kashmir alone but allowed access to the rest of the country both in Pakistan and in India.

In order to facilitate the screening process, it may be possible to use modern technology to issue identification cards to J&K residents.

In spite of the difficulties faced by the common person in obtaining the permit, it should be noted that there have now been several Intra-Kashmir Dialogue sessions. Even if it was difficult at the beginning, this has now become almost a routine exercise where permits are more easily obtained. There is thus scope for improvement on this front.

Communications and Technology

Most delegates agreed that civilian technology and communication systems are not a threat to security. Those involved in illegal activities, including terrorism, have easy access to sophisticated modern technology

and the monitoring process is now well developed by the authorities. The common person should not be deprived of most common commodities, such as land lines and mobile phones services across the LoC, in the name of security. On the other hand, the connectivity between the two sides of Kashmir could highly benefit from video conferences systems in the educational sector for example.

Routes and Access Points

While five crossing points have been opened across the LoC, there could be more border posts open to permits (ID cards) holders. Moreover, the Northern Areas of Kashmir are still very isolated. There is an urgent need to reopen the Kargil-Skardu road and broaden the scope for more connectivity between Laddakh and the Northern Areas.

1.2 Economic Cooperation

The delegates developed a consensual approach to J&K's economic development and cross-border cooperation, stating that the people of the State cannot wait for a political solution to be reached before improving the economic situation on both sides of the LoC. It was also recognized that socio-economic development would contribute to create peace constituencies across the State.

Whereas both countries' bureaucracy have been either reluctant or simply slow in identifying the type of products that could easily be traded between them, the opening of trade routes across the LoC can be cost-effective. It would open the scope for regional and much needed local economic development.

The Pakistan-India and J&K Chambers of Commerce have been identified by the delegates as the most appropriate bodies to develop

schemes and prospects for economic cooperation. It was noted that people's representatives, political parties and the civil society should also support and press for developing substantial economic cooperation.

Kashmir's cross-border trade could be integrated in the overall process of India-Pakistan trade, possibly using the SAARC's South Asia Free Trade Agreement (SAFTA) framework.

Both sides of Kashmir have much to offer in terms of local production. While one trade route has so far been identified, there should be the scope of opening more border points that would also expand the potential for bilateral trade between India and Pakistan. The computerisation of check points may be worth considering in view of accelerating the process of cross-border trade.

Kashmir also has a huge potential to generate hydroelectric power and yet due to the lack of cooperation between Pakistan and India and Pakistan's apprehension that India could use the water supply as leverage against Pakistan, no progress has been made in developing the necessary infrastructure for power generation. In winter the power generation goes down approximately 80%. If both countries and the Kashmiri industrial sector could outline a way of cooperating in the form of joint ventures for example, the prospect of intra-Kashmir economic cooperation would also find a market in mainland India and Pakistan.

Infrastructural development in terms of roads, pipelines, railways, etc. could be envisaged as cooperative enterprises/joint ventures by both countries. Some delegates suggested that it would also be worth considering a monitoring mechanism for opening J&K infrastructural development to foreign investments and

international financial institutions such as the World Bank, the Asia Development Bank, etc.

1.3 Institutional Cooperation

While debating the question of institutional cooperation, delegates pointed at the fact that all issues discussed above, came under the State's political umbrella. While not bypassing India and Pakistan (which would be unrealistic) and in full consultation with New Delhi and Islamabad, political cooperation must develop with a priority given to socio-economic development. It was proposed that a mechanism be put in place for the Legislative Assemblies on both side of the LoC to hold regular consultations with the prime objective of implementing constructive projects within a reasonable timeframe. The creation of a parliamentary commission constituted of legislators from both sides of the LoC could form a consultative body. Alternatively, some delegates suggested that if this mechanism could not be envisaged in a very near future, the Assemblies could host delegates from the Chamber of Commerce, the Bar Association, and other institutions while those would be visiting the other side of the State.

Without undermining the useful potential carried by such initiatives, some delegates pointed at the fact that, in the present context, the legitimacy of elected representatives was not sufficiently inclusive. In IaK, all parties are allowed to contest elections, even if some decide to the contrary. In PaK, there are limitations to the participatory process. On the other hand, the status of the Northern Areas, as it stands now, would exclude people from that region of Kashmir to participate in the exercise, unless as suggested by the Hill

Council of Laddakh, there would be meetings and consultations between advisory councils from both sides.

It was generally agreed that the present institutions may not be perfect on either side of the LoC but there is a need to initiate a process. Actions can only be taken at this point of time with the present institutional set up. Another proposal was that of a more linear process of sister institutions to meet bilaterally such as direct consultative exchanges between the Chambers of Commerce, the judicial, educational and other institutions.

Demilitarization

There was a general understanding amongst the participants that the presence of security forces is proportionate to the level of violence on the ground and proportionate to the threat perception.

It was generally acknowledged that the situation on the ground is gradually changing and needs re-assessment. The climate is more conducive to demilitarization of specific areas especially due to the sustained dialogue between India and Pakistan with the backing of world powers and peace constituencies in India, in Pakistan and in Kashmir.

In terms of political will and strategic perception, Pakistan seems to have lowered its reliance on militancy, while not completely closing the option, and India seems to realize that some level of pressure on the common person must be lifted without affecting the operational capability of the security forces in sensitive areas.

The other factor contributing to a more conducive atmosphere is the fact that militancy cannot be sustained without the support of the

local population. The approximate turnout of 80% at the elections demonstrated people's good will and desire for a political process with the realization that violence leads to the physical and institutional destruction of the society.

Some delegates indicated that in order to proceed successfully towards demilitarization, there was a need for bringing the militant factions active in IaK on board the political process. They indicated that there were two types of non-state actors' intervention in the state constituted of Kashmiri militants and foreign militants. It

should be clearly understood that, from India's point of view, this dialogue can only take place with the Kashmiri factions and that increasing efforts have to be made in this direction. It has nonetheless to be taken into account that those militants who would be inclined to consider a political dialogue are the ones who become the prime targets of rival factions.

Other delegates raised concerns that a decrease in political violence goes hand in hand with a credible political and reconciliation process. There is thus an urgent need for immediate measures to be taken both



Srinigar-Muzaffarabad Bus .

at State and Central levels in addressing issues such as the rehabilitation of former militants, considering schemes of amnesty, a closer scrutiny and transparency in cases of disappearances and missing persons and other issues that have affected innocent civilians.

On the other hand, a more cohesive approach to cross-border cooperation calls for a review of the civilian-military relations in the governance of PaK. The creation and reforms of the institutions and an extension of the democratic processes to the Northern Areas should also be urgently considered.

Conclusions

The meeting concluded that a comprehensive framework for economic cooperation across the LoC, making J&K relevant in the SAARC 2020 country strategies would boost the local economy and restore people's confidence in the peace process as much as it would benefit both India and Pakistan.

Economic cooperation and normalization of relations would greatly benefit from India and Pakistan joint ventures (private and public capital), especially in terms of

energy generation, cross-border management of water resources, environmental management, etc.

People-to-people contact is an essential component to the creation of peace constituencies on both sides of the LoC. It is also an essential component in enhancing and improving economic and institutional cooperation.

Although the present institutional set up on either side of the LoC would need reforms, there are several options to embark on a process of institutional cooperation that would enhance mutual understanding and capacity-building.

A demilitarization process, with due consideration for respective national interests and local and national security concerns, would lead to improvements of bilateral relations (India-Pakistan), to substantial upgrading of people's life on both sides of the LoC and the consolidation of principles agreed upon by all parties. Areas that can be demilitarized in IaK should be promptly identified. In PaK the military-civilian mode of governance and the status of the Northern Areas should be reviewed.

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Learning from Ancient Hydraulic Civilizations to Combat Climate Change

Colombo, Sri Lanka, 22–28 November 2007

Workshop Report

*by D L O Mendis, Secretary/
Convenor, Sri Lanka Pugwash*

The Workshop was organised to celebrate the appointment of Jayantha Dhanapala as President of Pugwash for a five year term 2007 – 2012. Foreign participants were met at the airport and taken back for their flights, from the Galle Face hotel, Colombo, oldest five star hotel east of Suez. The inaugural Plenary session on November 22, was in the Victoria Masonic Temple hall, within walking distance of the GFH, with Hon. Professor Tissa Vitarane, Minister of Science and Technology as Chief Guest, and Professor Arjuna Aluvihare, Chairman of Sri Lanka Pugwash as Guest of Honour. A Felicitation volume to honour Ambassador Dhanapala was presented to each of the foreign delegates and to the supporters of the workshop who were distinguished guests. The Message from President of Sri Lanka H. E Mahinda Rajapakse in the felicitation volume was read by Professor Wimal Epassinghe, Adviser to the President on Scientific Affairs. (H. E. Valerie Bogdan, Ambassador for Canada in Sri Lanka, was out of the country, so the felicitation volume was formally launched later on January 3, 2008, in the Institution of



Pugwash President Jayantha Dhanapala

Engineers, Sri Lanka, with the Canada Ambassador as Chief Guest, who spoke about Pugwash, a village in her country). Jayantha Dhanapala gave a Welcome Address and Professor Arjuna Aluvihare delivered the Vote of Thanks to conclude the opening plenary session of the Workshop.

Closed Workshop sessions were held in the GFH on two days, November 22-23, and participants were taken on field visits on November 24 – 27, to see for themselves lessons to be learned from the ancient hydraulic civilization of Sri Lanka. This began in Rajarata, the king's country, and continued to Kandy, the famed hill capital of Sri Lanka, and then to the southern area of ancient Ruhunurata. On the last day, November 28 in Colombo, foreign and Sri Lanka Pugwashites

met for discussions in mini workshop sessions in different locations in Colombo. These included meetings with Dr C G Weeramantry, former Vice President of the International Court of Justice, The Hague, and Dr Sudarshan Seneviratne, Chairman of the Cultural Triangle project and Professor of Archaeology at Peradeniya..

The field trip: In Rajarata the group visited Anuradhapura, the ancient capital city featured in the felicitation volume, and Sigiriya, described by Arthur C Clarke as the eighth wonder of the world. Quality time was spent at Kalaweva, a gigantic reservoir built in the 5th century CE, known as the heart of the ancient hydraulic civilization of Rajarata. The Jayaganga ecosystem and the Eppawala phosphate project mentioned in several Pugwash papers in the 1990s, and Maha Illuppalama Agriculture Research station where the field visit in the 1982 Sri Lanka Pugwash Symposium on Tropical Agriculture was held with Professor Roger Revelle as the representative of the Pugwash Council, were passed on the way to Anuradhapura. (The 1982 Symposium, like all other Sri Lanka Pugwash activities for more than 25 years, was not recognized by Pugwash so that participants did not qualify as Pugwashites, alas!).

In Kandy, participants visited the Dalada Maligawa, the Temple of the Sacred Tooth Relic venerated by

Buddhists, the Archaeological museum, and the open air Christian chapel at Trinity College where Jayantha Dhanapala had his early education. They also saw the Udawattekele rain forest above Trinity College, site of the Buddhist Monastery where Joseph Rotblat on his 1981 visit to Sri Lanka met and had discussions with the famed scholar Bhikkhu Nyanaponika Mahathera from Germany. A drive through visit to the University of Peradeniya and a glimpse of the famous Botanical Gardens nearby, but not a visit, began the long drive from Kandy to Pelwatte project in the far south. At Pelwatte an effort is being made by a local entrepreneur, a supporter of Sri Lanka Pugwash, to restore the earth that has been poisoned by chemicals used in agriculture earlier, by combining sugarcane farming and dairy. This was appreciated by Indian delegates since India has long since achieved self-sufficiency in milk and sugar. Lunch on the way was hosted in his ancient *walauwa* (residence) by Dr Siran Deraniyagala, former Commissioner of Archaeology, which meeting was another mini-session of the Workshop.

Proceedings of the Workshop will be published as a companion volume to the Dhanapala felicitation volume. Among the papers is one from Japan on the Commons. The Commons is receiving attention today, for example in the Worldwatch Institute State of the World 2008, 25th Anniversary edition, titled *Innovations for a Sustainable Economy*, which concludes: 'For centuries we have been told that there are only two choices for the management of scarce resources: corporate self-seeking or the bureaucracy of the



Waterways at Sigiriya.

state. But there is another way. Commons management has worked for centuries and is still working today. It can be adapted for the most pressing global problems, such as climate change'. This statement justifies the choice of theme for the Sri Lanka Pugwash Workshop as seen in the Proceedings.

27th Workshop of the Pugwash Study Group on the Implementation of the Chemical and Biological Weapons Conventions: *Moving Forward after the Sixth BWC Review Conference*

Geneva, Switzerland, 8–9 December 2007

Workshop Report

By Catherine Jefferson (Harvard
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Sussex)

This workshop was hosted by the Association Suisse de Pugwash in association with GIPRI, the Geneva International Peace Research Institute. The meeting was supported by a grant provided by the Swiss federal authorities. Participants were welcomed by the President of the Association Suisse de Pugwash.

The workshop took place on the eve of the 2007 Meeting of States Parties to the Biological Weapons Convention (BWC) and was attended by forty-eight participants, all by invitation and in their personal capacities, from eighteen countries: Australia, Belgium, Canada, France, Germany, Iran, Ireland, Italy, Macedonia (FYROM), the Netherlands, New Zealand, Pakistan, Russia, Slovakia, Sweden, Switzerland, the UK and the USA. This report is the sole responsibility of its author, who was asked to prepare a brief account of the proceedings of the meeting in consultation with the Steering Committee. It does not necessarily reflect a consensus of the workshop as a whole, nor of the Study Group. The workshop was strictly governed by the Chatham House Rule, so reference to specific speakers is not detailed here.

I: Towards the Second CWC Review Conference

The workshop opened with a report on the challenges ahead for the Second Review Conference of the Chemical Weapons Convention (CWC), which is scheduled for April 2008. It was noted that while the CWC enjoys an exemplary record of success compared to other multilateral disarmament regimes, several challenges remain. One general challenge is to ensure that the political commitment of member states to the CWC and Organization for the Prohibition of Chemical Weapons (OPCW) is maintained, particularly in view of the current deterioration of the situation in the field of arms control, disarmament and non-proliferation.

Another more specific challenge is dealing with the slower than expected rate of chemical weapons (CW) destruction and addressing potential failures to meet deadlines. Focusing on the Albanian experience, in which the CW destruction deadline was missed but the destruction was ultimately achieved, it was suggested that the CWC is flexible enough to deal with such 'mini-crises'. In regard to the more pressing situation in the USA and Russia it was urged that political efforts should be focused on the need to comply with deadlines rather than reinforcing the perception that delay is inevitable.

It was also suggested that measures must be in place to avoid complacency after CW destruction has been achieved. This raises the issue of compliance and verification more generally. It was noted that more resources will need to be transferred to industry verification and that more effective mechanisms for such verification are necessary. It was also suggested that the wider issue of non-proliferation should become more prominent in the work of the OPCW to promote effective implementation of, and compliance with, the CWC, such as designing mechanisms for assisting effective national implementation and continuing to work towards full universality.

It was further pointed out that the General Purpose Criterion (GPC) must be reaffirmed in the Second Review Conference to ensure the comprehensive nature of the convention. This is particularly important in respect to the challenges presented by the continued and rapid developments in science and technology (S&T) as well as perceived new utilities for 'non-lethal' CW and incapacitating biochemicals.

Another challenge for the full and effective implementation of the CWC lies in reducing the risk of chemical attacks by non-state actors and terrorists by improving organization, planning and security within the chemical industry. It was noted that efforts around terrorism must also be

balanced against costs in terms of transparency.

The final challenge discussed was the need for capacity building within the OPCW. It was argued that the OPCW should have greater capacity to develop new ideas, to have meetings on a wider range of trans-boundary topics, and to develop stronger links with non-governmental organizations (NGOs), think tanks and other organizations. It was noted that the BWC Implementation Support Unit (ISU) had met with the OPCW at the 9th Annual Meeting of National Authorities in The Hague, and it was suggested that mechanisms for greater overlap and learning exchange within the CWC and BWC would be mutually useful. Finally, it was observed that the tenure policy in place in the OPCW was creating a loss of institutional memory and that contracts with no definite expiration date, but which may be terminated at any time with six months notice and the payment of additional indemnity within the framework of the tenure system would improve the retention of high calibre staff.

Implementation of the Decisions on the Sixth BWC Review Conference

A report was given on the implementation of the decisions that came out of the Sixth BWC Review Conference. Contrary to earlier pessimism, the Sixth Review Conference demonstrated a renewed commitment of states parties to the BWC, with several positive outcomes being agreed and subsequently implemented, namely:

- Progress has been made in persuading new states to join the BWC and others have made commitments to join hence moving forward towards universalisation
- The ISU (Implementation Support Unit) has been created within the UN Office of Disarmament Affairs and has been active across the full breadth of its mandate. Further roles for the ISU were also suggested, such as providing analysis of the quality of national implementation legislation, producing a background document for an implementation check-list, creating an information resource for sharing NGO activity with States parties and establishing mechanisms for improving dialogue with the scientific community.
- Electronic reporting formats for the confidence-building measures (CBMs) have been implemented. 2007 has seen the largest number of CBM returns (61) since their inception.
- One in three States parties have provided details of a national point of contact, and this number is expected to double over the course of the next year.
- Progress has been made on national implementation. The National Implementation Database, maintained by the ISU, has increased in size by a third since it was created in 2003.

The 2007 Meeting of Experts had also been a success. It fostered information sharing between organizations and agencies, and demonstrated synergies both within and across delegations. It is hoped that the Meeting of States Parties will build on this success through focusing on three critical areas:

- Building synergy with other international organizations.
- Increasing inclusiveness of academic and research institutions as well as NGOs.
- Improving transparency through open communication and dialogue with industry.

Finally, it was noted that the intersessional meetings for 2008 will consider biosafety and biosecurity as well as education and awareness-raising. Addressing these issues will necessitate continued engagement with the scientific, medical, commercial and educational communities and a major challenge for next year will be for the Chair to integrate these resources into our collective efforts to minimising the possibility of the use of biological science and technology for malign purposes.

II: Moving Forward from the Sixth BWC Review Conference

The Intersessional Programme 2007-2010

Topics for 2007 – National implementation

Work on this agenda item began with a report on the ISU, its mandate and activities. The ISU provides administrative support to meetings as well as comprehensive implementation, universalization of the Convention and the exchange of CBMs. The ISU has created and maintained a website relating to the Convention which includes a restricted access area for states parties. The restricted section of the website provides telephone, facsimile and e-mail addresses for national points of contact, electronic copies of CBM submissions and information on the results of efforts to promote universalisation. Some of the CBM submissions are posted in the open part of the ISU website. The full report of the ISU meeting with the OPCW is also in the restricted area but this does not necessarily reflect a long-term policy to restrict access to such reports.

In regard to the intersessional process, it was stressed that the ISU was a tool for the states parties and, as such, does not set the agenda, but

CHEMICAL WEAPON STATUS 2005



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rather helps to implement it. In discussion, mechanisms for increasing the input of scientific expertise were discussed, such as informal channels of dialogue and formal advisory boards. Resource limitations of the ISU were also discussed in this context, but the small size of the ISU (3 staff) was also considered to be beneficial in enabling fast action.

