

TECHNOLOGY AND HUMAN SECURITY

**Canadian Pugwash Group Workshop
Thinkers' Lodge, Pugwash, N.S., July 19, 2002**

Rapporteur's Report by Dr. Erika Simpson

A Canadian Pugwash Group Workshop at Thinkers' Lodge, Pugwash, N.S., July 19, 2002, focused on technology and human security. The workshop, attended by 25 persons and held in conjunction with the Pugwash Annual General Meeting, prepared for the 53rd Pugwash Conference on Science and World Affairs, "Advancing Human Security: The Role of Technology, Ethics and Politics," to be hosted by Canada in Halifax, July 16-22, 2003. The Workshop featured keynote speaker, Jill Sinclair, Director General, International Security at Canada's Department of Foreign Affairs and International Trade (DFAIT), as well as four workshops reflecting human security themes. The opening session was chaired by Ambassador (ret.) Geoffrey Pearson, President of the United Nations Association in Canada. Senator Douglas Roche is Chairman of the Canadian Pugwash Group.

The keynote speaker, Ms. Sinclair, is the Director General of the International Security Policy Bureau of the Department of Foreign Affairs and International Trade. She has served abroad in Prague and Havana. In her presentation she highlighted general and specific objectives and concerns of the Dept of Foreign Affairs and offered her personal views regarding issues surrounding the topic of "Human Security and Technology" and suggested roles and initiatives that could be undertaken by interested individuals, non governmental organizations such as the Canadian Pugwash Group and the international community. She suggested that the Group, with its unique base in science, should pay special attention to emerging issues that bring science and security together. In this regard, she highlighted the importance of the prevention of the weaponization of outer space and the need for international attention – by governments and leading NGOs such as Pugwash – to this crucial issue.

In her wide ranging overview of the many traditional and 'less traditional' human security challenges, Ms. Sinclair stressed the importance, in the human security context, of letting each country determine for itself the specificity of its human security agenda. She cited the example of the different range of interests and concerns found within the group of countries formed by Canada known as the Human Security Network. While Canada was stressing issues such as small arms, South Africa was concerned with HIV-AIDs; Thailand was concerned with the problem of drugs and the absence of effective social security nets for those hit by economic recessions. In this way, countries and regions were defining human security in terms that resonated with them; as a 'people centred' approach to enhancing individual well being and security.

Ms Sinclair emphasized the importance of conceiving of new technologies to deal with diverse human security problems and she also underlined the importance of reaching out to engage new and diverse communities in this effort – i.e. industry, the corporate and business world – to develop solutions that would appeal to their enlightened self-interest. In this regard she cited the example of the synergy between Canada's diplomatic initiative to ban 'conflict diamonds' and the new technology developed in Canada for diamond finger printing that would enable an effective political solution to be found to breaking the link between the profits from illicit diamonds and the fuelling of conflict in diamond rich environment such as Sierra Leone.

While Ms. Sinclair acknowledged that the links between technology, science and advancing human security were extensive, she thought it worthwhile to focus the Group's attention on three issues where the links between technology and human security were particularly acute:

the Comprehensive Test Ban Treaty; the weaponization of outer space and issues surrounding international treaty compliance and verification.

As Ms Sinclair pointed out, the CTBT was a global effort that effectively engaged the scientific community to develop the most sophisticated and comprehensive verification system heretofore possible. While political debate delayed CTBT negotiations and conclusion of the treaty for many years, scientific work and experimentation with verification systems and technologies continued apace.

This scientific work paved the way for the successful negotiation of the treaty - once political will had been engaged. While the final result was a treaty with an entry-into-force formula that, in effect, has caused it to be still-borne, this was a failure of political will rather than of science. The CTBT was a good example of the contribution that scientific effort could make to laying the groundwork for successful treaty negotiations. She suggested that an important task for a group like Pugwash, with its strong scientific background, would be to contribute similar scientific solutions to security challenges.

Citing an emerging area of concern – the announced plans by the U.S. to engage in research to weaponize space, she suggested that Pugwash might engage its scientific expertise and understanding to study the issues, marshal arguments and work to persuade governments as well as users of space-based technologies (e.g. satellite users, communications companies) to avoid the weaponization of space. She suggested that the arguments had not yet been persuasively made to these communities regarding the risks to their interests and enterprises in introducing weapons into this environment. She advocated a strategy of engaging the U.S. – from the administration to the citizens - in a systematic effort to debate these issues and influence thinking which could assist broader international efforts to develop a legal regime prohibiting the weaponization of space.