The next presentation pointed out that there was a need for sustained action on national implementation, recognising the experience of the CWC. It was suggested that inputs to the National Implementation Database should be analysed on a regular basis by the ISU using a set of simple indicators thereby enabling the States Parties collectively to appreciate what progress had been achieved. Such indicators could be developed from those used by the OPCW. In discussion, some doubt was expressed over

the use of the OPCW model but it was argued that simple indicators would be a useful step forward in an ongoing process.

The following presentation focused on this theme of process in relation to national implementation. It was urged that national implementation should be understood as comprising three components – legislation, enforcement and monitoring. It was also suggested that a promotional element could be added to this understanding in terms of promoting national implementation in developing countries.

It was stressed that enforcement should not be limited to ‘big stick’ actions such as fines and prosecutions, but also ‘softer’ approaches such as requiring changes in research procedures, serving improvement notices or prohibition notices, and withdrawing consent for questionable research. It was also suggested

that monitoring of the life sciences should be understood as an ongoing day-to-day process consisting of overlapping methods for monitoring at multiple stages in the research and development (R&D) process.

It was pointed out that effective risk regulation regimes should comprise and combine all these elements – legislation, enforcement and monitoring – in order to be effective. In this regard, it was noted that the artificial disaggregation of topics for the intersessional meetings was potentially problematic as it limits opportunities to recognise the real linkages between the topics.

The final presentation examined national implementation efforts through a survey of states’ legislative provisions. The survey contained 96 criteria (based on but not limited by the UN Security Council Resolution 1540 matrix) covering definitions, offences and penalties, preparations

to commit offences, jurisdiction over offences, control lists, preventative measures to account for, secure and physically protect dangerous biological agents and toxins, and enforcement. 35 countries were surveyed from a wide geographical spread.

The results of the survey suggested that only a small number of countries have developed laws directly implementing the BWC. It was said that while most states surveyed appear capable of being reactive to events involving biological weapons (BW), most are not in a position to be proactive in preventing such events or regulating pathogens for legitimate and peaceful purposes. It was suggested that much work remains to be done in assisting states with filling the gaps in their legislative framework. It was suggested in discussion, however, that the selection criteria of the survey may have placed high expectations on the states legislature and that apparent gaps in the findings may in fact reflect irrelevancy to certain states rather than legislative inadequacy.

Another concern was expressed in terms of the implications of 'filling the gaps' by providing standardised legislation for national implementation. It was said that standardised legislation was problematic for several reasons:

- It is not sensitive to social/cultural elements
- It misses the process, which can be valuable in creating a sense of ownership of the problem
- Models encourage a 'rubber-stamping' mentality, which discourages adaptation and continued review

However, model legislation can be helpful in providing elements that can be incorporated into national legislation.

In conclusion, it was felt that legislation for national implementation is best understood as a ongoing and complex process, but that tools should be offered to states to help with the process by providing drafting assistance, check lists and other educational tools.

Topics for 2007 – International cooperation on BWC implementation

Work on this agenda-item addressed the promotion of assistance and international cooperation on BWC implementation from the perspective of the European Union (EU). It was noted that the EU has promoted its legal assistance project under the BWC Joint Action for more than one and half years but that only a few countries had formally applied for assistance.

It was argued that the problem is due in part to the absence of an international organization with the mandate to screen the implementation of the BWC, but also due to a lack of priority in some countries where WMD proliferation is not considered a national concern. It was suggested that states should be encouraged to recognise that non-proliferation and other objectives of domestic policy are not necessarily contradictory. In addition, it was pointed out that the EU is in the process of adopting new Joint Action in support of World Health Organization (WHO) activities in the area of laboratory biosafety and biosecurity under the overall objective of supporting the implementation of the BWC.

Given the institutional deficit that characterizes the organizational underpinning of the BWC, it was further suggested that the involvement of other international organizations, such as the WHO, should be encouraged to work with the ISU to

facilitate the process of providing assistance and international cooperation on BWC implementation.

Finally, it was also noted that the promotion of cooperation on BWC implementation not only provides opportunities for improving mechanisms for national implementation, it also has a role to play in generating regional dynamics of trust and transparency.

Topics for 2008 – Biosafety and biosecurity

Work on this topic began with a presentation examining the framing assumptions that have driven initiatives on the governance of dual-use research. Drawing on literature in the field of science and technology policy, it was argued that dual-use policy can be understood in terms of two models: technology transfer and technology convergence.

The traditional model regards technology primarily as an event – an artefact with a fixed function – and as such conceptualises the dual-use problem in terms of preventing the transfer of intrinsically dangerous research and technology to hostile states or non-state actors.

The alternative model focuses on technology as an innovation process that interacts and converges with wider social systems. Technology is therefore understood as more than simply an artefact and also includes the knowledge, concepts, experiments and intangibles of the process too. In this model the dual-use problem is framed in terms similar to the General Purpose Criterion, with control measures being directed at purposes rather than artefacts. It was argued that framing the dual-use problem in terms of technology convergence implies that a 'lighter touch' in policy design is needed to create cumulative webs of gover-

nance measures akin to the ‘web of prevention’ model.

The next presentation focused on the issues of biosafety and biosecurity from the perspective of the public health mandate of the WHO. The WHO has in place several proactive measures including the International Health Regulations (2005) and Biorisk Reduction, which provides guidance and training on the safe handling and control of disease agents. It was suggested that the guidelines provided by the WHO could translate into national standards for biosafety and biosecurity, though the variable health situation in different countries was also noted. It was also suggested that a mechanism should be in place, at both the medical and organizational level, to investigate the nature of outbreaks (natural or deliberate).

The final presentation examined some of the challenges facing the WHO Global Influenza Surveillance Network (GISN). It was argued that international sharing of viruses could be problematic in terms of national sovereignty and intellectual property rights. Furthermore, concern was expressed that GISN lacks transparency and equity.

Topics for 2008 – Oversight, education, awareness raising, and adoption and/or development of codes of conduct

Work on this agenda-item began with a discussion of the problem of education and awareness raising in the scientific community. Drawing on the results of a series of seminars that had been conducted with life scientists across several countries around the world, it was pointed out that there is little evidence of awareness among life scientists of the dual-use nature of their research. It was urged

that there is a need for awareness-raising in all states.

Several recommendations were made to raise awareness among life scientists. One suggestion was to encourage and foster a sense of responsibility among life scientists analogous to the situation with physicists and the anti-nuclear movement. However, concern was expressed that a top down approach by governments was needed to encourage life scientists to take ownership of the problem. For example, it was argued that while physicists have been embedded in military science for a long time, life scientists see the problem of BW as being external to them. Even a terrorist event using BW might not provide the desired ‘wake-up call’ since the event would not necessarily be perceived as having emerged from the scientific community

Other recommendations for awareness raising and fostering ownership of the problem were also discussed. The idea of an oath similar to the Hippocratic Oath in the medical profession was discussed, though it was felt that without consequences in the event of violation this would lack value. The need for control and government engagement was stressed. It was also suggested that registration of life scientists and a bottom-up approach based on mandatory educational modules might provide means to increase awareness and responsibility in the life sciences.

The next presentation continued the discussion of education and awareness raising from the perspective of the scientist. It was noted that the dual-use problem in the life sciences was complicated for several reasons:

- The dual-use dilemma is exacerbated by the fact that the threat of BW use can utilise material from natural origins and that detection, protection and treatment are based on the same science as hostile application.
- Despite the historical record of aggressive BW programs in the past, there remains a lack of awareness of the problem among life scientists.
- New dangers are constantly arising due to rapid advances in S&T where the results of the research and dual-use implications are often unpredictable.
- Transparency is hindered by the need for secrecy in defensive research.

It was argued that guidelines for the oversight of science do exist (for example, the Lemon-Relman Report) but that the problem is enforcing these guidelines. It was argued that bottom-up approaches are inadequate and that top-down mechanisms are necessary to force scientists to take responsibility. It was argued that ultimately the responsibility lies with the government to control what work is carried out.

Further arguments on the top-down versus bottom-up approach to awareness raising and responsibility in the life sciences were also made. It was suggested that no one single approach is adequate and that both processes (top-down oversight and bottom-up education) need to be in place. It was suggested that a better conceptualisation might be ‘outside-in’, ie, engaging scientists in the broader context of social ethical responsibility.

The next presentation considered the usefulness of codes of conduct for scientists. It was suggested that in

order to improve their effectiveness, some mechanism needed to be in place in order for scientists to identify and report transgressions. However, it was noted that this type of whistleblowing mechanism is also insufficient since it suggests that codes of conduct are a reactive rather than a proactive control measure. It was further argued that codes of conduct might be viewed as an 'easy option' for implementing a quasi-system of control which could get in the way of proper legal oversight.

Following from this theme, the next presentation offered a different conceptualisation of codes of conduct. It was argued that codes of conduct should be seen in three layers comprising:

- Guiding principles
- Codes developed by the scientific community
- Institutional or workplace codes

It was argued that all institutions conducting dual-use research should have a workplace code. Elements of the workplace code should include an awareness of the BWC, UN Security Council resolution 1540 (2004) and national legislation, as well as a personal commitment by scientists to report concerns in-house. It was also suggested that the recommendations for codes of conduct for chemists being developed by the International Union of Pure and Applied Chemistry (IUPAC) could offer useful parallels and convergences for developing codes of conduct for life scientists.

The final presentation in this session examined the role a national regulatory commission could play in establishing regulations and codes of conduct to ensure compliance with the BWC. It was argued that a national regulatory commission

could also more efficiently coordinate and distribute funds for biodefence research. However, it was noted that increasing bureaucracy could be problematic.

Enhancing Transparency of Programmes to Counter Deliberate Outbreaks of Disease

Work on this topic began with a suggestion that transparency should be measured in terms of the willingness of facilities to release records of its activities, such as funding proposals, project reports, research protocols, safety documents, accident records, equipment logs and contracts. However, in discussion it was noted that, while this level of transparency might be deemed desirable, adequate transparency was achievable without this level of detail.

The next presentation suggested that transparency could be improved by extending the use of CBMs to cover any programs aimed at protecting against the deliberate use of biological agents hence including both biodefence programs and programs aimed at protecting against bioterrorism. It was also urged that the CBMs should include questions on codes of conduct for scientist in such programs and mechanisms for national oversight. However, it was felt that this measure would be insufficient to improve transparency given the limited participation of state parties in the CBM mechanism.

The following presentation examined the difficulties of enhancing transparency. It was noted that despite general agreement with governments and civil society that transparency in programmes to counter deliberate outbreaks is both an appropriate and important measure for effective control of BW,

there is little consensus on how transparency should be achieved. It was suggested that clearer definitions about the goals and objects of transparency are necessary.

It was said that the growing secretiveness surrounding biodefence activities presents a problem for transparency. Furthermore, legitimate concerns about the potential hostile exploitation of biotechnology, and the realisation of the growing economic and strategic importance of biotechnology, generate incentives for states to be less transparent in order to protect national security and commercial interests. However, it was suggested that this type of hedging in regard to biodefence runs contrary to the logic of transparency. The aim of transparency is not to generate vulnerabilities but to help states constrain their own biodefence activities in the broader efforts against the hostile exploitation of biotechnology.

The final presentation given in this session addressed the United Nations Secretary-General's working group on the investigation on alleged use of chemical or biological weapons. It was reported that the first meeting of this working group had enabled a valuable exchange of information to take place. Further efforts are being developed.

Confidence-Building Measures

Work here began with an EU perspective on the future of CBMs. In 2006 the EU adopted an action plan to ensure that all member states of the EU fulfilled their obligations to file a CBM return each year. The EU is now in a position to display full participation in the CBM process. However, it was stressed that this success was only achieved as a result of an ongoing commitment to

improve measures and mechanisms for CBMs and that pressure on local administrations needed to be maintained.

Questions were raised over the quality of the content of the CBMs since there is no assessment mechanism but it was said that while the returns contain variable information the average level of the content has not changed over time. Questions were also raised about the value of CBMs given that public access to CBM returns had been so heavily curtailed by the Sixth Review Conference and given, also, their limited participation by states parties to the BWC as a whole. However, it was noted that participation is growing and, furthermore, that the countries that are participating are major actors in the area of the life sciences.

The next presentation addressed the issue of consistency and completeness in CBM returns through a comparative analysis of data provided in the CBMs and open source data. The results of the analysis demonstrated that disease data is often not declared and, if it is, it is frequently found to be inaccurate and incomplete. It was noted that comparing data submitted in the CBMs with open source information is problematic since an unusual outbreak as defined in the CBMs is not necessarily an outbreak relevant to Article I of the BWC.

It was recommended that the quality of the CBM returns could be improved by removing ambiguity over declarations (for example, distinguishing between non-events, information not being collected on events, or events not being reported). It was further suggested that declarations on events of biosecurity concern, such as accidents in biodefence facilities and incidents with

weaponised biological material, should also be submitted under a new CBM form in the interests of promoting transparency and a clearer global picture of biosecurity-related events.

The final presentation discussed an NGO-provided CBM reader – a summary of the publicly available CBM data submitted in 2006 and 2007 – and its future role. In discussion, it was recommended that CBM data should be analysed in a constructive way to help states parties since critical analyses could deter them from making their declaration open access. On the other hand, it was also felt that state parties should be able to stand up to scrutiny. The need to be able to distinguish between good faith efforts and deliberate omissions was stressed.

Promotion of Universalization

On this topic, the workshop examined bottom-up (working with civil society constituencies) and top-down (working from government to government) approaches to encouraging universalisation of the BWC based on a series of regional seminars. It was observed that bottom-up approaches are useful for raising awareness, building linkages to participants' professional/personal background and building knowledge. However, it was also found that ownership of the issue was not taken up automatically. The top-down approach was found to be useful for raising awareness but created limited capacity building. Limited stakeholder participation in the BWC was also observed among government agencies of non-states-parties.

It was observed that in a seminar experiment in which civil society and government were both targeted,

active interaction was generated. It was suggested that interaction across the interface of government and civil society might be the source of claiming ownership. It was noted that interaction appeared to give focus and purpose to the meetings, and translated abstract goals into the need for concrete action. It was urged that promoting stakeholdership in government, parliament and civil society should be the primary goal for achieving universalisation.

Finally, the lack of saliency of Article X of the BWC among non-states-parties was noted. It was observed that the regulatory rather than promotional components of the BWC tended to be emphasised. It was also said that the needs and concerns of non-states-parties focus less on international cooperation, exchanges and technology transfer, etc, and more on basic information, concrete indicators of legal, economic, financial and human resource implications of joining the treaty and general capacity building of government agencies.

Future Work

The workshop concluded with some discussion on the future role of the Pugwash Study Group. It was suggested that if the Workshop agenda was limited to that of the intersessional process this might inhibit consideration of the bigger picture and in particular brainstorming about possible future developments to strengthen the Convention. It was observed that this Workshop was but a year after the Sixth Review Conference and that future Workshops would naturally be looking ahead towards the Seventh Review Conference in 2011 and beyond.

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**Friedrich Ebert Stiftung Federation for Peace and Conciliation
Russian Political Science Association
*Islam, Conflicts, Peace Mediation***

Kazan, Tatarstan, Russia, 27–29 January 2008

Report

by Mikhail Lebedev

An international conference on “Islam, Conflicts and Peace-Building” took place from January 28-29, 2008 in Kazan, the capital of the republic of Tatarstan, organized by International Pugwash and the Russian Association of Political Science, together with the Federation for Peace and Conciliation and the Russian Pugwash movement of scientists. Participants came from twelve countries, including Russia, Egypt, Iran, Oman, Pakistan, Afghanistan, Azerbaijan, Kyrgyzstan, Tajikistan, Uzbekistan, Turkey, and Germany.

As was noted on the opening day of the conference by Pugwash Council member and President of the Russian Association of Political Science, Alexander Nikitin, the conference was planned as an international dialogue, dealing with a study of the role of Islam in the regulation of conflicts, and it was aimed at providing a more realistic understanding of the role of Islamic factor in policy.

The conference was opened by the rector of the Academy of State and Municipal Administration under the jurisdiction of the President of the Republic of Tatarstan, Andrey Ershov and by state adviser to the

President of the Republic of Tatarstan, Rafael Khakimov. In his speech R. Khakimov emphasized the special experience of the republic of Tatarstan in its search for a model of peaceful co-existence of civilizations and religions. During its evolution, Tatarstan has developed a unique ethnic policy – subsequently named with a light touch by Harvard academics, “the model of Tatarstan”—based on a balance of interests, mutual understanding, and cooperation between the leaders of the various religions found in Tatarstan. According to R. Khakimov, the most important component of this model is co-existence and tolerance—for example, as seen in the proximity of the mosque and orthodox cathedral in the Kazan’ Kremlin.

The experience of Tatarstan was described as positive by the Secretary

General of Pugwash, Paolo Cotta-Ramusino, who called on the former republics of the USSR to use this experience in mediating conflicts. After acknowledging that all religions are essentially peaceful, Prof. Cotta-Ramusino pointed to the problem of the “the complexities of self-identification”, where belonging to one religion becomes part of one’s national self-identification, which in turn hampers the process of determining the nature of a conflict.

One participant noted the problems of correlation between religion and national factors, where religious attitudes often determine the behavior of nations. In this view, contemporary conflict is a rebirth, or “re-incarnation” of an old national liberation movement, marked now in new terms. Religious leaders are brought to the forefront by public authorities



to legitimize their use of power, but this “is a misuse of religion.”

Participants from three Central-Asian republics—Kyrgyzstan, Tajikistan, Uzbekistan—took an especially active part in the discussion. One conclusion drawn from the discussion was a thesis about the process of Islamization of the Central-Asian countries. In Kyrgyzstan and Tajikistan there are already more than two and four thousand mosques, respectively. The number of believers grows. There exists a system called *daavat* (a call to Islam), and Islam is becoming a political factor. However, these countries are not prepared for these developments. In these states it is necessary to formulate clear policy in the religious aspect, to determine a format of interaction between Islam and politics, and namely to integrate Islam in policy-making in accordance with national interests. A specific compromise between state and religion needs to be achieved. In Tajikistan, agreement was reached to register the Islamic party of renaissance. However, the state is not prepared to inject Islam into the education system. The authorities of Tajikistan have forbidden Islamic clothing in schools, and debates are held about *khidzhaba*. An important factor of stabilization of relations between state and religion in Central-Asian countries is social and economic progress; the absence of such progress will lead to dissatisfaction among the population, especially in poor rural areas, where a majority of believers live, and these will strengthen the positions of Islamic opposition. Poor religious culture of local believers remains a serious problem.

One of the factors of the situation in Central Asia, according to local experts, is the attempt by Iran to popularize the Moslem faith. Commenting on the situation in Iran, one participant noted that policy solutions in Iran are frequently made on the basis of rational calculations and national interests of the country. For example, issues relating to Iranian maritime rights and regional economic integration are resolved through collaborative efforts with countries in the Persian Gulf region. For example, during his visit to Qatar, President M. Ahmadinejad pointed to twelve factors which facilitate this type of collaboration. Among them he mentioned such issues as simplifying the process of granting visas, the creation of a northern transport corridor, etc. In this sense, religious factors were not predominant in relations between Iran and its neighbors; in fact, Iran is pursuing a pragmatic policy, aimed at the cessation of its isolation.