Ms Sinclair stressed in particular the need, in the near and long term, to use technology to develop effective solutions to meeting treaty compliance concerns. The U.S. had articulated many concerns about multilateral treaty regimes and compliance - many were valid and deserved serious consideration. She suggested that we try to move beyond the usual appeal to multilateralism and values and work to find ways of improving treaty compliance and enhancing the confidence that governments could have in multilateral arms control and disarmament regimes which, to date, had been coming under challenge by the U.S. in particular, because of compliance and verification concerns (e.g. CTBT, BTWC.)

She pointed out that Canada's multilateralist approach continues to make security sense for Canada and the international community because it protected and promoted Canada's interests and contributed to building a safer and more secure world. She believed that the more comprehensive human security approach to the international security agenda could contribute to seeing security challenges in new ways and, thus, finding new solutions to meeting those challenges.

In concluding, she returned to the theme of human security and technology and quoted from a Jordanian diplomat: "Science and technology have given human beings powers that far outstrip their collective good judgement" and noted the tendency in some, in face of the overwhelming security challenges of today, to give up. She cited Senator Roche who had often said "We cannot allow ourselves the luxury of despair." In Ms. Sinclair's view, we could engage the very best of scientific and technological thought in the pursuit of real human security for all people and suggested that "Pugwash, is the very best place to start."

During the Group's extensive discussion following Ms. Sinclair's presentation, a wide variety of questions and comments were raised. For the sake of clarity, these have been grouped here into five major themes:

MAJOR THEMES

1. The militarization of outer space and the development of National Missile Defense

One of the principal themes brought forward during the discussion concerned the underlying objectives and implications of US plans to build a National Missile Defense (NMD) and extensive Theatre Missile Defenses (TMD), particularly for the peaceful uses of outer space and for Canadian defence and security. It was argued that Canada was 'fence-sitting' on the NMD issue, while others pointed out that those opposed to fence-sitting tend to be NMD proponents. The government representative from DFAIT suggested that taking more time to reflect and think about the issue was wise rather than misguided, especially as the United States was developing more concrete ideas about the methods, timeframes, and deployment of NMD, and undertaking a global tour to assess different views of its plans. Some pointed out, too, that since public opinion was divided, Canadian politicians would be reluctant to take a stand in the near future.

2. The merits and demerits of 'relentless' or 'constructive engagement'

Many emphasized the advantages of pursuing a Canadian strategy of 'relentless,' 'incessant' or 'constructive engagement', especially when dealing with the current American administration's defence plans. Participants noted as well the demerits of devoting considerable energy to a policy of constructive engagement and quiet diplomacy, rather than 'megaphone diplomacy'. In the final analysis, there was always a danger that government departments, such as DFAIT and DND, would capitulate to American plans given issue linkage (e.g. free trade, soft wood lumber negotiations, and Canada's membership in NATO). On the other hand, outright withdrawal from NATO and declaratory (self-righteous) criticism of the US would also serve little purpose, especially given the short-term effect of such strategies. The key would be to recognize "when to push publicly and when to engage." Learning to use the concepts, vocabulary, and pre-emptive tactics synonymous with a strategy of 'unrelenting engagement' could pay dividends.

3. Avoiding a more divided, dangerous world

There was considerable debate about Canadian defence and security priorities, and how these contributed to international cooperation in a rules-based system. Some members of the Group argued that human security priority areas for Canada should remain focused on conflict prevention, protection of civilians, peace operations, and rapid deployment, particularly through the UN. Others maintained that Canada's contributions to NATO's peacekeeping troops in IFOR and more-recently to Afghanistan constituted a legitimate (or illegitimate commitment) to peace. Several general principles were enumerated by participants regarding Canada's role, namely: Canada should improve its current status of 33rd on the list of UN troop contributors; the Department of Defence should act swiftly to close the commitment-capability gap by earmarking more personnel to UN duties and acquiring long-range capabilities suitable to peace operations; and the Canadian government should be careful to continue its tradition of providing personnel for UN missions. There was also general agreement that Canada should not depart from its longstanding commitment to multilateralism and the U.N.

4. Controlling the scientific community's research agenda

Members agreed that while scientific technology could advance human security, scientific knowledge could also destroy humanity's future. Just as individual scientists were asked to create the original nuclear weapon, individuals might now be persuaded by rogue states, or non-state actors such as terrorists, to help transform nuclear, biological, or chemical materials into bombs. As a society, should we allow scientists to follow their own research interests and pursuits? Or should we present them with problems to solve that society wants them to address? Moreover, the list of human security problems that civil society and scientists should be concerned about will grow, especially given global warming, biotechnology's implications, stem cell technology, and issues concerning genetically-mutated foods.