Regarding the role of religion in Azerbaijan, a neighbor of Iran, it was noted that there are three political orientations: pro-Islamic (pro-Iranian), pro-Russian, and pro-Western (pro-Turkish, pro-European, pro-Israeli). At the beginning of the 21st century in Azerbaijan, a disappointment concerning western values is observed. After 2003, when the US actually supported the falsification of presidential elections in Azerbaijan, anti-Western sentiments started growing, and the Islamic factor is now playing an increasingly significant role. At the same time *wahhabism*, which unites people here with its tenets of striving for national unity and a pure Islam, has emerged

in Azerbaijan. Today the calls for association in Azerbaijan under the flags of Islam, finds approval in population. At the same time, the strengthening of pro-Islamic orientation inside the country has not entailed a significant improvement of relations with Iran. Opinion polls show that the population of Azerbaijan is against any possible military action by the US against Iran, but, at the same time, the general attitude of Azerbaijani toward Iran remains poor. In the country there are strong pro-Israeli sentiments, concerned with the support by Israel of Azerbaijan in the US, in contrast to the efforts of the Armenian lobby. The attitude of Azerbaijan towards international structures is determined through the prism of Karabach (“whoever helps to return Karabach to Azerbaijan, we enter this organization”). Obviously, this explains the appearance of NATO bases in Azerbaijan, and also “radar policy”, established against Iran and Russia.

In course of the discussion an inter-religious dialogue developed. The representative of Russian Orthodox Church, Alexander Makarov, remarked on the similarity of the general values of Islam and Orthodoxy—concept of God, sin, moral values. One issue for both religions is that of pressure from the western liberal tradition. What is needed are more inter-faith dialogues, such as the initiation of the Christian-Moslem dialogue that was established in 1997.

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Pugwash Workshop on Intra-Kashmir Economic Cooperation *Integrating Jammu and Kashmir Within the Indo-Pak Peace Process*

Colombo, Sri Lanka, 15–16 March 2008

Report

By Moeed Yusuf

The following recommendations constitute a holistic plan for cross-LoC collaboration in terms of human and economic exchange. A number of avenues are explored, each of which can potentially bring gains in its own right. However, ideally, the sector-specific proposals need to be tackled within an overarching framework. As shall be clear shortly, a number of aspects of the proposed plan are inter-linked and would either lose their utility or would be impossible to implement without tackling other concerns simultaneously.

Kashmir Conflict and its Impact

The dispute over the princely state of Jammu and Kashmir continues to prevent Pakistan and India from realizing the true benefits of economic integration between geographically contiguous states. Indeed, the brave move from Pakistani and Indian leaders to pursue a normalization course on Kashmir has undermined vested interests to some extent and has already provided a real opening for peace in Jammu and Kashmir. However, the initial momentum is subsiding as residents on both sides of the Line of Control (LoC) have not experienced the kind of beneficial interaction they had initially expected.

The immense losses that the Kashmir conflict has caused for Pakistan and India- and thus the benefits installed in the normalization process for both sides- cannot be exaggerated. Pakistan has foregone economic growth of 2.5-3 percent annually for the entire sixty year period. The country's Gross Product today would have been 3.4-4.4 times higher, the GDP would have been greater by a factor of 3.5 and the per capita income would have approximated \$ 2,200 had it not born the costs of the Kashmir conflict. For India, the costs incurred should be obvious from the fact that till the onslaught of the Kashmiri insurgency, the Central government had to loan 80 percent of Indian Kashmir's budget instead of the 20 percent that it contributed towards other states. Since the insurgency began however, the state's entire budget has been born by the government in New Delhi. The direct costs of fighting the insurgency which approximate \$ xx are in addition to this.

Were the following proposed plan for increased collaboration across the LoC executed in its entirety, over a ten-year period, an additional \$ 40 million can be generated as income for the two parts of Kashmir. This would correspond to a 9.5 percent increase in the state's GSDP. Moreover, the per capita income would rise to \$ 745 which would be comparable to Pakistan and India's projected level over the next decade.

The Proposal

Human Exchanges

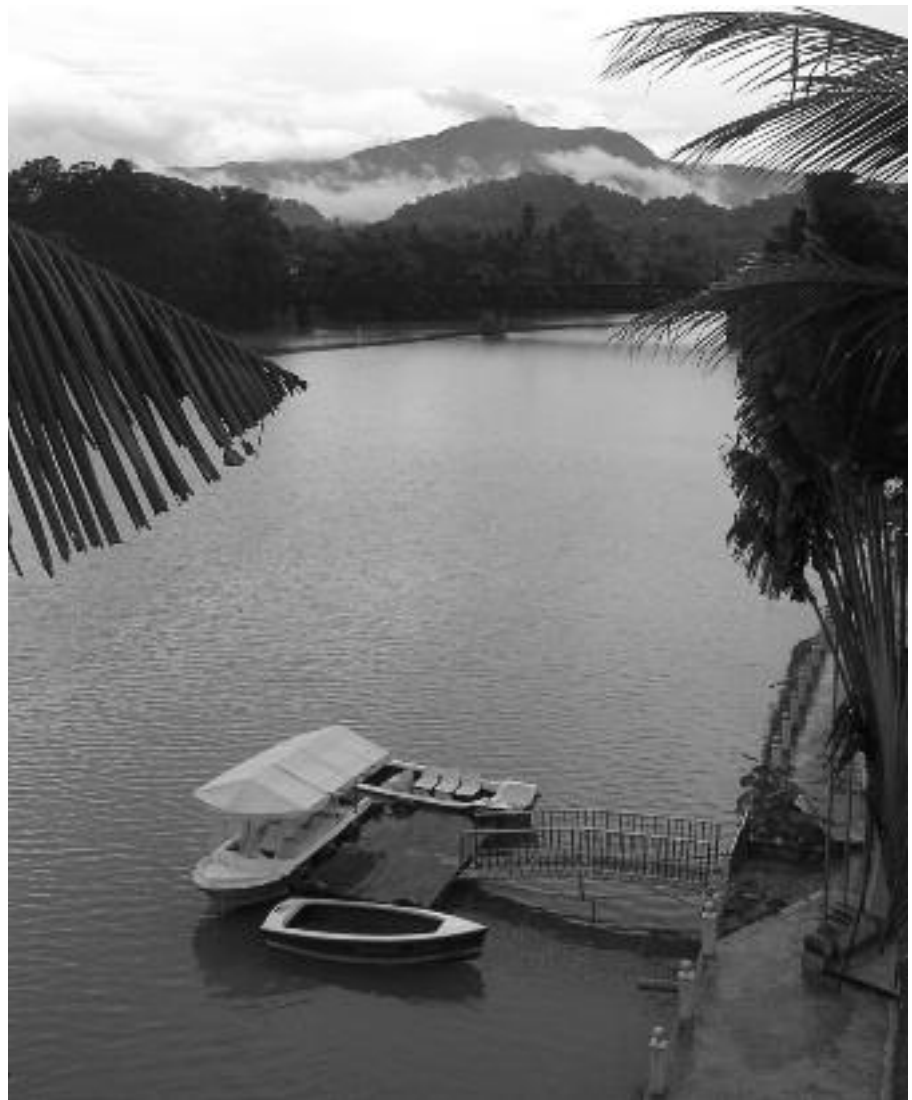
The most urgent need is to enhance human interaction across the LoC. Success in such an endeavor would underpin the entire collaboration framework. Indeed, this was the realization that led Pakistani and Indian leaders to order the initiation of the Muzaffarabad-Sri Nagar bus service in 2005. The service allowed divided families to connect after over five decades of complete isolation. Notwithstanding, this service was only an initial step that was never likely to have more than a marginal impact given the stringent nature of the travel regulations. While those who stand to gain from a slow down of the normalization process in Kashmir are already pointing to the sharp decline in peoples' interest to travel on the bus, the reality is that people remain deeply interested in the freedom of travel. It is only the narrow focus on divided families as well as the excessive procedural hurdles and fear of reprisal from intelligence outfits that have kept people from making better use of the facility.

To realize the full potential of human exchange, we suggest expanding the scope of the bus service to include all Kashmiri residents from both parts and streamlining the travel documentation requirements. This would allow not only private citizens but also the

community based organizations, de politicized community leaders, social workers, business community members, and religious and youth organizations to interact regularly. Permit procedures need to be simplified to allow speedy approval of applications. One option could be to allow the Government of Azad Jammu Kashmir (AJK) on the Pakistani side and the Jammu and Kashmir state government on the Indian side to administer the permit issuing process. A ceiling limit on the time for processing of permits could also be instituted to prompt administrations to hasten the bureaucratic processes. Visa issuing centers could be opened on the five LoC “meeting points” already in place to facilitate applicants. Moreover, loosening of the permit regime to allow for multiple entry permits must be considered. A group visa policy for tourists and traders should also be initiated; such facilities are essential as they underpin the economic development and commercial exchange plan we have presented.

A subsequent step would be to allow Kashmiris from the Indian side to visit Pakistan and vice versa, as well as for Pakistanis and Indians to visit the part of the Jammu Kashmir state across the LoC. For this purpose, a dual travel documentation requirement could side-step the bureaucratic hurdles. A travel permit should suffice for Kashmiris to travel within the state but passports should be required to enter Pakistani and Indian territory beyond Jammu and Kashmir. For Pakistanis and Indians not belonging to Kashmir however, passports would be required to cross the LoC.

Political interaction could provide the overarching framework for human interaction. The visa free



regime for Pakistan and Indian Parliamentarians should be extended to the AJK legislature on the Pakistani side and the Jammu and Kashmir state assembly on the Indian side. A joint Indo-Pak parliamentary committee should be mandated to meet periodically to identify and propose avenues for cooperation in areas of common interest. Corresponding working groups at the local government levels should also be set up to work out modalities for various initiatives.

We see intellectual interaction as a specific subset within the context of human interaction. This is so since collaboration between university

faculties and students in Kashmir could have a significant multiplier effect in terms of generating new ideas for cooperation in addition to altering mindsets towards the ‘other’ among the upcoming generation. Student exchanges are already taking place between Pakistan and India. Even the University of Jammu is in the process of signing MoUs for student exchanges with the Lahore University of Management Sciences in Lahore. The precedent thus exists for such arrangements to be reached between the University of Jammu and/or the planned Indian Institute of Technology in Indian Kashmir and



Shahid Javid Burki, Moeed Yusuf, Paolo Cotta-Ramusino.

the University of Azad Jammu Kashmir across the LoC.

There is tremendous potential for joint research projects and interactive teaching on subjects that are neutral to sensitivities of both sides. The AJK University has initiated a Kashmir Studies Program that focuses on Kashmir's economy, art, culture, disaster management, post-conflict resolution and other such cross-cutting aspects that are pertinent to students and faculty throughout the Kashmiri state. This program could be used as a starting point for educational collaboration and be expanded over time. A semester-long deputation for faculty could be instituted to allow them to teach in the Kashmir Studies Program jointly. As for students, a facility similar to the study abroad programs instituted in western universities could allow students to spend one-year of their education in institutions across the LoC with credits being transferred to their parent institutions. Of course, such arrangements would only be viable in programs offered by universities on both sides.

Once the dividends of initial intellectual exchanges become evident,

the governments of Pakistan and India could consider establishing a joint university with multiple campuses spanning both sides of the LoC. The framework would be similar to that of the proposed SAARC University. This would allow cross-registration for students and provide the faculty an option to teach courses of their choosing at any of the campuses.

In addition to collaboration between established educational institutions, human capacity building will be required across sectors of economic interest. For this purpose, not only would both sides need to enhance their vocational training capacity but would also need to develop synergies in training especially in sectors that necessitate joint operations. Both sides could consider setting up joint vocational training institutes on the LoC or share master trainers to standardize training quality on both sides. Key sectors where such collaboration is envisioned include the tourism industry that will require much enhanced capacity for tour operators, travel group managers, hotel staff, tourist guides, and the like. IT specialists will

be required to modernize the two economies. Moreover, processing industries such as high value added furniture would also gain from vocational training.

The media has been a potent force in bringing vibrancy to the Pakistani civil society. It has allowed communities a voice and participatory mechanism despite lack of genuine democracy in the country. Similar benefits can be accrued in Jammu and Kashmir should media freedom be granted. Both governments should allow a select number of TV and radio channels to be aired on both sides of the LoC. For their part, the Indian and Pakistani media should encourage joint current affairs TV and radio shows. The programs could be hosted by channels viewable in Kashmir. The shows could be hosted alternatively from Muzaffarabad and Sir Nagar with guests from both sides of the LoC; even Pakistani or Indian experts on the subject could be invited. Such an initiative has already been a great success in the Israel-Palestine context. To maximize gains, Pakistani and Indian TV and radio channels can be persuaded to air a "Kashmir series" that would allow at least one or two programs a month to focus solely on various aspects of the Kashmir problem.

Pakistan must also extend the current proposal of legalizing Indian films within Pakistan to AJK and the Northern areas. The entertainment industry in Pakistan/ Pakistani Kashmir should be allowed to hold formal viewings of films and dramas produced in India and vice versa. Again, much like intellectual exchanges, a multiplier effect would be evident as producers would see this as an opportunity to develop features focusing on the positive aspects of peace and collaboration in

Kashmir. This is sure to impact mind-sets positively on both sides over the long run.

Economic Collaboration

Despite the fact that discussions about potential for economic cooperation have been part of the agenda throughout the Kashmiri peace process, there is still little concrete information on the precise complementarities between the two parts of the Jammu Kashmir state. While we do point to the sectors of interest and possible initiatives, the first order of the day should be to generate accurate and specific information on the qualitative and quantitative gains installed for both sides. Governments in Islamabad and New Delhi should coordinate joint survey/ information gathering exercise on all potential avenues of cooperation. This arrangement will have to be instituted immediately and is distinct from the parliamentary and local government interaction proposed for Kashmiri elected representatives above. The urgency for fact finding is borne out of the obvious compulsion to base any formal arrangements to cooperate on solid information regarding the current state of affairs. This will also help Islamabad, New Delhi, Muzaffarabad, and Sri Nagar to generate political support for joint initiatives.

Trade in goods

In order to maximize gains from trade in goods, we propose a sub-regional arrangement within the SAFTA auspices but one that will not only include trade in goods but also protocols for trade in services and joint ventures. Under the sub-regional arrangement, the entire state of Jammu and Kashmir could be accorded the status of a quasi-state

and granted rights equivalent to those of the LDCs in South Asia. Both Pakistan and India would allow duty free access to Kashmiri goods from the opposite side of the LoC. This would necessitate an agreement on the Rules of Origin. However, neither side should hesitate to implement such a regime since Jammu Kashmir does not have the kind of production potential that could flood Pakistani and Indian markets.

We recognize that a sub-regional arrangement may only be possible over the long-run. As a first step- to optimize current trade potential- the foremost requirement is to remove all tariff and para-tariff barriers to inter-Kashmir trade. The preferential arrangement would allow for cross-LoC duty free access of raw materials and value added goods. No sensitive lists ought to be prepared, thus allowing all Kashmiri products to be traded free of duties.

Both sides must explore the option of establishing border markets at designated points to cater to demand for residents across the LoC and tourists alike. Three obvious locations could be the Poonch-Rawala Kot route, Uri, and Chakothi. Border markets should serve as the center of commerce activity where people from across the LoC are allowed to visit, using officially stipulated travel documents. Not only could such border markets act as retail hubs, but they could also provide opportunities for traders on both sides, be they farmers, craftsmen or producers of other value added products, to meet and conclude future business deals. Moreover, were a quota for a certain proportion of rural producers (especially for agricultural producers) to set up retail stations in the markets would ensure easier market access for the rural poor. Arguably, enhanced

interaction could lead producers on both sides to gauge consumer preferences and specialize products, especially crafts and value added goods.

Extremely beneficial for both sides would be an arrangement where Pakistani Kashmir serves as a transit route for Indian Kashmiri goods destined for the rest of the world. A similar arrangement could be instituted for imports coming into Indian Kashmir. The framework could replicate the Afghan Transit Trade (ATT) facility that allows Afghan goods to travel to India via Pakistan and vice versa. Since none of these items will be destined for the Pakistan market, sensitive issues such as Rules of Origin, authenticity of the documents, and the like would not arise. Pakistan would charge royalties in return for providing the transit facility.

The transit arrangement has great scope as the pre-partition transport routes between Jammu and Sialkot and Sri Nagar and Muzaffarabad remain much more economical for traders in the Indian state of Jammu and Kashmir even today. For items such as woolen shawls, wooden artifacts, and animal skins, Lahore's new airport can provide feeder services for onward shipment to the rest of the world. For goods more suited to sea-shipment, the much improved facilities of the Port Bin Qasim and Karachi Port Trust are more attractive propositions than Mumbai for traders on the Indian side of the LoC. Finally, if Pakistan's plan to upgrade the Karakoram Highway does materialize in the medium term, it could provide a convoluted, yet economical route for Kashmiri goods to find their way into China and Central Asia.

While the transit facility could be operationalized utilizing the current road links available across the LoC

(GoP has already expressed interest in starting a truck service between Muzaffarabad and Sri Nagar), its true potential would only be realized after the transport links have been upgraded. A number of new transport links have already been identified as key to increasing commercial exchange. These include Jammu-Sialkot, Turtuk-Khapulu, Chamb Jurian-Mirpur, Gurez-Astore-Gilgit, Tithwal-Chilhan, and Nowshera-Mirpur-Kotli, and Skardu-Kargil. The revival of the traditional rail link between Jammu and Sialkot and a link between Sri Nagar and Muzaffarabad through rail, continuing onwards to Abbotabad and Rawal Pindi are equally important.

Joint Collaboration Hydroelectricity

Perhaps the greatest potential for the state of Jammu and Kashmir is with regard to generation of hydroelectricity. The Indus Water Treaty (IWT) delineated the use of water from rivers flowing through Kashmir but ended up leaving the electricity generation potential of the state underutilized. The Treaty need not be altered- only reinterpreted- to allow for joint hydroelectric production. An integrated power grid which is based on an extension of the current distribution systems on both sides of the LoC is permissible under the IWT and could provide 5,000-7,500 megawatts of readily utilizable power. A less ambitious plan could be to jointly develop a power generation projection project around the LoC.

The hydroelectricity generation plan would automatically bring experts from both sides of the LoC together to devise the mechanism for cooperation. This could be best achieved under a sub-regional agreement, which is also necessary as

surplus electricity would be exported to India, Pakistan and even other Central Asian states and would thus necessitate a revenue sharing arrangement. A sub-regional arrangement specific to energy could be framed or else, the overarching sub-regional agreement mentioned earlier could provision for such collaboration.

Tourism

The beauty contained within the state of Jammu and Kashmir makes it naturally suited for a thriving tourism industry. The state used to attract a large number of tourists prior to partition. Indian Kashmir remained a popular tourist spot until the insurgency broke out in 1989. The first order of the day is for both sides to determine the accurate potential in terms of volume, attractive sites, and infrastructure needs for the development of this industry. There is need to set up a joint consultative mechanism with officials from tourism departments and prominent members of the tourism industry from both sides. The group would be tasked to identify concrete measures to enhance the tourism potential across the LoC.

The most obvious activities that could make Kashmir an attractive tourist destination includes mountaineering, skiing resorts, and water sports. In addition, if Kashmir's history could be captured through museums, it is sure to interest Chinese and other East Asian nations that trace back their roots to this part of the world. With direct road links with China and reports indicating that as many as 100 million Chinese tourists may be interested in joining the global tourist industry as clients, Kashmir could benefit immensely. Two rather innovative but concrete proposals are already on the table

and will have tremendous spin-off effects. One is premised on the visible inclination from both Pakistan and India to demilitarize the Siachen glacier. The Siachen and Boloto glaciers could be converted into a scientific park. The scientific merit for this project has already been established. A similar initiative could be taken in the area covering the Central Karakoram National Park. A joint management committee with relevant public and private stakeholders from both sides could manage these facilities under IUCN guidelines.

Once the industry takes off, the joint consultative group could act as the Tourism Development Board that would coordinate tourism activities. The industry should be privately managed with the tourism board authorizing registered privately owned travel facilitation companies to have all formalities cleared for their clients. Logistically, inter-Kashmir tourism could be conducted by offering joint travel packages that provision for visits to sites across the LoC utilizing the Muzaffarabad-Sri Nagar road link. For all foreign tourists, national passports should suffice for cross-LoC travel. Kashmiris could utilize facilities by virtue of their travel permits.

Of course, physical infrastructure in terms of five star hotels, an expanded road network, communication systems, banking facilities, and health facilities would all have to meet international standards for the tourism industry to generate the expected dividends. Equally important is the need to have trained human resources who could manage such a specialized industry. In this regard, India could gain from its existing human capacity building track record to set up hotel management institutes in Sri Nagar, where

Kashmiris from both sides could be trained. As already mentioned, other more specific vocational training institutes for personnel to be involved in various capacities in the industry could be set-up and utilized by residents of both sides.

Forest and Environment

Both sides of Kashmir are rich in forests, albeit ones that have been degraded severely over the years. Consequently, the furniture industry in Kashmir, especially Walnut furniture that was once a well-known product of the state, has disappeared. In order to revive the furniture industry, joint forest management (JFM) experiences on both sides need to be studied. While measures to improve forest cover will be largely unilateral, a consultative group could share best practices on forest management. Moreover, processing industry needs to be revitalized at the behest of the private sector corporations. Private investors should be allowed to invest in forest resources and furniture production on both sides of the LoC. In order for both sides to accrue comparable benefits however, Indian and Pakistani parts of Kashmir should supply similar volumes of wood to processing units.

Kashmir's waterways intrinsically link Pakistan and India. All three major rivers of Pakistan, the Indus, Jhelum and Chenab flow through Jammu Kashmir. The fact that watersheds lie across the LOC implies that Pakistan is directly affected by the state of rivers in Indian Kashmir. A joint group across the LoC could be set up to exchange data on water flows and assess water quality. Constant gauging of the water quality could also allow the group to determine the optimal irrigation practices that would ensure sustain-



able use of water resources by agricultural communities on both sides of the LoC. Moreover, a periodic joint environmental clean-up exercise could also be mandated. However, since this initiative may require buffering water flows, a political consensus on such collaboration would have to be reached in advance.

Information Technology

The role of the IT industry on both sides is multifaceted. The entire economy ought to move towards automation in order to ensure efficiency in trade deals as well as to promote investor friendliness. The demand for IT services on both sides of the LoC could be expected to increase tremendously once Kashmir transforms into a modern economy and banking, e-commerce, and e-governance practices are instituted. Moreover, the industry could become the mainstay of Jammu Kashmir's marketing and information projection strategy.

Given the above, there is a need for Pakistani Kashmir to accelerate IT development in the state. In order

to develop human resource capacity for long term sustainability, Indian IT professionals could be requested to teach at small IT training centers that could be set up in Pakistani Kashmir. Moreover, IT students from Pakistani Kashmir could study in the proposed Indian technology institute in Indian Kashmir. The Indian side could also help their Pakistani counterparts in setting up software technology parks and other such IT ventures. While the principal beneficiary of which cooperation may seem to be the Pakistani Kashmir, the fact is that without enhanced capacity in this area, much of the other collaborative efforts may fall short of realizing their benefits. Indian Kashmir therefore has an interest in uplifting the IT capacity across the LoC.

Efficient communication links underpin any modern economy. There is virtually no possibility of integration between the two parts of the state unless telecommunication and internet facilities parallel those in Pakistan and India. Currently, people on the Indian side of Jammu and Kashmir have no telephone connec-



A. Heather Coyne and Moeed Yusuf.

tions with residents across the LoC. Since cellular and satellite-linked communications are already accessible (this undermines the security based argument for restricting communications), land-line communication should also be allowed. This is essential if attractive cross-LoC tourism and trade regimes are to be instituted.

Disaster Management

The 2005 earthquake was a stark reminder of the effects the artificial divide between the people of Jammu and Kashmir could have in crisis situations. People from both sides of the LoC were in close proximity to each other but could not cross over to help their brethren. While such an exchange was allowed eventually, it was much delayed and largely symbolic.

Since Jammu and Kashmir is projected to be home to active seismic activity for the foreseeable future, both governments should consider setting up a joint disaster planning group which can work out a common protocol to interact and cooperate in case of disasters. Specifically, the plan could provision for disaster response centers close to the LoC as well as a

provision for people to assist across the LoC should normal food supplies be cut off for either side or if extensive loss of human life seems imminent. The group could specify the kind of cooperation in terms of number of people or type of machinery that could be exchanged should a natural disaster occur.

The civil society could take the lead role in instituting community based training programs seeking to integrate traditional coping mechanisms with modern techniques for disaster mitigations. It could even liaison with relevant government functionaries to ensure the necessary disaster prevention infrastructure is available to each community in the region. Again, Indian and Pakistani governments would have to allow civil society organizations to coordinate on both sides of the LoC for this purpose. Perhaps, a small number of civil society outfits could be allowed to maintain presence in Indian and Pakistani Kashmir.

Financing the Plan

The entire plan is likely to cost between \$20-35 billion. Therefore, local resources will be inadequate. Both governments would thus have

to encourage foreign investment in its state of Jammu and Kashmir. Realistically, the plan would have to be run at the behest of the IFIs and bilateral donors with a heterogeneous mix of local investors complementing international lending.

To begin with, a sector-by-sector financial plan should be developed with the help of technical experts dealing with various facets of the program. Next, feasibilities for various identified projects could be carried out. Subsequently, the plan could be floated to seek investor interest. Simultaneously, the World Bank's Foreign Investment Advisory Service could also be requested to conduct a detailed investment climate survey of the region. In terms of IFI lending, the World Bank and ADB should be approached to finance the plan through special low-interest loans typical of post conflict economies. This would have to be done though the governments of India and Pakistan who would underwrite the loans. Each agency could opt for projects that fall within its priority areas. For example, ADB's focus on infrastructure and water and sanitation would lure it to such initiatives.

The IFIs also have a role in planning with the concerned governments to channel private investment into the State. Granted, Kashmir's troubled law and order situation on the Indian side and relative lack of development on both sides implies that the terms of private investment would have to be overly attractive. Notwithstanding, the level of private investment in large part will depend on the extent to which the public sector agrees to give up its monopolies. The Kashmiri diaspora could prove to be a major resource bank. Expatriate investors could be targeted to involve

themselves in sectors of their interest. Another option would be to float international bonds, say the “Kashmir bonds” to raise resources

The domestic banks will also have a role to play in terms of supporting small-scale investment. Financial competition within banks and others lenders such as micro-credit institutions therefore needs to be increased. Commercial banks should be allowed to open their branches on both sides of Kashmir. The Bank of Jammu is already interested in opening branches in Pakistan. If the governments signaled their interest and provisioned for Pakistani, Indian, and especially Kashmiri banks to enhance their presence on both sides of the LoC, all investment and trade transactions could be settled electron-

ically. This way, both governments would also be able to track transmission of all funds, thus allaying any security concerns that may have.

Seeking a transformation in Jammu and Kashmir's economy

The ultimate objective of the economic development plan would be to create a win-win whereby the public sector could withdraw gradually, thus reducing its burden while inviting private sector competition with attendant efficiency gains.

Industrial production and services industries like tourism and IT must be driven by private sector involvement to ensure efficiency. Private sector involvement would also be key in Kashmir's image projection and industrial marketing around the

world. There is substantial role for the private sector in the forest sector. Civil society involvement in the services and social sectors would also be essential. Consequently, the public sector monopolies would have to give way, with the sector's role being limited to one of a loose regulator. The most important function for the public sector would be to guarantee an investor friendly climate with clearly defined regulatory and legal frameworks, facilitate business processes by reducing bureaucratic red-tape, enhance transparency and accountability in official mechanisms, and most importantly provide clear boundaries for permissible interaction within which governments would refrain from invoking security concerns.

Participants

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AGENDA

Friday 14 March 2008

- Arrival of participants
20.00 Informal Reception and Dinner at the hotel

Saturday 15 March 2008

- 09.00–10.45 Session 1: Chair, Paolo Cotta-Ramusino
The Pugwash Project on Strengthening Intra-Kashmir Economic and Civil Society Cooperation
- 10:45–11:15 Coffee Break
- 11:15–13:00 Session 2: Chair, Jeffrey Boutwell
The Potential for Economic Cooperation Across the Line of Control
- 13:00–14:30 Lunch
- 14:30–16.00 Session 3: Chair, Talat Masood
Potential Areas of Economic Cooperation: Trade, Agriculture, Tourism
- 16.00–16.30 Coffee Break
- 16:30–18:00 Session 4 Chair, Jeffrey Boutwell
Financial and Legal Frameworks needed for intra-Kashmir Cooperation
- 20.00 Dinner

Sunday 16 March 2008

- 09.00–10.45 Session 4 Chair, Paolo Cotta-Ramusino
Cooperation among Educational Institutions
- 10:45–11:15 Coffee Break
- 11:15–13:00 Session 5 Chair, Jeffrey Boutwell
Natural Disaster Management
- 13.00–14.30 Lunch
- 14.30–16.00 Session 6 Chair, Jeffrey Boutwell
Improving Civil Society Cooperation
- 16:00–16:30 Coffee Break
- 16:30–18:00 Session 7 Chair, Paolo Cotta-Ramusino
Summary Discussion of Facilitating Intra-Kashmir Economic and Civil Society Cooperation
Open Discussion
- 20.00 Dinner

Monday 17 March 2008

- Departure of participants

Pugwash Workshop: *Promoting Regional Stability in South Asia*

Islamabad, Pakistan, 29-30 March 2008

Report

By Claire Galez

Framework of the meeting

Pugwash having conducted several workshops and meetings on critical bilateral and intra-state conflicts in the heavily nuclearized South Asian and surrounding region, it was felt that it is time to look at these conflicts in a broader regional context. Representatives from Pakistan, Afghanistan, India, Iran, Europe and the United States participated in the March 2008 Pugwash workshop in their personal capacity and reflected on the chances for an enlarged regional cooperative framework addressing the intertwined issues of security and economic cooperation at micro and macro levels.

Three inter-related issues guided the debate:

- Afghanistan and Pakistan–Afghanistan relations
- India-Pakistan relations and Jammu and Kashmir
- The War on Terror

Positive trends in the region:

Elections in Pakistan have brought back a civilian government to power after almost 9 years of military rule. It is hoped that the restoration of a civilian administration will create a

healthy balance of power in the country and that democracy will, at last, succeed in being staunchly institutionalized. It is also hoped that improved governance will address Pakistani people's major socio-economic and security concerns. Progress on the resolution of serious issues of internal security as well as critical bilateral relations, in particular Pakistan-Afghanistan and Pakistan-India relations, including Kashmir, also rest on a harmonized vision of the civilian and military establishments.

In spite of been stalled for some time, the 5th round of India-Pakistan composite dialogue will take place in April-May this year. The composite dialogue needs to regain momentum and give impetus to the implementation of agreed bilateral and Jammu and Kashmir specific CBMs, enhanced economic and security cooperation, and a continued effort to build trust between the two nations. In security matters, for example, Siachen and Sir Creek are not infringing on the balance of power between the two countries and are therefore the least controversial issues. Arriving at an agreement on both fronts would demonstrate commitment and political will towards peace.

In this context, it is to be noted that the ceasefire between India and Pakistan on the line of Control (LoC) dividing Pakistan and India Adminis-

tered Kashmir has held since 2003.

In different countries of the region, people increasingly make their voice heard claiming their right to a genuinely participatory system of democracy, such as in Pakistan and in Nepal. In Bhutan a smooth and enlightened transition towards democracy looks promising.

Afghanistan remains critical on many fronts but, with the help of the international community, the government has progressed in developing a wide range of sector strategies with a vision for the country as a whole from education, health care and access to basic facilities to macro development. Yet, the implementation of these strategies must prove to be successful. Fundamental security issues such as the disentanglement of military operations from socio-economic reconstruction; economic and diplomatic relations with Afghanistan's neighbours, especially Central Asia; and adjustment of counter-insurgency operations in order to lower the level of collateral damages are also under serious consideration. The South and Eastern regions are still very vulnerable, while Afghanistan and Pakistan are struggling to find ways and means for a mutually beneficial rapprochement.

In all the countries of the region, there is hope that democratic institutions will develop in order to sustain a process of improved governance and socio-economic development,

improved regional and international relations and to enhance the quality of multi-track dialogues in order to resolve decades of internal and cross border conflicts.

Pakistan-Afghanistan

Pakistan

Pakistan Western province and tribal areas remain extremely volatile. The coming to power of the Awami League party in NWFP is a clear indication of people's rejection of violence and extremism. However, parties and groups associated to lethal political statements such as suicide bombing and random killings, causing heavy civilian casualties, are far from been defeated on the ground. Pakistan's civilian government's intention to re-establish a dialogue with conservative elements and warring factions in the region is a dicey exercise calling for heightened caution, yet one has seen straight military operations conducted by the Pakistani army, failing to restore law and order.

Simultaneously, attempts at integrating the Provincially Administered Tribal Area (PATA-NWFP) in a uniformed system of governance aligned on the Centre (party politics introduced in the 1960s) have not been very successful. It has rather competed with the traditional system of governance and weakened the authority of the elders (Maliks). This combined with extremely poor investment, particularly in education, has deeply affected the traditional societal hierarchy where the authority of the elder got further swamped by a centuries old marginalized rural religious, but increasingly poorly educated, male-dominated society. In sum, party politics is a plus in a system that moves towards participa-

tory democracy as long as the Centre establishes a trust relationship with the province's elected representatives and provides for urgent priority needs. Another centre of power in the Province is the elders, with whom both the Centre and local political duty-bearers need to establish consultative and constructive power-sharing mechanisms. On the other hand, the ambitious self-perception of brutal and crude marginalized groups turned power-brokers (with or without the support of the State) mostly relying on a very narrow understanding of religious principles, cannot be either militarily and politically dismissed or educationally and socially ignored. Result-oriented dialogue on power-sharing and development programmes are undoubtedly necessary but non-action in spawning an educated elite in Sharia, Constitutional and customary law will preclude any success in restoring social harmony and addressing one of the fundamental root causes of conflict in the region.

NWFP (PATA and FATA) is home to local and cross-border movements such as the Taliban, local militias and foreign elements. Their strength is exacerbated by three main factors. One is a difficult centre-province relation, as described above, where core issues failed to be addressed for decades dangerously marginalizing a wide range of the population; the second being a somewhat unchanged regional strategic vision and policy and the third being the military presence of foreign troops.

Post 9.11, the "War on Terror" added to the already equation. Whereas military and security forces' intervention may be inevitable, dialogue should prevail at national level for Pakistan to regain ownership of its own take in the *War*

against Terror. A failure to do so exacerbates a populist perception of illegitimate foreign (political and military) interventionism and widens the gap between the government and its people.

Afghanistan

Afghanistan Southern and Eastern regions witness a revival of anti-government forces which no military intervention could claim a straight victory against, quite the contrary.

After 6 years of intervention, the presence of foreign political and military forces is not perceived as having stabilized the country or significantly improved people's lives. This creates resentment and runs the risk of a serious backlash.

The visibility of reconstruction efforts shrinks as divergent views divide Afghanistan "friendly" powers. This, along with a disproportionate use of force (creating collateral damages) has serious consequences on people's perceptions and creates a vacuum easily occupied by anti-government forces.

Although there are enormous amount of reconstruction moneys pledged to the country, the use of foreign contractors and subcontractors causes enormous losses and lessen aid effectiveness.

Alleged overwhelming foreign influence together with high level of corruption and poor governance undermine the legitimacy of the government.

Illegal trade is far from receding. For the populations concerned across the border there are first of all centuries of unregulated traditional trade and little or no access to alternative livelihood. On the other hand, a climate of impunity and high level corruption strengthens criminality while the benefits of principally

narcotics and arms trade fortify warring factions' capabilities.

The announced 2009 elections already exacerbate tensions and the spread of terror attacks beyond the South and Eastern regions.

Looking Westward (in this context), the isolation of Iran is generally detrimental to regional cooperation and appeasement of conflict.

Pakistan-Afghanistan

Pakistan–Afghanistan divided (predominantly Pushto) region remains extremely volatile politically and militarily. The region's cross-border and intra-state conflicts on both sides of the Durand Line keeps a proud and defensive majority population subdued to the conflicting interests of several parties to the conflicts.

On both side of the border, anti-government forces are not homogeneous as often portrayed but are principally formed of ethno-nationalists, religiously driven ideologues as well as leaders with vested power and financial interests fueling amongst other factionalism and illegal trade. All these movements' foot soldiers are often destitute individuals who see no end to their ordeal and make a choice by default or desperation and frustration. A failure to de-construct the concept of "the enemy" will erode the chances of tackling resurgent and stronger instability in the region.

India-Pakistan relations and Jammu & Kashmir

India-Pakistan

The general perception is that as compared to the situation in the Western part of the Sub-Continent, some significant progress has been made both in terms of India-Pakistan relations and on the issue of Jammu and Kashmir.



Great Mosque, Islamabad.

It is well understood that 60 years of breach of trust, wars and conflict cannot be resolve by the stroke of the pen. On the other hand, in the past few months, the situation in Pakistan has not been very conducive to keeping the momentum on bilateral relations but it is undeniable that the foundations for political understanding have been firmly established in the past years.

It is also to be taken into consideration that State elections in Indian Administered Kashmir in 2008 and national elections in India in 2009 will influence the pace of dialogue and implementation of both bilateral and Kashmir specific CBMs.

The latest developments in Pakistan have demonstrated the positive effect of a vigilant civil society. Strengthening civil society will strengthen the leadership to take bolder steps towards rapprochement and improvement of relations.

Jammu and Kashmir

Positive trends

The achievements of Pakistani and Indian leaderships over the past few years should not be underestimated.

Both countries have begun to recognize and identify common interests in moving towards a resolution of the issue.

Improved cross-LoC relations are less and less perceived as an erosion of sovereignty by both countries.

Even if the Kashmir specific CBMs have so far not delivered, they remain a solid foundation to reinvigorate the dialogue process.

The creation of civilian institution on both sides of the LoC with the perspective of exchange and reciprocity in the fields of education, professional exchanges, energy, cross-border trade, people to people contact, etc. is attracting much interest.

Proportionately to the decrease of violence in Indian Administered Kashmir, the prospect of withdrawal and reduction of troops remains firmly on the agenda.

It is generally understood that the process and genuine progress are more important that the continued argument on a possible end game.

It is generally understood that there should no longer be any consideration for a redrawing of borders.

It is hoped that the ceasefire on the LoC which has held since several years will become a permanent feature consolidated by positive cross-border communication and exchanges.