5. Maintaining and enhancing international regimes and treaties

In its discussion, Group members spent considerable time overviewing recent American plans to withhold support from different international regimes, such as the CTBT, the BTWC, and the Ottawa Land Mines Process, as well as to 'unsign' from various international treaties such as the ABM Treaty and the International Criminal Court. Clearly, there are minor technical and political difficulties with all these types of formal and informal regimes. In the end, however, the most effective strategies for achieving a more secure, peaceful world will be those that enhance, rather than undermine, modes of international cooperation. Indeed, there was general unease about the unilateralism of the U.S. and the heedless manner in which it seems to be damaging or discarding agreements and regimes of great import and meaning to others.

WORKSHOPS

The afternoon session featured four workshops relating to technology and human security which were conducted by various experts: disarmament (Senator Douglas Roche); conflict (Dr. Walter Dorn); the environment (Dr. Adele Buckley); and development (Ms. Stephanie McCandless Reford).

Disarmament (presented by Senator Douglas Roche)

Senator Roche argued that technology is a 'two-edged sword' which makes possible a treaty like the CTBT, yet also renders new types of Weapons of Mass Destruction (WMD) possible. Scientific knowledge and technology, on their own, cannot solve all types of political problems. Therefore, whereas Pugwash consists of many 'pure' or 'hard' scientists, the contribution of other types of scientists—and more importantly, human will, determination, and the human desire to abolish nuclear weapons in the 21st century, are paramount. The central goal for Pugwash must remain the elimination of the scourge of nuclear weapons, including their elimination from the stockpiles, minds, and hearts of the Nuclear Weapons States (NWS), especially the P5 (e.g. the US, Russia, China, France, U.K.)

In keeping with Canada's position as the United States' closest neighbour, it is important to discourage the US from pursuing its current 'hyperpower' policy. For example, the Moscow treaty, which purportedly reduced (but actually merely redeployed thousands of strategic nuclear weapons), needs to be criticized for its 'sleight-of-hand' disarmament. The US government's reluctance to live up to its Article VI commitment to the Non Proliferation Treaty is also alarming; as the UN Under-Secretary General for Disarmament points out, the NPT is being ignored, bypassed, and thus eroded.

Senator Roche also expressed dismay that the NWS have refused to start down the path recommended by the New Agenda Coalition (which seeks the total elimination of nuclear weapons through a 13 Step program); that the U.S. and Russia have withdrawn from the ABM

Treaty; that the NWS refuse to support the CTBT; and that evidence is mounting the U.S. may resume nuclear testing and seek 'full-spectrum dominance'. What is to be done? Senator Roche's long history of involvement in disarmament (as Canada's Ambassador for Disarmament at the U.N. and as Chair of the Middle Powers Initiative) taught him that the moral and legal arguments against nuclear weapons are most persuasive. The abomination of nuclear weapons and the horrors of Hiroshima and Nagasaki are the moral foundation supporting arguments for a ban—but the legal arguments (e.g. as put forward by Charles Moxley Nuclear Weapons and International Law in the Post-Cold War World) and as contained in the Model Nuclear Weapons Convention will provide the necessary legal basis for the elimination of nuclear weapons.

Finally, the Senator acknowledged that Canada is caught in a massive contradiction between its loyalty to the UN and its commitment to NATO. The UN seeks to eliminate nuclear weapons while NATO's Strategic Concept claims they are 'essential'. Alone, Canada cannot make a significant contribution. Yet in partnership with other like-minded states, especially through the New Agenda Coalition and the Middle Power Initiative—in a process reminiscent of the Ottawa Land Mines Process—Canada could help make significant progress toward a nuclear weapon-free world.

Conflict (presented by Dr. Walter Dorn)

Dr. Dorn reminded the audience of the 1955 Russell-Einstein manifesto which counselled us to "remember your humanity and forget the rest.... If you cannot, there lies before you the risk of universal death." While one of the ongoing tasks of Pugwash has been to bear in mind the perils of technology, at the same time technology holds considerable promise to help solve humanity's security challenges. Many will be discouraged in the present tense climate, due in part to September 11 and the threat of nuclear war between India and Pakistan, but we have a great deal to be thankful for in comparison to the tense and dangerous 1980s. The Cold War standoff has ended, the UN Security Council is no longer paralysed, and proxy wars are no longer being conducted in Africa and Asia. Clearly Pugwash played an important role, along with leaders like Mikhail Gorbachev, to end the Cold War and engineer a 'common security' approach.