Critical issues

Consultation and inclusive dialogue with the Kashmiri leadership on both sides of the Line of Control (LoC) remains a source of concern on the part of the Kashmiri leadership. On the other hand, Pakistan maintains that although it acknowledges that the UN resolutions do not offer the proper framework for the resolution of the dispute any long term solution on Kashmir should be acceptable and in the best interest of all Kashmiri groups.

It is widely acknowledged that violence and the use of force cannot enforce a solution but statesmanship in both countries with more political will and pro-active policies have been lacking.

A great weakness in the past years' process has been the failure of positive Track II initiatives to influence or significantly change the mindset at Track I level.

Kashmir specific CBMs have lacked firm political support in both countries and failed to deliver according to people's expectations. This is a dangerous trend. Both countries need to go beyond a national security syndrome and be pragmatic in resolving administrative hurdles and unnecessary restrictions for example on the movement of people and improved cross-LoC communications.

Little progress has been made in integrating and developing democratic institutions in the Northern Areas and in considering the region as a major factor in favour of regional cooperation.

Comparatively whereas APHC is in principle not barred from participating in elections, the same is not true in Pakistan Administered Kashmir. An enlarged and more equitable electoral process must strengthen Kashmiri people's representation.

Iran in the regional context

Approached by the EU and Japan at the early stage of consultation on Afghanistan (Bonn), Iran expressed its will to cooperate in the stabilization and reconstruction of Afghanistan by handling reconstruction and surgical security operations simultaneously. Unfortunately, in the aftermath of the invasion of Iraq, the continued isolation of Iran and the constant threat of war against the country set a dangerous trend

US embargo on any initiative of regional cooperation in the energy and trade sectors further undermine the chances of multilateral benefits for the region.

Unless a constructive multilateral dialogue is initiated, there are little prospect of stabilization in the region.

The War on Terrorism

The principal stake-holders in the region have different timeframes and strategies less according to a genuine assessment of the situation than that of their perception of national interest:

The US intervention in the region is driven by considerations of its subjective global interests from the Middle East to China and Central Asia.

Iran battles its isolation fighting US interests directly or by proxy on the same terrain (from Middle East to China and Central Asia).

NATO remains constrained by its dual role as a military and reconstruction force in Afghanistan

Pakistan half heartedly struggles to maintain a level of negotiations with India while keeping its strategic precept of need for territorial depth and for a "friendly" government in Kabul. Now that the battle against extremism is fought on its own soil and that it realizes military intervention will not pay much dividends but to please its allies, it is re-thinking its strategies and approaches with little guarantee of success.

India, strengthened by a stronger economy and a new place on the world stage is slower to respond to immediate conclusive measures of normalization of relations with Pakistan which it still suspects of harbouring proxy enemy forces (Jihadism and terrorism) as an indirect military option. India's influence in Afghanistan is perceived by competing powers as a threat.

An amalgamation and short cut identification of "the enemy" leads to unsophisticated and often disproportionate use of force provoking collateral damages that engenders high resentment serving the cause of lethal anti-government forces both in Pakistan and in Afghanistan. The same reinforces the links between local and foreign elements.

A public perception of a foreign dominated agenda in the region has de-legitimized national governments with dire consequences.

Conclusions

Starting from cross border conflicts (Pakistan-Afghanistan / Pakistan-India-Jammu & Kashmir) and extending to the volatile situation in

rest of the region, a zero sum game will bring no short or long term benefit to the countries of the region and beyond. Conflicts in these regions have destroyed the fabric of society. There are no other ways but to cement relations rather than trying to by-pass each other. Each party to the conflicts and war in the region has to come to the realization that vested interests or a misconstrued perception of the 21st century security paradigm will ultimately not serve its own aim. From Egypt to China, the South, West and Central Asian region is one of the two epicenters of peace or destabilization in the world.

Since the Soviet era to now, the whole region has born the cost of conflict in Afghanistan. Proliferation of arms, emergence of extreme ideology, proliferation of unregulated

and illicit trade, flows of refugees, destitution and marginalization of entire sections of populations, increased factionalism, etc. all countries are affected. Working on an inclusive cooperative regional framework is essential to strengthen liberal forces and re-establish viable socio-economic conditions for billions of people.

In shedding their own vested interest Iran and Pakistan can be very positive forces in the stabilization of the whole region

Strengthening of democratic state institutions and robust economic reforms are essential for the governments of the region to regain legitimacy in the eyes of their citizens.

The question of border control and of proportionate use of force is essential in avoiding collateral damages both on the Pakistani and

Afghan sides of the border. There is a great and urgent need for cooperative security mechanisms. A genuine assessment of military intervention and a thorough analysis of the failure to deliver principally in the economic, justice and rule of law sectors are urgently needed by all parties concerned, including by the international community at large, NATO and the United States.

In both case of Kashmir and Push-toon areas, there are ways to restore national harmony and identities without re-questioning the borders.

A wide range of areas of cooperation inclusive of all countries in the region from Iran to China need to be explored and considered more seriously as a deterrent to further destabilization and as a mean to marginalize anti-government and extremist forces.

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European Security and Cooperative Approaches to Arms Control

Potsdam, Germany, 6–8 June 2008

Report by

Götz Neuneck

Key arms-control agreements that were negotiated in the latter stages of the Cold War and which contributed significantly to bringing that conflict to an end are increasingly losing their significance. Following the cancellation of the ABM and START II treaties, European arms control agreements are now also being affected by this erosion. The Treaty on Conventional Forces in Europe (CFE) was suspended by President Putin on 12 December 2007 in response to the NATO states' failure to ratify the Adapted CFE Treaty and to fulfill additional Russian demands. US plans to install components of a global missile defence system in Poland and the Czech Republic and the potential of further NATO enlargement are further sources of Russian grievance. There is concern that further treaties, such as the INF Treaty, the Vienna Document, or the Treaty on Open Skies, could also be affected by this trend. The collapse of European arms control would have far-reaching consequences for European and international security.

As we all know, Pugwash played a significant role in helping to end the Cold War and to establish comprehensive arms control agreements. For this reason, the Pugwash community should invest more in shaping the

arms-control debate within Europe – including Eastern Europe and Russia. Additionally, two international appeals from Western (“Bring the Adapted CFE Treaty into Force,” November 2007) and Russian experts, academics, and former diplomats (“Re-vitalize the CFE Treaty Regime,” March 2008) [see the Pugwash website] have recently underlined the need to overcome the current stalemate in European cooperative security arrangements, which could lead to new dividing lines and confrontation.

The German Pugwash Group decided at short notice to hold a Pugwash workshop on “European Security and Cooperative Approaches to Arms Control” in Potsdam, near Berlin. The goals of the workshop were to bring together high-ranking decision makers and academic experts from the United States, the Russian Federation, and Europe to discuss problems of European security and arms control in reference to a number of concrete issues; to identify options for future action that could strengthen cooperative security structures; and to boost dialogue between the participating actors and organizations. The workshop was attended by around 25 participants. The lack of preparation time (planning only started in April 2008), was compounded by the inability of many academics and experts to attend due to other obligations. Nevertheless, the interest in

discussing crucial arms-control issues on the part of experts, officials, and academics was very high.

In his welcoming address, Secretary General Paolo Cotta-Ramusino noted that, under the current circumstances, Europeans should be able to solve their low-level conflicts, and called for them to use the workshop to think beyond the traditional arms control discourse. The first session, “European Security and the Status of Arms Control,” focused on the poor shape of key arms control agreements such as the bilateral START Treaty, the NPT, the Outer Space Treaty, and the conventional arms control regime. Unfortunately, military matters, unresolved disputes over flank regulations, and the unwillingness of some parties to undertake further reductions are causing longstanding regulations to be overturned. Many participants stressed that arms control could be for the benefit of all parties and that cooperative arms control is a good insurance policy when facing an uncertain future. A discussion of the historical lessons that can be learned and the promise of specific aspects of arms control for the future is urgently needed. A number of participants pointed out that NATO's ongoing expansion and US missile defense deployments are complicating factors.

The second session, “The CFE Treaty: Different Perspectives – Options for Preserving the Treaty

Regime,” revolved around the suspended CFE Treaty and the unwillingness of NATO countries to ratify the Adapted CFE Treaty. One paper outlined the stabilizing function that the CFE Treaty exerts on Europe. Future steps could include the lowering of national and territorial ceilings as a compensation for NATO expansion. Minor issues should not dominate the CFE agenda. The hope was expressed that arms control should not be undermined by the so-called “frozen conflicts.”

The third session focused on “Missile Defense and Security in Europe.” One paper outlined the major difference between technological reality and political concerns over a new strategic threat, which is only expected to emerge in several decades. Known as “third-site” missile defense, the deployment of components of the US missile-defense in Poland and the Czech Republic touches Russian strategic sensitivities. The emergence of missile defense capability is directly related to nuclear arsenals and the future of nuclear disarmament. The discussion again reflected the confusion on technical questions and political ambitions. There is also no homogeneous European position, which gives the superpowers the opportunity to dominate the discourse.

In the next session, “Nuclear Disarmament and Arms Control in Europe,” two papers shed light on the NATO tactical nuclear weapons (TNWs) that remain in Europe, explaining the obstacles to further reductions or total elimination. The 2010 NPT Review Conference is a perfect opportunity to end the deployment of US nuclear weapons in Europe. Participants mentioned

the double standards of Western nonproliferation policies as well as security concerns regarding the storage of these weapons, and calls were made for new initiatives in this complex field. Under these circumstances, the Russian government seems to be less inclined to reduce the number of TNWs that it has in storage.

The final session provided space for additional comments and suggestions. Many agreed that arms control is becoming more difficult as a result of the complex political environment. The general public and the world of high politics are less sensitive to the arms control agenda. There is some hope remaining that cooperative arrangements in the fields of conventional arms control (ratification of the AFCE-Treaty) or missile defense (cooperative missile defense activities) may be able to help overcome the impasse. An impression was also left that the positions of the two sides are not as far away from each other as they are sometimes presented as being. However, it also became clear that unforeseen events could cause a downward spiral that could lead the situation to deteriorate in Europe and might ruin the benefits of the arms control infrastructure, which are the fruits of common interests and the work of the last decade.

Working Papers

Wolfgang Zellner: *European Security and the Status of Arms Control*

Hans-Joachim Schmidt: *The CFE Treaty: Different Perspectives – Options for Preserving the Treaty Regime*

Marco de Andreis: *Eliminating NATO Tactical Nuclear Weapons, Unione Scienziati Per Il Disarmo*

Martin Butcher: *NATO, Arms Control and European Security*

Götz Neuneck: *Technical and Political Realities of Ballistic Missile Defense in Europe*

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Nadia Arbatova (Institute of the World Economy and International Relations, Moscow, Russia);
Bates Gill (SIPRI, Sweden); **Lynn Eden** (CISAC, Stanford University, CA, USA);
David Holloway (Stanford University, CA, USA); **Götz Neuneck** (University of Hamburg, Germany);
Etel Solingen (University of California, Irvine, CA, USA)

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Interview with Wolfgang K. H. Panofsky (1919–2007)

May 30–June 1, 2007

by María José Viñas

In your memoirs, you mention that your parents, both enthusiasts of art, were disappointed by the fact that your brother and you chose the science path...

They were not disappointed. My father [Edwin Panofsky] was a very well-known professor of the history of arts and my mother was also a student of art history. So they had absolutely no interest in science. And both my brother and I got interested in science, so my parents called their kids “the plumbers”. But it was not criticism; to them it was sort of amusing. They helped whenever they could to buy us gadgets and tools and whatever. They were very supportive, but just intellectually not very interested.

Then, how did you get interested in science if you didn't have a scientific-oriented family?

As a kid I liked building things and I put together a tinkers' club of fellow students. We got together and built gadgets. When my family was forced to leave Germany, we went to the United States and I entered Princeton at a very early age, at 15. My knowledge of English was very bad, so it was sort of natural to concentrate in science. It was relatively easy for me to pursue the scientific direction because I could do that without being much impeded by my very poor knowledge of English.

So was it a mix of coincidence and interest?

Opportunity and interest. I mainly took courses in physics, engineering and science, so one thing led to another.

This is likely one of the last interviews given by Wolfgang Panofsky, known to his many friends and colleagues as ‘Pief.’ Prof. Panofsky was one of the earliest of the prominent American physicists to devote his efforts to ensuring that nuclear weapons would never again be used in warfare. He first attended a Pugwash meeting in Stowe, Vermont, in 1961, and continued to support the Pugwash movement throughout his life.



You met Albert Einstein in Princeton...

Well, Einstein was an acquaintance of my father. In Princeton, my parents didn't drive a car and Einstein didn't drive a car, so I was sort of the designated driver. So I would drive Einstein and my father around while they were having discussions in the back seat.

You said your father wasn't interested in science, so what did he and Einstein talk about?

Einstein was sort of interested in the mythology of science, how the pursuit of science related to ancient beliefs and my father was very well acquainted with cultural history. So they had a lot of discussions about how things changed from mysticism to science and from belief to science. They were interested mainly in the philosophical foundations of science.

Anybody would think that having Einstein around would be a great influence in the life of a physicist, but do you think he had an influence on you?

No. I was just trying to help my father to get around. We had no intellectual relation. I knew he was a great and famous physicist, but that's all. He was a nice man but we had no discussion on physics.

Do you regret that now?

Well, there was no way at that time. I didn't know anything. I was around 15.

What about meeting Wolfgang Pauli, was it any different?

It was somewhat similar. My father and Pauli were members of the Institute of Advanced Studies in Princeton. They also talked about similar things, about mysticism. Pauli in particular was interested in how science related to the culture of different evolving times. I met Pauli again much later, after I did some experiments in Berkeley I gave a talk in Princeton and Pauli asked questions and so forth.

And did you manage them well?

Oh yes! He would sit in the front row, nodding his head and you would think he was asleep, but he was not.

How did you get involved in the Manhattan Project?

It was fairly accidental. During the war, almost all physicists were drawn into military activities. I was working at Caltech on measuring shockwaves from high speed projector, and then I got drawn into the Manhattan District. Luis Alvarez was at Los Alamos and [Walter] Oppenheimer asked him to develop methods to measure the strength of the nuclear explosions. Alvarez read some of the papers that we had written at Caltech and he said, "Hey, those people have done my job, so I don't have to do it." So he got in touch with [Jesse] DuMont, my thesis supervisor at Caltech. I just went back and forth between Caltech and Los Alamos, carrying with me some of the instruments which I had built at Caltech for measuring the shockwaves of the bullets, and then reengineered them to measure the shockwaves from nuclear bombs. Those devices were used over Hiroshima and Nagasaki; the airplanes that dropped the bomb also dropped with a parachute the gadgets that I had designed to measure the shockwaves.

Why was it so important to measure the shockwave?

Obviously the physicists who had designed the thing wanted to know how well it worked, how close the actual performance was compared to the calculations. And the shockwave is a very precise way to measure the energy released from the bomb.

How was the measuring of the first test of the bomb?

We planned to use our device in the first test in July 1945 in Alamogordo, but the weather was bad. I was in an airplane over the bomb, but Mr. Oppenheimer ordered us

to stay away at a safe distance, 20 miles away. Since it was the first bomb, nobody knew exactly how much pressure it would cause. We took sketches of the mushroom cloud and all that, but we didn't drop the gadget.

So your only participation with the Manhattan project was regarding the shockwave measuring device?

Oppenheimer refused to have any information barrier among the different scientific people who worked [at Los Alamos]. So even when I was working on instrumentation to measure the blast wave, I was invited to all the meetings, where they talked about the design of the bomb and all the other great secrets. So I was well informed of the whole business, but I was not involved in the actual building or designing of the bomb.

How long did you work in the Manhattan Project?

A bit over a year. Everything went much faster during the war than today; there was minimum bureaucracy, people didn't worry much about where things went and where money was spent... it was all "get the job done" and we'd do the paperwork later. So I worked quite hard in adapting these things, and they were used overseas but I didn't go. Alvarez did.

And after the war, you moved to Berkeley...

Luis Alvarez was a professor on leave from Berkeley and he developed some ideas about using surplus leftover materials from radars to build the power sources for a linear accelerator. He had liked my work at Los Alamos so he twisted my arm to join him in Berkeley. I became sort of his deputy in building the proton linear accelerator in Berkeley in 1945.

From what I have read in your memoir, it seems that Alvarez wasn't an easy person to work with, right?

Well, he was an interesting person. He was what today would be considered a conservative. He didn't really understand the color grey: things were either black or white. And he had a great deal of self-confidence, so he had strong opinions on what was right and what was wrong. We disagreed often on political subjects, but we remained good friends. And he was a great physicist, he was the "show-me" type: he didn't like to accept authority, he would only do those things that he personally understood very well.

What was your work at Berkeley?

I basically did the detailed engineering work on the accelerator and supervised about 30 people working in it. I was

what today would be called a project manager, and I never knew what the budget was. We built the proton accelerator, and it worked. I did some theoretical work on the accelerator, but mainly practically put it together. In Berkeley, there was no distinction like there's here between accelerator builders and experimentalists; as a reward for having built a machine, you could use it. I did some measurements on proton-proton scattering with that machine. Those were days in Berkeley that were very exciting; at the same time that the proton accelerator was built, the synchrocyclotron and the synchrotron were built, and I did experiments in all of those. It was sort of an informal arrangement. And I learnt a lot of physics in the process: before I went to Berkeley I had had no contact with nuclear physics or particle physics.

You left Berkeley due to political reasons, right?

Berkeley at that time was probably the most productive and exciting place to be in high-energy particle physics, but then they had this disaster. This was the year of [Senator Joseph] McCarthy, who thought the world was full of communists and they were infiltrating everything. Accusations were made that universities' faculties and communities were full of communists, so the vice-president of the university, who was sort of the lobbyist for Berkeley in Sacramento, reported to the university's president Robert Gordon Sproul that the legislators were going to pass some laws which would make it illegal to employ anyone in the university who had some kind of communist background. So instead, the president decided to have all members of the staff and faculty to swear an oath stating that they had never been members of a communist-associated organization. The Loyalty Oath caused a lot of commotion on campus. Interestingly enough, people who had European background were much more sensitive to get offended to swear an oath, because Mussolini in Italy also used an oath to get rid of people he didn't like. So most Americans took this sort of as being dirty politics, but some people refused. I actually signed it, because I had already signed so many other things: during the security clearances for the Manhattan District, I had signed all these investigations that I wasn't a spy. But when it was clear that the rights of the people who had a strong conscience about such matters were not respected, I got very unhappy and I told the laboratory I was leaving.

Did they let you go easily?

Ernest Lawrence drove me to the house of John Neylan, who was the chairman of the board of regents of the

University of California to talk about why I was unhappy, because Mr. Lawrence didn't want me to go away. So Mr. Neylan, who was an old man in his 70s, said "Young man, what is bothering you?" And I told him that the rights of people who had strong conscience about such matters should be respected. So Mr. Neylan said "Now listen here, young man". And I never opened my mouth again for two hours. Actually, it was interesting and illuminating: Mr. Neylan didn't care that much about communism, he just felt that the faculty members had behaved irresponsibly.

What do you mean?

They had kept changing their mind about how to react to this: some people suggested changing the words in the oath; others said they didn't want any oath... People tried to compromise in various ways and they were not negotiating in a responsible manner. But that's the way professors behave. So this mainly proved to me that Mr. Neylan didn't really understand the academic animals very well. But anyway, I quit, and since I had published some very well-known papers, I got a whole raft of offers of employment, including from Princeton, Bell Telephone Laboratories, Columbia... But then, two people from Stanford showed up in my office and twisted my arm to make me come to Stanford.