Dr. Dorn explained that Canada was the first country that had the capability and knowledge to manufacture or acquire nuclear weapons, yet decided to renounce such capability. Canada's history of delegitimizing nuclear weapons could be relevant to persuading other countries to follow our example. At the same time, we must keep in mind that other agents of mass destruction (e.g. anthrax, biological weapons, chemical weapons), as well as new types of conventional weapons (e.g. small arms) are being developed and are already killing thousands of people. Pugwash needs to remember that nuclear weapons are "the ultimate evil." However, other types of weapons also need to be controlled and abolished.

Turning to his recommendations for ameliorating conflict, the speaker suggested that technology could usefully serve to end disputes peacefully (e.g. it could be used to help gather intelligence, monitor ongoing disputes, detect illicit smuggling, etc.). New technologies are constantly being developed to improve aerial reconnaissance, enhance satellite communication, and protect peacekeepers. Other useful initiatives would include an 'Open Skies' agreement (similar to President Eisenhower's original proposal); a UN Rapid Reaction capability; and a strengthened Stand-by High Readiness Brigade (SHIRBRIG).

The Environment (presented by Dr. Adele Buckley)

Dr. Buckley's presentation focused primarily on four environmental factors affecting human security: population pressure; development; global change; and conflict & terrorism.

Population pressure entails all the trends in human population growth affecting consumption and the earth's biological productivity (e.g. experts generally agree the world's population will level off at about 10 billion by 2050 but we are already living beyond the planet's capacity for biological productivity). Consequently, political stability will be affected by resource competition and 'environmental refugee-ism'. Access to water could be the fundamental issue of the 21st century given current needs, trends and deficiencies. But the developed countries are not renewing their aging water infrastructure nor are the developing countries able to devote more funds to treating and obtaining more water. New methods of conservation, forest and watershed management, pollution prevention, and global waste management will be needed.

Turning to other environmental factors that affect human security, Dr. Buckley focused on growing energy security needs and global warming. Examples illustrating the problem are that the earth's warming will continue—it is predicted that it will rise by 2-8 degrees Celsius—yet in 2050, 40 percent of the world's consumption will still be reliant upon fossil fuel. One option is nuclear power, but nuclear waste promises to be a major human security issue given that the U.S. is the only country with a proposal to establish a nuclear waste dump site. Nuclear plants, under terrorist attack, could release radioactivity putting high density population areas in danger. With nuclear energy comes the associated production of weapons; moreover, preventing acquisition by terrorists of nuclear materials is an intractable problem. Nevertheless, coal (the alternative in India and China) results in local smog and global pollution problems. New methods of energy conservation, alternative technologies, and creative political and organizational initiatives will be needed.

Clearly, the challenges facing humanity in this century are unprecedented. Is there technology to support change and adaptation? Dr. Buckley asserted that new technology for management will be needed, including a 'science of integration' and a vastly-improved structure of global environment and development institutions. Given that human changes to the earth's system do not operate in simple cause-effect relationships, we can expect that a single type of change may trigger a large number of responses, which then reverberate or cascade through the system. Evidently, the types of large-scale global changes that have been outlined will exert an interactive and cascading effect on human security. Therefore, it is most important that we recall the Russell-Einstein manifesto's admonition to 'remember your humanity and forget the rest.'

Development (presented by Ms. Stephanie McCandless Reford)

Ms. McCandless-Reford worked with young people for forty years to bring world affairs to high schools and teachers. This experience led her to reflect upon the meaning of 'development'. Development can mean raising money for good causes, inciting growth and expansion, increasing GDP, or working to increase a country's standing on the U.N.'s human development index. She concluded that development relates to all these topics but most importantly, Canadians need to recall they are 'internationalists'. It is our responsibility to restore a sense of hope, especially since the powerless feel such a painful sense of great opportunities lost. Unfortunately, the great hope and promise of democracy has declined, the 1948 Declaration of Human Rights has faded, and while 40 percent of the world lives in relative democracy, the situation has never been worse.

The speaker spoke passionately about the leadership potential of children as our greatest resource. We need 'hope of leadership' for the next generation and in order to do that, we need a leadership building initiative on a global scale. "Be the change you want to see in the world" said Ghandi, leading Ms. McCandless Reford to outline for the Group her proposal to initiate a 'Global Youth Leadership Training Initiative'. Her initiative, in the form of a letter

written to the UN Secretary-General, is intended to inspire youth to recognize that their ideas and energies are valued by the leaders of today.