What did they do to convince you?

It was easy. In my soul, I didn't really want to leave and in addition, I had lots of kids, so just moving across the Bay was sort of a bit of a compromise. But Alvarez told me "If you go to Stanford, you'll never do anything again."

Was that a threat?

No, he said that like a friend. He said: "Please don't leave. If you go to Stanford you'll be just teaching some courses and you won't do anything again." But I left anyway. Life at Stanford was very complicated in the beginning because at that time there was on the one hand the development of electron linear accelerators and in the other hand there were some very good physicists who were trying to use the accelerator, like Robert Hofstadter, but they didn't talk to one another. There was very bad understanding here about the essential unity between your tools and your experiments — there was a rather sharp division between the accelerator builders and the experimentalists, and there were all sorts of totally paradoxical things. They built an accelerator, but it ended 6 inches from the back wall, so there was no room to do any experiments. Hofstadter tried to set up the experiments on the side, but he

didn't resolve how to do that. What Stanford needed badly was to unify the communities of accelerator builders and accelerator users, and theoreticians. I had experience in exactly that, so that worked there. I also designed some gadgets for filtering the beam, so experimentalist would know exactly what energy width they had to work with. But at the same time, since I was a member of the physics department faculty, and all members of the faculty had to teach freshmen. So even though some of us had heavy responsibilities in building things, organizing things, all that, we all taught freshman physics. And in addition to that, I got involved in arms control and other military stuff for the government. So I had sort of a triple life between teaching, trying to turn a high-energy physics laboratory into a productive institution and then running back and forth to Washington.

You made the proposal for building the Stanford Linear Accelerator Center in 1957. How did things develop from there?

Well, several people felt that the work at the high-energy physics lab was very successful: Hofstadter had done his experiments in electron scattering and I directed 14 different PhD theses at the time, and various experiments of particle physics on the decaying spectrum of the muon and electro-pion production. We gave lots of reports at international conferences, so the work here became very well known. So suddenly the linear accelerator business put Stanford in the map of high-energy particle physics. That induced several of us to think about the next step, so we had a series of meetings and we designed a proposal to build the next very much larger machine. And then some of the theoreticians looked at some of the possible experiments with the accelerator. But what we proposed to do and what SLAC actually did was a completely different thing.

How so?

The proposal to build SLAC is an amazing document. If you compare to what is now demanded, it is ridiculous, it only has 50 pages. We mainly proposed to extend the work in electron scattering from the high energy physics laboratory, and we proposed to use the electron machine as a source of secondary particles [pions and others] to study their interaction. But there was no mention of inelastic scattering, there was no mention of creating new leptons.... So the whole bunch of things with which SLAC has contributed to the evolution of the work on the standard model, nothing of that was foreseen.

I understand that what followed was a bit of a bureaucratic nightmare...

The problem was that since this proposal was a very new initiative, we didn't even know which part of the government we should send the project to. At that time, the National Science Foundation had just been created, while the Atomic Commission had lots of experience in supporting the various organizations which were left over after the Manhattan District, including UC Berkeley. On the other hand, the Department of Defense and the Navy had been supporting the work at Stanford, at the high-energy physics laboratory. We had no idea whom to address the proposal, so we submitted it to all three of these governmental agencies and we spent quite a lot of time running around Washington, giving briefings on what the proposal was about. The government had established a special committee to advise on the future of high-energy physics, and they wrote a very positive report. President Eisenhower designated that the Atomic Commission should be the constituent agency on behalf of the entire United States to manage high-energy physics, mainly because of their experience in running big projects. So the Atomic Commission, now the Department of Energy, inherited the responsibility.

And the Eisenhower made a speech endorsing SLAC's construction. But he had forgot some formality...

Eisenhower had forgot to consult the Congress before making the speech, and at that time we had a Democratic congress and a Republican administration, and the Congress decided not to approve it to "slap" Eisenhower for not having asked them beforehand. Then there was lots of back and forth politics, but then after a delay of a few years, congress did approve the construction of Stanford's two-mile machine and a certain project in Hanford, Washington, which the Democrats wanted. In 1961 SLAC got approved and in between we had money from Congress to continue designing the engineering. We put together a very good team, and we were able to recruit a very good group of architect engineering management to manage the civil construction.

But the main thing, I felt again that because of the unity between the experiments, we had to design and build the experimental facilities at the same time as building the accelerator, although that was not the costume at that time. So then the machine got built and the rest is history.

How would you compare what it was building SLAC to what it is today building an international facility?

While building SLAC, the job of the director was much easier. This was inherited from the war: from the war people recognized that a bunch of physicists, if highly motivated, can really manage these giant projects and do them rapidly. SLAC was built within budget, within proposed performance and on schedule. We met exactly what we proposed to do. And the government basically didn't want to ask in real detail. I mean, of course we accounted for the money and all that, but the government did not really have the capability to track that we were able to do that. But now, that memory of what physicists can do has sort of faded and the trust of the government in physicists to manage their own affairs has sort of eroded in time. So now there's a lot more details, supervision and accountancy. That means that today's directors have to spend a lot more time and effort in administration than on the science, which is unfortunate. So under today's conditions we could have not possibly built this machine in four years. But we did.

Research in accelerator-based particle physics is becoming more and more expensive, since there's always need for a bigger machine. Do you think that in the future, international collaborations will be needed to fund this research?

The answer to that question is technically no, politically yes. Technically, it is obvious that the next accelerator could easily be afforded just by United States, or just by Europe or just by Asia. If you look at the numbers, roughly speaking the next accelerator will cost around 10 billion dollars. Now that's what the United States spends in the Iraq war in one week. So clearly the U.S. could afford it, could build the next generation of accelerators for particle physics. But since the fraction of money which we spend in basic science is whatever it is; the general agreement is that the next generation of a major accelerator must be an international undertaking. That's basically a political conclusion, not a technical conclusion.

And the problem with international collaborations is that the administrative complexities that go with them make life extremely complicated. So accelerator-based physics is in real trouble because the time scales are so long that is not clear to me how the career pattern of young people on whom we depend for new ideas, new initiatives, how their career pattern fits to this timescale.

You have been, and still are, a member of the JASON defense advisory group. How did you get involved with this group and what are your duties?

Right after the war, several people, particularly Marvin

Goldberger, who later became president of Caltech, worried about the fact that although during the war scientists had been interested in security affairs, now everybody had gone back to their campuses to teach or do research. He felt that scientists should keep involved in security affairs. So he founded what's called the JASON, which is a group of scientists, initially mainly physicists but now also a lot of biologists, who were interested in issue of national security. They're very independent, they're being supported by the defense department, but they don't take any instructions. And they chose their own members. There was a big crisis a few years ago when the Bush administration wanted them to add three members of their own choosing and they said no, so they cancelled the contract and that caused a big row, they went ahead and everything went reinstated.

What kind of issues have you studied as a JASON?

Some times I participated in studies and wrote some reports. Now, being sort of ancient, I usually go to the final close-out review sessions and discuss the reports, but I'm not particularly active in the studies. I've worked on some phases of what is called the stockpile stewardship program, to keep nuclear weapons reliable without any testing. I've also been participating in how to detect radioactive materials which are smuggled in shipping containers.

One of the main things that JASONS do is shutting down what we call crackpot ideas. There are all sorts of projects on which the Pentagon spends a lot of money, which have basically bad science. Quite recently there was an episode where the Pentagon thought that a certain material, hafnium, would be a nuclear explosive and it was wrong. Basically the JASONS wrote a very nasty report shutting it down.

How did you become involved with nuclear weapons control?

After the war I started to get personally very much concerned that nuclear weapons had changed everything. Nuclear weapons have the power to put the effect of more than a millionth more explosive power into ammunition of a given size and weight. The lay people just don't understand the enormity of the difference it makes. After the war, I joined some groups, trying to give lectures to lay groups, explaining the difference between chemical energy and nuclear energy. The whole question of the balance between defense and offense is totally upset by the advent

of nuclear weapons, because a single nuclear weapon can do so much enormous damage, as we know from Hiroshima and Nagasaki, that the standards which defense must meet are so much higher relative to offense. In regular conventional weapons, defense can be very effective, even if they stop just a certain fraction of the weapons. But in the nuclear age, if a single rocket penetrates, it's an incredible disaster, so the standard which defenses have to meet relative to offense have tremendously changed, and people forget that. When people promote ballistic missile defense, they keep forgetting that in the nuclear age, the standards defenses must meet are incredibly much more demanding.

What was your role in the negotiations with the Soviets about stopping nuclear testing?

President Eisenhower had the idealistic idea that you could separate science and politics. So in 1958, he and the Soviets negotiated to have a conference of experts, where scientists would talk to one another to establish a possible control system to monitor and verify a possible treaty forbidding nuclear test. The idealistic objective was that scientists talking to one another would use the same language, so they could arrive at something and then later the politicians could negotiate the treaty based on that. Prior to the conference, the government had had several committees to study how you would monitor nuclear explosions in outer space a hundred million kilometers away. There were people in the United States who didn't want to stop nuclear testing, mainly Edward Teller. He kept inventing lots of ways how the Soviets could cheat and evade any possible test ban. He proposed that the Soviets could send one rocket to space carrying a nuclear weapon and then another one carrying the gadgets to measure the nuclear explosion and broadcast back to Earth. So a committee was set up, of which I was a chairman, to see whether Teller's objections made any sense. I studied the technical features, and mainly came to the conclusion that the Soviets wouldn't go through that effort to evade a ban on testing. We wrote a report, which was unanimous, and made it rather clear that it was not a good idea, but then the negotiations with the Soviets took place in 1958 and because of Teller's pressure, there were two discussions with the Soviets, one, called Technical Group 1, to discuss how you could evade a ban on testing in space, and the Technical Group 2, how recent data had made it easier to cheat by setting nuclear weapons testing underground. It was a very interesting experience and it showed very clearly that separating science and politics

was essentially impossible, because most of the times when we disagreed with the Soviets it was always in the same direction, with the Soviets saying that monitoring and testing was relatively easy and we said it was harder, because the Soviets didn't like intrusive inspections. So if the technical means of detecting these things was easier, there would be no need for inspections. So it was clear that the Soviets, either by instinct or by instruction, could not clearly separate politics and science in this clean way as Eisenhower had visualized.

How do you think the situation is nowadays: Are science and politics still mixed?

When you talk about science advising to politicians, you have to recognize that there will always be tensions. Today what happens very often is that scientists come to the conclusion that something which the government is doing really violates lots of science, and the government doesn't like to hear that. It automatically sets up a conflict. So having a clean separation between science and politics simply doesn't do well.

To how many presidents were you a scientific advisor?

I was a member of the Presidential Scientific Advisory Committee during Eisenhower and Kennedy, and then I was in sub committees under Johnson, and then I was in an especial committee in arms control for Carter. Carter was a remarkable guy; in contrast to others, he was very much interested in technical things. But he sometimes would want much more detail technically than was practical for the president. I remember once I was giving a one-hour briefing to Carter on the safety of nuclear reactors. And then there were two minutes left of the appointment and he said "Dr. Panofsky, explain to me the difference between the uranium and sodium fuel cycle of the reactors." This was a question from the POTUS, but even if he had not been the President, I was not prepared and there would not have been a way to explain that in 2 minutes! So it showed very clearly he was interested, but he didn't have the sense to know what was practical or not practical to communicate.

What is your opinion on the present state of the nuclear armament race?

It's very complicated. In 1968, the United States promoted and then signed a Nuclear Non-Proliferation Treaty, which was ratified and came into force in 1970. It's supposed to be a bargain, between the divided countries of the world (non-nuclear states and nuclear states): there

were 5 nuclear weapon states — US, France, UK, Russia and China. The non-nuclear weapon states are forbidden to build nuclear weapons, and the nuclear weapons states were not supposed to give nuclear weapons to the NNWS, but in exchange for that, NNWS had the right of pursuing peaceful nuclear power, and then the NWS were obligated to work in good faith to get rid of their nuclear weapons. That's the bargain. That bargain is now under very severe stress, because on one hand, the NWS, particularly the United States, have not really done a good job in de-emphasizing nuclear weapons. During the peak of the Cold War there were 70,000 nuclear weapons built by the United States and U.S.S.R. combined. If you think about it, it's an absolutely insane number. If you think about the fact that two nuclear weapons, which had about 1/20th of today's weapons power, killed about a quarter million people, what would you do with 70,000? And today the numbers have come a little below 30,000, which are still 95% in the hands of Americans and Russians and that's still a much too large number. We really should de-emphasize nuclear weapons as tools for our national security, and we don't. We are still spending enormous amounts of money to maintain the nuclear weapons, we still have about 10,000 nuclear weapons, and the general population doesn't know that. It's no secret, but I once asked a member of Congress how many members of Congress know how many nuclear weapons the U.S. has. He thought very carefully and he said "about 10." And there are almost 500 members of Congress.

But some of the non-nuclear weapon states aren't complying with their part of the deal, neither.

Yes, on the other hand, some of the non-nuclear weapon states are secretly trying to acquire nuclear weapons. There is a long story of many countries who started nuclear weapons programs and then either voluntarily or under persuasion stopped doing it; Australia, Sweden, Switzerland, South Korea... lots of them. But some countries have programs going on. The main problem is that the technology of parts of the nuclear fuel cycles for peaceful nuclear power overlaps the technology for nuclear weapons. That's the problem today with Iran. The Iranians are saying "we are having a peaceful program and nuclear weapons are an instrument of the devil" and we think "you are having a nuclear weapons program." And at this particular moment in time, technically you can't tell the difference. The International Atomic Energy Agency keeps criticizing the Iranians of not being fully in compliance to some of their rules, but at the same time

they are also saying they have no evidence that the Iranians have a nuclear weapons program and we keep saying, "yes, they have a nuclear weapons program." There's no way to fix that unless you internationalize the supply of fuel to those countries that don't make their own. But that hasn't happened. So you can't tell the difference; Brazil is doing exactly the same thing that the Iranians are doing, they are enriching the uranium and they say they are doing it for national prestige and independence but since the United States likes the Brazilians and doesn't like the Iranians, we have a basically a highly discriminatory, illogical policy.

So everybody's to blame?

Nuclear states are not really living up to their commitment to de-emphasize the role of nuclear weapons in international relations. For instance, the Americans are pursuing programs to prolong the life of nuclear weapons. Currently there is a major debate about designing a new generation of nuclear weapons which are more reliable, and the British have just decided to start a new generation of weapons for their submarines. The Russians have a very large number of tactical nuclear weapons, which no one really knows what they are for. That means, shorter range nuclear weapons. The Chinese have not increased their number of nuclear weapons – and their numbers are small compared to the United States and Russia —, but they keep modernizing the means of delivering them. So none of the nuclear weapon states are really de-emphasizing nuclear weapons. Although the numbers have gone down some, from 70,000 to 30,000, but it's still a completely insane number. So the non-proliferation regime is under severe stress, but it's incorrect to say that it's all the Iranians fault or it's all the Americans fault. America has a true policy of perpetuating the discriminatory aspect of the non-proliferation treaty and decreasing our nuclear weapons only fairly moderately. We agreed in 2001 in the Treaty of Moscow to decrease the strategic nuclear weapons from the present number to 2,200, but that treaty only applies to the so-called operationally deployed strategic nuclear weapons, so that's 2,200 but the total number we have is 10,000. So even if we're advertising that we've done some arms-control with the Russians, the arms control only applies to a fraction of the total inventory.

Lastly: As a physicist, have you had fun?

Yes. Lots of fun. It's been a complicated life, but anyway I've had fun.

British Pugwash Group *The 2008 Joseph Rotblat Essay*

by Emmet Farragher

AN ANALYSIS OF SCENARIOS IN WHICH AN INDEPENDENT BRITISH NUCLEAR WEAPON COULD ARGUABLY BE USED, TOGETHER WITH AN EXAMINATION OF NON-NUCLEAR ALTERNATIVES IN EACH CASE.

To quote the legendary American singer-songwriter Jim Morrison, “The future’s uncertain and the end is always near.” This sentiment forms the backbone of most arguments supporting an independent nuclear weapon for Britain. The logic of the argument is that in the decades to come, the world may change in ways we cannot predict, and that in this potentially dangerous future world Britain may need the security of a nuclear weapon. This argument has re-surfaced in the debate over the renewal of Trident, Britain’s submarine-launched ballistic missile system. The current Trident submarines will last until 2025. Since a new Trident submarine would take two decades to develop and build, the government believes that if it wants to renew Trident it needs to take the decision to do so this decade.—if the decision were made later, it would risk a gap between the systems, in which Britain would have no submarine-launched ballistic missile system. Consequently, in March of this year it took the decision, and plans for the renewal of Trident passed through parliament, not without considerable resistance. However, more recently, the outgoing foreign minister Margaret Beckett called for Britain to serve as a ‘disarmament laboratory’ and said that ‘new thinking’ was underway. So the debate on the independent British nuclear weapon is not over. An important part of this debate will be the analysis of possible future scenarios in which a British nuclear weapon might be used, examining, in each case, whether there would be a non-nuclear alternative.

In the forthcoming debate,

the case for Britain’s nuclear weapon should not be based on a vague fear of the future. Possible scenarios in which this weapon could arguably be used need to be sketched out in as much detail as is currently possible. In this paper we consider three possible scenarios. In each case, the probability of its occurrence is perhaps low, but it would be rash to rule it out altogether.

1. A surprise attack on Britain made by a member of the current ‘nuclear club’.

This ‘club’ is made up of Britain, the U.S.A, Russia, France, China, India, Pakistan and North Korea, plus possibly Israel, Iran and Syria. Israel is widely believed to have nuclear weapons, though it has refused to confirm or deny this. Iran and Syria have been accused by a number of governments of currently attempting to develop nuclear weapons technology. Lewis Page once described the nuclear club as “three proper liberal democracies, and five other regimes ranging from a little bit worrying to quite bad news.” The five other regimes he was referring to were Russia, China, Israel, India and Pakistan. Of these, in the current political climate, Russia could be considered as quite worrying. In the last year UK-Russian relations have become tense. Despite this, it is unlikely that Britain would ever face a scenario in which an independent British nuclear weapon was used on Russia. Even if tension grew to the point where, for example, Russia cut off energy supplies to Britain, it is hard to imagine that it would retaliate by using nuclear weapons. Britain went through more than



fifty years of Cold War without using its nuclear weapons. In any case, Russia would never risk launching a nuclear attack on Britain because of the possibility that America would come to the defence of its old ally. The same 'Cold War' considerations also apply to China, a superpower whose emergence is almost complete.

Britain would be more likely to face danger from a smaller nuclear state, if it came to be controlled by extremists opposed to British values. Such a "rogue" state might conceivably attack Britain with its arsenal without warning. One possible example of this scenario might be Pakistan, which currently has a very unstable political landscape. It cannot be excluded that at some time in the future, extremists opposed to Britain could come to power there. A similar situation could also arise in Iran, if it were to pursue a nuclear weapons programme, and extremist elements such as the Revolutionary Guard took complete control of the country. If Britain were attacked by such a rogue state, using nuclear weapons or other weapons of mass destruction, a British response using a nuclear weapon might be conceivable. In this case Britain's options would be limited. If it were really a surprise attack, it would clearly be too late for negotiation or sanctions, and a retaliatory attack might be made to limit further damage to Britain, provided that Britain's nuclear capability had not been destroyed. Whether this retaliatory attack would be made using conventional or nuclear weapons would depend on the technological capabilities of the conventional weaponry available at the time: if conventional weapons were capable of destroying the enemy states' nuclear sites, there would be no need for nuclear retaliation.

2. A developing threat of a nuclear attack by a 'rogue' state.

It is in fact rather implausible that a nuclear attack by a rogue state would come as a complete surprise. That scenario pre-supposes that Britain had severely, and unpredictably, provoked the state in question, and that no third party had sought to defuse the situation. As Rodric Braithwaite, former British ambassador in Moscow, questions 'What provocation would we have to give to drive the dictator to such a course? Would the Americans not find their own way of stopping the crisis before a nuclear exchange developed that was out of their control?' Furthermore, a surprise attack is also made unlikely by the surveillance technology that exists today. Satellite technology, and other means of surveillance, enable govern-

ment agencies to spot the tell-tale signs of nuclear weapons development, and this gives information which would typically transform the scenario from a short-term crisis to a longer-term process. If a potentially dangerous state unfriendly to Britain is found to possess, or to be developing, weapons of mass destruction, Britain has many more options. A nuclear attack could arguably be proposed, but it would be a very flawed argument. A pre-emptive nuclear strike would, at the very least, earn Britain the condemnation of the international community. It would also be a very dangerous move, which would unbalance the international landscape, and possibly lead to a retaliatory attack and to a very messy conflict. The longer-term nature of this scenario allows a number of non-nuclear alternatives to be considered. The most desirable alternative would be to persuade the country in question to disarm itself of nuclear weapons or stop their development. Britain would join with the international community in attempting to encourage the disarmament of the country by diplomatic means e.g. through international economic and political tools such as negotiations, sanctions and the control of international aid. In recent times this approach has been successful, as the examples of North Korea and Libya testify.

The Republic of North Korea had been suspected of harbouring ambitions for nuclear weaponry since it withdrew from the nuclear non-proliferation treaty in 1993. In October 2006 North Korea claimed to have tested a nuclear weapon for the first time. These claims were quickly confirmed by U.S and Russian intelligence agencies. Since then, international negotiations have led to North Korea taking at least the first steps towards nuclear disarmament. This has been achieved through Six-nation talks involving North and South Korea, the U.S.A, Russia, China and Japan and through talks with the United Nations International Atomic Energy Agency. In a deal reached in February 2007, Pyongyang pledged to shut down its Yongbyon reactor within 60 days in return for 50,000 metric tons of fuel aid. A further 950,000 tonnes of fuel oil or an equivalent in economic aid will be sent to the North once it permanently disables its nuclear operations. The U.S also agreed to begin the process of removing North Korea from its list of state sponsors of terrorism. By July the Yongbyon reactor had been shutdown and all other North Korean nuclear facilities are scheduled to be declared and disabled by the end of the year.

The method of encouraging disarmament through diplomacy has also succeeded in persuading Libya to

disclose and dismantle its nuclear weapons programme. Libya had been under UN sanctions for a number of years, largely due its weapons of mass destruction programs and involvement with terrorist activities. But in recent years there has been a difference in the diplomatic mood. After Libya renounced terrorism and agreed to pay compensation to the victims of the Lockerbie bombing of 1988, the UN lifted its sanctions against the country. In 2004 Libyan leader Col. Gadhafi announced his commitment to dismantle all weapons of mass destruction in his country and to allow full inspections. Gadhafi's decision is thought to have been largely influenced by his desire to improve Libya's economy and also for his country to come out of the diplomatic cold. This could not be achieved without the removal of sanctions, and for this he gave up his country's weapons programme. These examples show that the use of international diplomacy would be a viable, as well as the most desirable, method to pursue if Britain was faced with the scenario of an unfriendly country developing nuclear weapons. Both examples illustrate that these methods are often slow, and can take many years to get results.

At the end of the day, if the country in question refuses to respond to diplomatic pressures, there are still a number of non-nuclear alternatives available to Britain. It could turn to the use of conventional military weapons, e.g. seeking to disable the nuclear weapons facilities of the country in question, by means of a series of precise air strikes, or by an invasion or small military incursion. The air strike option in a scenario of this kind has some precedents. In 1981 Israel bombed an Iraqi nuclear plant near Baghdad. Their justification for the attack was their belief that the plant was designed to make nuclear weapons to be used against Israel. The attack, though technically successful, was globally condemned. More recently, in October of this year, Israel targeted an air strike on a suspected nuclear reactor in Syria. Britain's air force would clearly be capable of undertaking such an action, though for political reasons it would probably chose to do so in cooperation with other countries which saw the nuclear facilities as a threat.

The military incursion/invasion option also has precedents. An obvious (if un-encouraging) example of this is the invasion of Iraq in 2003, led by the United States and backed by British forces. An official objective of the invasion was "to disarm Iraq of weapons of mass destruction." No such weapons were found. Furthermore the invasion sparked off the ongoing conflict, which has been disastrous for both Iraq and the forces that invaded it. It

has certainly not made Britain a safer place. After Iraq it is hard to imagine that Britain would wish to invade a country in response to a scenario of this type. It should be noted that either option requires extensive and accurate intelligence information, which was clearly lacking in the case of Iraq. In this context, conventional military force is a much blunter tool than diplomacy. It can spark off a widespread conflict within the country, and it can alienate the belligerents from its allies and the world community in general. Nevertheless it would be preferable to the use of nuclear weapons. A nuclear strike by Britain on the country in question would put Britain in more danger, and would destabilise the world situation. It might achieve the short-term objective of destroying the suspected nuclear weapons facilities, but in the longer term it would severely decrease the security of the country.

Diplomacy is clearly the most desirable option to pursue in this scenario. Negotiations may need to be backed by international pressure, (e.g. sanctions) in a carrot-and-stick mode. However, it is vital that the diplomatic approach should not be cut short, as happened in the run-up to the invasion of Iraq. If Britain finds itself in this scenario again it must commit itself fully to diplomatic means. Only when all diplomatic avenues have been exhausted, should the use of conventional arms be considered. Hopefully, after the disastrous invasion of Iraq, this lesson will have been learned.

3. Nuclear attack by an international terrorist organisation

So far the scenarios discussed have involved Britain being threatened by the nuclear capabilities of another country. However the rise of international terrorist organisations also brings with it the threat of a nuclear attack on Britain from one of these groups. In a scenario where Britain was attacked by a terrorist organisation using nuclear weapons, the options open to Britain would be extremely limited. A retaliatory nuclear attack could be considered. However, Britain would presumably feel itself unable to attack the country where the terrorists were based (even if that were known) unless it had convincing evidence that the country was in some way sponsoring the terrorist organisation. In some cases, the aim of the terrorists' attack might be to provoke a retaliatory attack, and would play into the terrorists' hands. The only realistic way of dealing with this scenario is to stop it occurring. This will require the intelligence services of Britain in cooperation with other countries to track terrorist activities extremely

accurately. In addition, a key preventative measure is the tight regulation of nuclear material, to minimise the risk of its falling into the wrong hands.

Conclusions

The three scenarios described above are all ones in which could conceivably be argued that Britain might be driven to use its independent nuclear deterrent. Its freedom to do so would, of course, depend on how independent the British nuclear weapon system actually is. The reality is that the Trident system is to a considerable extent dependent on the USA. We purchase our Trident missiles from the USA, the USA maintains the missiles, and provides us with satellite guidance. As Rodric Braithwaite puts it, “One day, the US Congress may decide to withdraw these facilities. It would certainly do so the moment we fired off a missile without American permission.” So our capacity for independent action is limited.

The first scenario, a surprise attack, might appear to give justification for a retaliatory nuclear attack in order to ensure the defence of the country. However, a retaliatory attack would not mend the destruction already caused to Britain, and might fail to prevent further destruction. It is much more important to focus on how to prevent Britain being attacked. In the second scenario, Britain becomes aware that a potentially hostile country possesses, or is developing nuclear weapons. A pre-emptive nuclear strike would be out of the question, for both pragmatic and political reasons. The best non-nuclear alternative would be the committed use of diplomacy to cool the situation and persuade the country to give up its nuclear weapons facilities. As a last resort, conventional arms could be used, either precision air strikes or an invasion force to destroy the nuclear facilities. If either of these methods were to be used, it would be crucial for the mistakes of the Iraq invasion not to be repeated. The third scenario, a nuclear attack on Britain by a terrorist organisation, gives Britain a very limited range of options. Britain would not be able to strike back at the country where the terrorists were based (even if known) unless it had compelling evidence that the country was sponsoring the group. The only sensible option is to prevent such an event from happening through the use of smart intelligence gathering and strict control of nuclear materials.

The analysis of each of these scenarios shows that the use of a nuclear weapon is unlikely to be an effective response. It might, however, be argued that the nuclear weapon does not actually have to be used – its mere exist-



Jayantha Dhanapala, Emmet Farragher, John Finney.

ence is sufficient to act as a deterrent. This argument is difficult to disprove, since it is hard to prove that a specific measure has deterred somebody from a course of action. However a counter-argument is that the British deterrent, rather than deterring nuclear warfare, is more likely to encourage other countries to develop their own nuclear weapons so they can feel more secure, thereby increasing international insecurity.

The analysis in this paper shows that Britain’s possession of nuclear weapons confers no real benefit in any of these scenarios. Wherever possible, those scenarios should be prevented from occurring, through a commitment to disarmament and diplomacy, with a resort to conventional warfare only when those have totally failed. All the money and faith that have been invested in the British nuclear weapon system have given us no more than an illusion of security. It may have given us a place on the top table of international politics, but that is not a valid justification for possessing such a devastating weapon. At first sight, it might appear that giving up our independent nuclear weapon would be a gamble. However, our analysis of these scenarios shows that in reality we are keeping our nuclear weapons system in an attempt to preserve our status in the world, not to defend the country.

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The British Pugwash Group launched the Joseph Rotblat Essay Competition in the 2007-2008 academic year to honour the centenary of the birth of Professor Sir Joseph Rotblat, KCMG CBE FRS, one of the founders of the Pugwash Conferences on Science and World Affairs and of British Pugwash. Rotblat was an ardent advocate of young people and believed that drawing upon their creativity and energy is a crucial step in creating a better world. This annual essay competition is designed to engage students in seeking solutions to the challenges of the nuclear age.

2007 International Student/Young Pugwash Conference

Bari, Italy, 20–21 October 2007

board@isyp.org • www.student-pugwash.org

Rapporteurs:

Parthiban Rajasekaran & Joelien Pretorius

This report summarizes the proceedings and outcomes of the 5th annual International Student/Young Pugwash (ISYP) Conference, held in Bari, Italy from 20 to 21 October 2007. The 20 students in the working group discussed topics that originated in papers prepared for possible publication in the ISYP Journal at www.scienceandworldaffairs.org. This document is the report of the presentations and discussions from the working group but its content is the sole responsibility of the rapporteurs.

We are grateful for the opportunity to share our thoughts with the Pugwash Conferences on Science and World Affairs. It is our hope that this report will enrich the ideas and actions of the entire Pugwash Community.

The threats faced by humanity in the 21st Century are interrelated, complex, and not easily delineated into different categories. Climate change, a non-military and global threat, may well lead to localized, military confrontation. Likewise, no discussion of nuclear energy for development is complete without consideration of the proliferation risks. However, to order our deliberations we made a distinction between military and non-military threats, although we recognised that the two are often interrelated.

Military Threats to Security

In the area of military threats to security, discussions encompassed both regional and global issues. Papers were presented that evaluated and compared the security complexes and security architecture in three geographical areas of importance to the location and theme of the conference: Europe, the Aegean and the Middle East.

It was argued that European security architecture is well-developed through NATO, the European Security

and Defence Policy and the expansion of this architecture to Eastern European countries. This expansion has unfortunately coincided with an increase in armament production and acquisition.

Aegean disarmament prospects are related to the resolution of conflict between Turkey and Greece with the status quo maintained by Turkish and Greek soldiers on a divided Cyprus. The security conception in this area is still based on *realpolitik*, but impending Turkish EU membership may help transform this conception to improve prospects for disarmament.

The security complex in the Middle East is characterized by different faultlines: that between Israel and Islamic countries, between Sunnis and Shias and lastly, countries sympathetic and not sympathetic to the West. The institutions of security in the Middle East are weak compared to those of Europe owing to shifting alliances between states and the absence of a regional institution of which Israel, Iran and the Arab states are members. The Arab League involves itself in the Israeli/Palestinian peace process, but its efforts are hampered by resources and membership limitations.

Looking at the security relationship between these areas, it was noted that the unbalanced nature of security architecture makes interaction in the area of defence between Europe and the Middle East difficult. The increase in armaments in both regions, especially the development of mid to long-range missiles, anti-ballistic missile systems and the doctrine of pre-emption as introduced by the US through NATO are impeding factors. It was argued that in the institutional sphere the European neighbourhood policy and the Arab League could provide mechanisms for confidence building and conflict resolution, but the participants noted the need for a Special Council for Europe and the Middle East

In terms of the relationship between the European Union and the Aegean security complex, it was argued that Turkish membership in the EU could extend the Euro-

pean security community to the Aegean and in that way socialise the Greek and Turkish military in cooperative, rather than realist notions of security. Shifting the goal posts of Turkish membership is not conducive to security in the region, although the view was expressed that Turkish membership of the EU may only internalise the Greek/Turkish split. The options for security assurances from the EU and economic integration of Turkey into the EU were explored.

To address security threats in these regional contexts, it is important to consider the global security situation, focussing particularly on the interactions between the US and other countries and their implications for international security.

An international norm prescribes nuclear exports for peaceful uses only and the Nuclear Suppliers Group (NSG) is critical to the maintenance of the norm. A US-India nuclear energy cooperation deal that would allow the export of nuclear technology and assistance to a country outside of the non-proliferation regime, would only challenge this norm if India failed to prove that imported nuclear material would not be diverted to military use. At a minimum India must separate its military and civilian facilities, negotiate IAEA safeguards and join the CTBT.

The US plan for Ballistic Missile Defence (BMD) was considered from a Canadian perspective. Canada has vetoed the use of NORAD for BMD purposes on the grounds that BMD may stimulate nuclear proliferation and the weaponisation of space. Non-participation may cost Canada in terms of security cooperation with the US, but participation could erode Canada's middle power status.

The group made several conclusions. First, there is a clear need for a political forum that would improve interaction, confidence, and predictability between countries in Europe, the Aegean and the Middle East. Second, India, Pakistan and Israel must be brought into the non-proliferation regime. As a first step this means that the NSG and the US congress should hold India to non-proliferation norms before the US-India nuclear deal is legitimised. Third, true security requires a longer-term vision that considers implications for future generations when faced with difficult security choices. Canada, in particular, must adopt a longer-term strategy when considering whether to join US BMD plans. Fourth, we recognize the need to overcome the impulse to justify one's own country's transgression of non-proliferation by referring to other's action. Being part of the problem will not solve the problem.

Non-Military Threats to Security

The human race faces grave non-military-centred threats to human security. Climate change, global pandemics, pollution, scarce water resources, and scientific illiteracy are some of the serious threats that are often overlooked in the shadow of terrorism and nuclear proliferation.

Shared resources necessitate a shared responsibility. Environmental security threats cross state boundaries and expose the weakness of a purely national approach to human security.

Climate change is an environmental threat of increasing concern. Its impact can already be seen in conflict areas such as Darfur, where desertification has reduced the availability of arable land and led to a humanitarian crisis. Proposed solutions to the climate change threat must take into account conflict between populations competing for increasingly scarce resources and the effects of climate-induced mass migration.

Increasing pollution of the marine environment demonstrates the international implications of domestic environmental actions. Land-based pollutants do not restrict themselves to the area in which they are used; instead they are carried to the marine environment through domestic water bodies. The pollution therefore does not respect state boundaries and must be treated as a threat to the global environment and to human security. There are well-established international norms governing the marine environment and freshwater areas; these must be synchronized to take into account the interrelationship between the two systems.

The effects of conflict in resource scarce areas can be demonstrated in specific regional contexts. The barrier built by Israel along the disputed boundary with the West Bank illustrates the environmental impact of military decisions. The fence is either blocking or redirecting the natural flow of water bodies across the borders. This interruption can affect the availability and quality of water in these areas.

It is clear that global threats, especially those affecting the environment, require global solutions. It has been suggested that the existing Responsibility to Protect doctrine, which suggests that the international community has a duty to intervene in domestic affairs to protect human rights, be extended to environmental security. However, there appears to be great potential for abuse of the Responsibility to Protect doctrine as applied to environmental issues. There are concerns that it could be used to deny developing nations, in particular China and India, access to the energy needed to compete on the world stage.

Increasing antibiotic resistance represents an overlooked threat to human security. Bacterial infections resistant to one or more antibiotics, known as “superbugs”, pose a serious threat to global health. The high cost and lengthy development timescale involved discourage pharmaceutical companies from investing in antibiotics to counteract these superbugs. Recombinant genetic technology, better management practices and global public education on prudent use of antibiotics are necessary to improve the situation.

Religious non-state actors play important roles in supplanting, supporting, or contesting how states provide for the welfare of their populations. This means that, while religion is often construed as a threat to human security and a source of conflict, it can also be used to promote human security. This brought us to a discussion of the relationship between religion, identity and terrorism.

Al-Qaeda and the Taliban are often and unhelpfully conflated by policymakers in the West. The Taliban reject modernity and what they see as the corrupting influence of reason, and are essentially non-political in character. Al-Qaeda, by contrast, is an explicitly political movement which embraces modern technology; unlike the revivalist Taliban, it espouses violent revolutionary change. The failure of Western policy to differentiate between these

two very different groups is indicative of a greater failure in the region; the inability of policymakers to differentiate between disparate groups and ideologies is a serious impediment to any attempts to create regional security.

How do we address these threats? A U.S. group is developing a multi language glossary of military security terms as a “Track II” diplomacy initiative. This programme identifies and describes terms in the nuclear security vernacular of China and the US to serve as a resource for better technical understanding, confidence building and eventual negotiation between these two countries in this area. The increasing intersection of scientific and political issues necessitates improved education. A France-based initiative encourages high school children in deprived areas to consider science as a career. Addressing the drop in science enrolment while encouraging the use of science education as a tool for social justice increases human security. Finally, there is a need for mediators and translators who could help the military, business, scientists and ordinary people to communicate and build a humane and liveable world. It is in this capacity that we see the greatest role for organizations such as Pugwash. By bringing together those from different backgrounds, ideologies, and regions, we hope to create an environment in which it is truly possible to remember our humanity.



Jayantha Dhanapala and Robert Hinde with members of UK Student Pugwash

Prof. José Leite Lopes (1918–2006)

Prof. José Leite Lopes, born October 28, 1918 in Recife, Pernambuco, Brazil, died June 12, 2006 in Rio de Janeiro. He was a noted Brazilian theoretical physicist in the field of quantum field theory and particle physics.

Together with César Lattes, a young physicist from São Paulo who had achieved international notoriety due to his co-discovery of a new kind of nuclear particle, the pion (pi-meson), Leite Lopes was instrumental in creating in January 1949, in Rio de Janeiro, the Centro Brasileiro de Pesquisas Físicas (Brazilian Center for Research in Physics) (CBPF), a research center in theoretical physics (the first in Latin America).