A first step to establish this initiative would be a conference to bring together committed leaders of today who share the view that youth are a resource, not a problem. From this conference, a series of youth leadership goals could emerge, as well as recommendations for infrastructure and support for coordination in participating countries, and from within the UN itself. The speaker outlined many of her ideas to help establish Youth Leadership Training in a detailed proposal attached to her letter to the UN Secretary-General. She concluded with the suggestion that a meeting take place between UN representatives and selected youth training program leaders to discuss the merits of the concept, the direction it should take, and the requirements to make it effective.

GENERAL DISCUSSION

During the Group's general discussion following the workshops, a broad range of questions and comments were put forward. For the sake of clarity, these have been grouped here into four major themes, generally reflecting the subjects of the workshops:

1. Disarmament

The near-disappearance of the anti-nuclear movement and the absence of an informed and concerned public were sources of general concern, if not discouragement. Many of the dark clouds on the horizon relating to nuclear weapons were directly, or indirectly, traced to the policies and behaviour of the US, and more immediately to the attitudes and approaches of the Bush administration. Consequently, the Group spent considerable time discussing the merits of returning to 'moral considerations' and a strategy of 'constructive engagement' when dealing with American and Canadian elected officials, as well as the media.

2. Conflict

It was suggested that new ways of thinking, including 'horizontal management' and 'holistic thinking' could help establish the new structures that are needed to eliminate war as a social institution and produce creative policy-making within government, academe, and NGOs. How do we engage the US in a broader discussion beyond merely the prevention of terrorism? Perhaps more attention needs to be paid to understanding the root causes of war and terrorism in human behaviour. It was asserted that nuclear weapons cannot be eliminated in a vacuum. It will require a broad 'architecture' addressing many related matters, including the development of more international institutions and the strengthening of international law. The problems that concern Pugwash members are inter-related and wide-ranging; the focus on eliminating nuclear weapons should be Pugwash's primary, but not its sole objective.

3. The Environment

There was very wide agreement within the Group that mitigating the effects of negative environmental factors would be very important to ensuring human security. But there was disagreement about the sustainability of nuclear energy as a technological solution to the problem of energy security. In particular, concerns were raised about the possibility of developing a nuclear waste site in the Canadian shield with its attendant implications (e.g. \$13 billion price tag, terrorist threats, long-term storage problems, leakage, etc.).

4. Development

Finally, there was general sentiment in the Group in favour of involving more young Canadians in Pugwash's activities by encouraging Pugwash-sponsored activities at the university level, recruiting more young scientists, and inviting people with less seniority into Pugwash Canada.

GENERAL RECOMMENDATIONS

In discussing future roles for the Canadian government and Pugwash Canada, many specific recommendations were put forward by individuals though these were not placed before the Group for endorsement as a whole. These can be broadly grouped into four recommendations to:

Encourage Pugwash Canada to discuss its broad-ranging concerns with representatives of government, the private sector, and universities; for instance, it would be important to establish closer links with European scientists, the Union of Concerned Scientists, and deans and departmental chairs of Canadian universities. DFAIT's new 'Fast-talk' initiative was also mentioned and some Pugwashites expressed interest in participating;

Mandate Pugwash Canada to develop a written statement outlining its general concerns and recommendations with respect to US unilateralism; in particular, members unanimously endorsed the statement "Sleight-of-Hand Nuclear Disarmament: How Pugwash Should Respond," prepared by Senator Douglas Roche, on behalf of Pugwash Canada, for the upcoming International Council meeting in La Jolla, California;

Explore initiatives to avoid the weaponization of outer space; in particular, an 'International Scientific Board' could oversee research projects, subject them to transparent review, and wield strict powers to halt certain technologies; more signatures for a 'space preservation treaty' could be sought; the Pentagon's plans to control weather patterns could be opposed; and Helen Caldicott's new book, *The New Nuclear Danger* could be distributed. Moreover, there was very wide agreement in the Group that Pugwash Canada hold at least one Working Group next year on the subject of the weaponization of outer space.

Broaden Pugwash's focus from the abolition of all types of weapons, especially WMD, to deal with all types of human security challenges in order to establish a 'new paradigm for policy-making'. Such an endeavour might entail Pugwash's endorsement of further proposals, ranging from the 'Tobin Tax' to the 'Global Youth Training Initiative'. But, most importantly, it would require attention to a whole range of human security challenges and 'interactive' views, including a greater focus on humanity's moral obligations.

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