In 1969, the new military regime in Brazil took away his political rights, he was dismissed summarily from the very Center he had created and he had to exile himself voluntarily to the USA (at the Carnegie Mellon University) and then to the Université Louis Pasteur, in Strasbourg, France.

From 1974 to 1978, Leite Lopes was appointed full professor with the Université Louis Pasteur, taking up the directorship of the Division of High Energy and the position of vice-director of the Centre de Recherches Nucleaires, a part of the Centre National de la Recherche Scientifique (CNRS).

He returned to Brazil in 1986, as the director of the Centro Brasileiro de Pesquisas Físicas. He was also an honorary president of the Brazilian Society for the Advancement of Science. Among many international and national honors and prizes, Leite Lopes received the 1999 UNESCO Science Prize and received the Great Cross of the Brazilian Order of Scientific Merit.

Prof. Leite Lopes was the first Brazilian to serve in the Pugwash Council. He attended his first Pugwash meeting in September 1967 in Ronneby, Sweden, and his final one was the 35th Pugwash Conference held in Campinas, Brazil in July 1985.

Air Marshal the Lord Garden KCB (1944–2007)

Trained as a physicist at St. Catherine's College, Oxford, Tim Garden joined the RAF and commanded a jet flying training unit, a Vulcan bomber squadron (responsible for delivering nuclear weapons) and a helicopter base. He took time out to obtain a postgraduate degree in international relations at Magdalene College, Cambridge, and became Director of Defence Studies for the RAF. He wrote two books: *Can Deterrence Last* (1984) and *The Technology Trap: Science and the Military* (1989). He spent eight years in the Ministry of Defence, finishing as Assistant Chief of the Defence Staff (Programmes).

His last job in the service was Commandant of the Royal College of Defence Studies. He was awarded a knighthood in 1994 and retired from the Air Force in 1996, with the rank of air marshal. In 1997-8 he was Director of the Royal Institute of International Affairs (Chatham House). He later became a visiting professor at Kings' College London and Indiana University, a Council member of

RUSI, and a patron of the Oxford Research Group. In July 2003 French President Jacques Chirac presented him the Chevalier de l'Ordre National de la Legion d'Honneur for his work on European defence issues. In 2004 he became a Liberal Democrat peer, their spokesman on Defence in the House of Lords, and later Convener of the All Party Parliamentary Group (APPG) on Global Security and Non-proliferation.

Tim Garden attended his first Pugwash workshop in 1999, in Castellón de la Plana, Spain on NATO and European Security. He also attended a 1999 workshop in Venice on Intervention, Sovereignty and International Security and the 50th Pugwash Conference, held in Cambridge, UK in August 2000. .

Tim died on August 9 and is survived by his wife, Susan, and their two daughters.

Sir Hugh Beach and Sandra Ionno Butcher

Academician Ivan Supek (1915–2007)

Academician Ivan Supek, a prominent Pugwashite, died following a hip fracture on March 5, 2007 at the age of 91. Academician Supek was a scientist, educator and promoter of science, a writer and public figure, in short, a renaissance person in the full sense of word. His limitations were in belonging to a small and poor country with only the rudiments of science and democracy in the early years of his life.

Just before the outbreak of World War II he studied modern quantum physics, working with top scientists in several leading European centers. War found him in Germany. Threatened by the Gestapo, he left his work with Heisenberg in Leipzig to join the partisans in occupied Yugoslavia. As a leftist and partisan, he was tolerated by Yugoslav communist leaders, although he always opposed the Bolshevik doctrine of party dictatorship, which, eventually, in the 1970s, made him an opponent of the system and a dissident

When the Yugoslav government decided to embark on the development of nuclear technology soon after the war, Ivan Supek succeeded in turning the Zagreb Institute Ruđer Bosković (1950) into an institute for fundamental research which, through openness and many scientific contacts with Western scientific centers, became a breeding center for modern science in Croatia and respected European science center, especially in theoretical and nuclear physics. Another great achievement of his was founding the international Inter-university Center in Dubrovnik (IUC), established in 1971 while he was a Zagreb University rector. With partnership of more than 200 Universities, IUC is a unique place for exchange of scientific, political and social ideas.

Supek deserves to be called the father of modern science in Croatia. After the disintegration of Socialist Yugoslavia and creation of the Republic of Croatia, he became a highly respected public figure, pleading for the democratic development of the new State. He was a candidate for the President of the Republic, and then became President of

the Croatian Academy of Science and Art from 1991-1997.

His early contact with leading European physicists immediately after the discovery of fission made him aware of the great danger to mankind from the possible military abuse of nuclear energy. This he made public in June, 1944 while still with Yugoslav partisans. Quite naturally he was close to Pugwash ideas on nuclear disarmament and was in contact with early Pugwashites. In April 1961 he attended the 4th meeting of the Pugwash European Group, followed by the 9th and 10th general Pugwash conferences held in Cambridge, UK (August 1962) and London (September 1962). In parallel he recruited Yugoslav scientists to create a Yugoslav Pugwash Group, which hosted the very successful 11th Pugwash general conference in Dubrovnik in 1963.

Supek attended a total of 21 Pugwash meetings, the last being the 43rd Pugwash Conference held in Hasseludden, Sweden in June 1993. His later years were predominantly devoted to writing, which ranged from science and philosophy of science to historical novels and politics. But he was also very active with the Croatian Pugwash Group, which sought to unify scientists and intellectuals for democratic reforms in Yugoslavia. He had a particular interest in stressing the need for ethical principles in science, and accordingly organized the 22nd *Pugwash Symposium: Science and Ethics*, in Dubrovnik in January 1975.

Another of the great figures from early Pugwash has left us. With sorrow we must accept the laws of time and nature. With great gratitude we recall his contributions to Pugwash. His life of exceptional creativity and highest ethical standards was dedicated to science, peace and humanistic ideals and will remain an example to generations.

Vladimir Knapp
Croatian Pugwash Group

Kodi Husimi (1909–2008)

Kodi Husimi, a Japanese physicist and Pugwashite, passed away peacefully in Yokohama, Japan, on May 8, 2008, from natural causes. He was active and full of curiosity to his very last days. Just a few months before his death he published an interesting introductory book on atomic physics.

Husimi was graduated from the University of Tokyo in 1933. After working as a research associate, he transferred to Osaka University, where he worked first on neutron experiments by using the Cockcroft-Wartton accelerator, then mainly on the theory of statistical mechanics. He served as Dean of Faculty of Science. He promoted plasma science in Japan and worked as the first Director of the Institute of Plasma Physics, Nagoya University from 1961. After retirement from the University in 1973, both Osaka University and Nagoya University conferred on him the title of Professor Emeritus.

His activity was not limited to research and education of physics. He was elected as one of the first members of Science Council of Japan, the governmental organization on science and society in 1949. He pioneered research and development on nuclear energy after the Japanese recovery of independence from the military occupation by Allied Powers in 1952. Kodi Husimi proposed three fundamental principles on peaceful use of nuclear energy: openness, autonomy and democracy. At the same time he pursued the abolition of nuclear weapons. His idea was supported and concluded as a statement by the Science Council of

Japan in 1954. These principles were adopted in the Fundamental Law on Peaceful Research and Development on Nuclear Energy. Thanks to Kodi Husimi, the military application of nuclear energy is strictly prohibited in Japan by this law.

Husimi was President of the Science Council of Japan in 1977 through 1982 and a member of the House of Councilors in 1983 through 1989. Then, following the dissolution of the Soviet Union, Husimi initiated a program to support academic collaborations between scientists in Japan and the former USSR. The program continued from 1992 to 1997 and encompassed a total of 103 projects and 431 scientists from the former Soviet Union.

Kodi Husimi was an active member in the Pugwash Conferences on Science and World Affairs. His first participation was at the 31st Pugwash Conference held in Banff, Canada in August 1981. He attended several more Pugwash meetings in the 1980s, and then the 45th Pugwash Conference held in Hiroshima in July 1995. He was a good friend of Jo Rotblat.

In addition to writing many professional articles, text books, and scientific and other essays, Husimi loved painting and *origami* (the art of folding paper into figures). He lived a happy long life supported by enthusiastic humanity.

*Michiji Konuma
Japan Pugwash*

Giuseppe (Beppe) Nardulli (1948–2008)

Prof. Giuseppe (Beppe) Nardulli, an Italian physicist, long-time member of Pugwash, and the main organizer of the 57th Pugwash Conference held in Bari, Italy in October 2008, died of cancer on June 26, 2008, at the age of 60. A former National Secretary of the Italian Union of Scientists for Disarmament (USPID), Beppe Nardulli first

attended a Pugwash meeting in October 1986, the workshop on *Conventional Forces in Europe*, held in Castiglione. He attended a total of eight Pugwash workshops and conferences in all, the last being the 57th Conference in Bari, which through his tireless efforts at organizing and fundraising, was a major success.

Pugwash Council for the 2007–2012 Quinquennium

EX-OFFICIO MEMBERS

President

Amb. Jayantha Dhanapala is a former Under-Secretary-General for Disarmament Affairs at the United Nations (1998-2003), and former Ambassador of Sri Lanka to the US (1995-97) and to the UN Office in Geneva (1984-87). He is currently Chairman of the UN University Council, a member of the Governing Board of SIPRI, and several other advisory boards of international bodies. He also has been a member of both the Canberra Commission (1996) and the WMD Commission (2006).

Secretary-General

Prof. Paolo Cotta-Ramusino is Secretary General of the Pugwash Conferences (since August 2002) and Professor of Mathematical Physics at the University of Milan. He is the former Director of the Program on Science, Technology and International Security, Landau Network-Centro Volta, Como, and former Secretary General of the Union of Italian Scientists for Disarmament (USPID).

Executive Director

Dr. Jeffrey Boutwell is Executive Director of the Pugwash Conferences on Science and World Affairs, former Associate Executive Officer at the American Academy of Arts and Sciences in Cambridge, and former Staff Aide at the National Security Council in Washington, DC.

Former Secretary General

Prof. Francesco Calogero is Professor of Theoretical Physics at the University of Rome "La Sapienza". Formerly, he was Secretary General of Pugwash (1989-1997), Chair of the Pugwash Council (1997-2002), and a member of the Governing Board of SIPRI (1982-1992).

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Amb. (ret.) Ochieng Adala, of the Africa Peace Forum (APFO) in Nairobi, Kenya, is former Permanent Representative of Kenya to the United Nations in New York (1992-93), former Deputy Secretary/Director for Political Affairs, Ministry of Foreign Affairs and International Cooperation (1988-92), and

former Ambassador of Kenya to the Arab Republic of Egypt, the Kingdom of Morocco, Algeria and Tunisia.

Amb. Sergey Batsanov is Director of the Geneva Office of International Pugwash, member of the Pugwash CBW Steering Committee, and member of the International Advisory Board of the Geneva Centre for the Democratic Control of Armed Forces (DCAF). He is former Director of Special Projects at the Organization for the Prohibition of Chemical Weapons (OPCW) in The Hague, and former Representative of the USSR/Russian Federation to the Conference on Disarmament, Geneva (1989-93).

Dr. Adele Buckley is a physicist, engineer and environmental scientist, and past Chair of the Canadian Pugwash Group. She was formerly Vice President of Technology & Research at the Ontario Centre for Environmental Technology Advancement (OCETA) in Toronto, Ontario, Canada.

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Prof. John Finney is Professor of Physics in the Department of Physics and Astronomy at University College London, Deputy Chairman of the British Pugwash Group, and Chair of the WMD Awareness Programme. His former positions include: Professor of Crystallography at Birkbeck College in London; Chief Scientist at the ISIS Facility of the Rutherford Appleton Laboratory; and Science Coordinator for the European Spallation Source Project.

Prof. Galia Golan-Gild is Professor of Government at the Interdisciplinary Center (IDC) in Herzliya, Israel, and Professor Emerita in the Department of Political Science at The Hebrew University of Jerusalem, where she was also Darwin Professor of Soviet and East European Studies, and Chair of the Department of Political Science.

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Prof. Pervez Hoodbhoy is Professor of Nuclear Physics at Quaid-e-Azam University in Islamabad, Chairman of Mashal Books, commentator on political affairs in Pakistan, an independent maker of documentary films for popularising science in Pakistan, and an activist for peace and social reform.

Dr. Peter Jones is Associate Professor in the Graduate School of Public and International Affairs at the University of Ottawa, Ontario, Canada. He was formerly: Senior Policy Advisor, Security and Intelligence Secretariat, Privy Council Office, Ottawa (The Prime Minister's Department), Project Leader, Middle East Project, Stockholm International Peace Research Institute (SIPRI) and Desk Officer in the Arms Control and Disarmament Division Department of Foreign Affairs and International Trade, Ottawa.

Gen. (ret.) Dr. Mohamed Kadry Said is Head of the Military Studies Unit and Technology Advisor at the Al-Ahram Center for Political and Strategic Studies, Al-Ahram Foundation in Cairo, Egypt, and Member of the Committee of Strategic Planning of the Egyptian Council of Space Science and Technology.

Dr. Mustafa Kibaroglu is Associate Professor (non-proliferation, arms control & disarmament matters) in the International Relations Department of Bilkent University, Ankara, Turkey, and was formerly with the International Security Program & Project on Managing the Atom

Pugwash Council *continued*

at the Belfer Center for Science and International Affairs, John F. Kennedy School of Government, Harvard University.

Mr. Sverre Lodgaard is former Director of the Norwegian Institute of International Affairs (NUPI) in Oslo, former Director of the United Nations Institute for Disarmament Research (UNIDIR) in Geneva, and former Director of the Peace Research Institute of Oslo (PRIO).

Prof. Saideh Lotfian is Associate Professor of Political Science at the University of Tehran. She was formerly Deputy Director of the Center for Middle East Strategic Studies (1996-2002), and Visiting Iranian Fellow at St. Antony's College, Oxford University (2003).

Dr. Riad Malki is Minister of Foreign Affairs and Minister of Information of the Palestinian National Authority. He is also Director General of Panorama (The Palestinian Center for the Dissemination of Democracy and Community Development) in Ramallah, West Bank, Palestine, and formerly taught at BirZeit University School of Engineering.

Amb. Miguel Marin-Bosch is Professor of Disarmament and International Security, President of Desarmex (an NGO in México, D. F.), and a former Deputy Foreign Minister of Mexico.

Prof. Amitabh Mattoo is Vice Chancellor of the University of Jammu, Jammu, J&K, India, a Member of the Prime Minister's Task Force on Global Strategic Developments, and Professor of Disarmament Studies at the School of International Studies, Jawaharlal Nehru University (JNU), New Delhi. He was formerly a Member of the National Security Advisory Board of India.

Dr. Steven Miller is Director of the International Security Program of the Belfer Center for Science and International Affairs at Harvard University's Kennedy School of Government, Editor-in-chief of the quarterly *International Security*, and Co-chair of the US Pugwash Committee. Formerly, he was a Senior Research Fellow at the Stockholm International Peace Research Institute (SIPRI), and

taught defense and arms control studies in the Political Science Department at the Massachusetts Institute of Technology.

Prof. Marie Muller is Dean of the Faculty of Humanities, former Director of the Centre for International Political Studies at the University of Pretoria, former Council Member of the Academy of Science of South Africa, and former (Founding) Chair of the Pugwash South Africa Group.

Prof. Götz Neuneck is a physicist working on international security issues and technical aspects of arms control. He is currently Project Leader of the "Interdisciplinary Research Group Disarmament, Arms Control and New Technologies" at the Institute for Peace Research and Security Policy (IFSH) in Hamburg. He teaches in the postgraduate Master's Programme "Peace and International Security", is a Member of the Council of the German Physical Society (DPG), and Deputy Chairman of the Working Group "Physics and Disarmament" in the DPG.

Dr. Alexander Nikitin is Director of the Center for Political and International Studies (CPIS), Vice Chairman of the Russian Pugwash Committee of Scientists for Disarmament and International Security, Professor at Moscow State Institute for International Relations, President of the Russian Political Science Association, Director of the Center for Euro-Atlantic Security of MGIMO University, and Board Member of the Russian Academy of Political Sciences.

Mr. Niu Qiang is Secretary General and Senior Researcher at the Chinese People's Association for Peace and Disarmament (CPAPD) in Beijing, China.

Gen. Pan Zhengqiang is Deputy Chairman of the China Foundation of International Studies, a retired Major General in the Chinese People's Army, and former Director of the Institute of Strategic Studies.

Acad. Yuri Ryzhov is President of the International Engineering University in Moscow, Chair of the Russian Pugwash Group, Academician of the Russian

Academy of Sciences, former Member of the Presidential Council of the Russian Federation, and former Ambassador Extraordinary and Plenipotentiary of Russia to France.

Prof. Ivo Slaus is Director of the World Academy for Southeast Europe Division, President of Croatian Pugwash, a Member of the Club of Rome, and a Fellow of the Academia Europea. Formerly, he was a Member of the Croatian Parliament, Chairman of the Parliamentary Subcommittee on Science, Higher Education & Technology, Professor of Physics at Rudjer Boskovic Institute, and Foreign Secretary of the Croatian Academy of Sciences & Arts.

Dr. Mark Byung-Moon Suh is a South Korean political scientist, Chairman of the Corea Trust Fund, and a Visiting Scholar at the Institute for Peace Affairs (IPA) in Seoul. He was formerly a Senior Researcher and Korean Co-ordinator of the Free University of Berlin in Germany, President of the Korean Pugwash Group, and member of the Presidential Advisory Council on Peaceful and Democratic Unification of Korea.

Dr. Tatsujiro Suzuki is Visiting Professor at the Graduate School of Public Policy (GRASPP) at The University of Tokyo, an Associate Vice President at the Socio-economic Research Center of the Central Research Institute of Electric Power Industry (CRIEPI) in Tokyo, and Co-Founder of Peace Pledge in Japan. He was formerly Professor at Keio University Graduate School of Media and Governance (April 2001-March 2004), Visiting Associate Professor in the Department of Quantum Engineering and Systems Science at the University of Tokyo.

Dr. Bob van der Zwaan is Senior Scientific Researcher at the Energy Research Center of the Netherlands (ECN) in Amsterdam and at Columbia University's Earth Institute in New York. He has held former research positions at the BCSIA at Harvard University, IVM at the Vrije Universiteit Amsterdam, CISAC at Stanford University, IFRI in Paris, and CERN in Geneva.

Did you know?



That Pugwash was the subject of US Senate Internal Security subcommittee reports in the 1960s?

Calendar of Future Pugwash Meetings

4 November 2008 London, UK	Centenary of Joseph Rotblat's birth
13-16 November 2008 Zagreb, Croatia	<i>Advanced Research Workshop on Issues of Independent Scientific Input into WMD Issue</i> (UK and Croatia Pugwash)
21-22 November 2008 Antwerp, Belgium	<i>Workshop on Nuclear Weapons in Europe</i> (Netherlands Pugwash)
29-30 November 2008 Geneva, Switzerland	<i>29th Pugwash Workshop on Chemical and Biological Weapons</i>
9-10 December 2008 London, UK	UK Premiere of Canada Film Board Documentary Film on Joseph Rotblat and Pugwash, <i>The Strangest Dream</i> , and Symposium on Nuclear Weapons
17-21 April 2009 The Hague, Netherlands	<i>58th Pugwash Conference on Science and World Affairs</i>

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