



From the President

By [Paul Hamel](#)

During the last few months where issues surrounding Iraq have taken centre stage, threats by the United States on other institutions are not being discussed or are not being perceived. Foremost among these is the direct assault by the U.S. on the United Nations. The U.S. has, in the past, clearly articulated that the covenants and rules agreed to by the family of nations on this planet do not apply if they in any way affect domestic or foreign policy. So, for example, when the case by Nicaragua against the U.S. was decided in favour of Nicaragua at the International Court of Justice, the U.S. simply stated that the court had no jurisdiction over the matter. Likewise, the U.S. has exempted itself from any decision that the International Criminal Court may make against U.S. citizens who are acting in any capacity.

However, a more direct assault by the Bush administration on the United Nations is currently in play. Here the U.S. is offering only two solutions to the current situation in Iraq for consideration. The first option is to have the UN sanction a military attack on Iraq. The second option is for the U.S. to commit the attack if the United Nations does not have the "spine" to do so. Considering the first option, one must remember that the fundamental tenets of the Charter of the United Nations call for peaceful resolution to conflict. Specifically, Articles 2.3 and 2.4 state:

2.3. All Members shall settle their international disputes by peaceful means in such a manner that international peace and security, and justice, are not endangered.

2.4. All Members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the United Nations.

Certainly, as has been articulated by numerous commentators, there are a number of peaceful avenues with respect to disarming Iraq. These options, of course, would require the cooperation of the governments and corporations which were known to have supplied Iraq with the knowledge and technology to wage chemical warfare and to develop biological warfare and nuclear capabilities. This list includes 81 companies in Germany and 24 in the U.S., all of which required export permits from their respective governments. These permits were approved at a time when the U.S. State Department, European Union and UN investigators had determined that Iraq had used chemical warfare and were developing both biological and nuclear weapons (go to the [Science for Peace web site](#) for references). Indeed, if Iraq was in violation of the Nuclear Non-Proliferation Treaty, certainly the U.S. was also, both in its failure to eliminate its nuclear arsenal and in aiding Iraq in developing it own.

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Thus, we see that the U.S. is attempting coerce the UN to settle the dispute by non-peaceful means where it is clear that such an action would reduce international peace and security. Such an action would make the UN irrelevant as an instrument of international order and peace.

The alternative to the UN waging war is that the U.S. will proceed without a UN mandate.

This second option again creates a situation in which the UN is irrelevant. The Security Council cannot censure the U.S. nor can it restrain the U.S. since the U.S. has veto power over any decision. Even if the U.S. representative was asleep during such a vote, there would be no possibility of acting to disarm and/or sanction the U.S. given its overwhelming military dominance and the threat of nuclear annihilation of anyone who would attempt to threaten the U.S.

Upcoming

- **Science for Peace Retreat** 10am Sat. May 10, Gibraltar Point Retreat Centre, Centre Island
- **SfP AGM** 10am Sun. May 11, East Common Room, Hart House, University of Toronto, 7 Hart House Circle (wheelchair accessible)

Thus, I believe we are facing a significant change to the world system that was developed after World War II. That system has always conferred a level of decision-making or power on nations proportionate to the level of their military power; now that military power is even more highly

concentrated – largely in the hands of a single nation – the possessor of this power is using and abusing that power unchecked. The only possibility of opposing international military ‘rule of might’ imposed by a single nation lies in the people of the world opposing such actions, starting by preventing a war

against Iraq. Given the global opposition to this aggression, a unique moment in history exists where the people of the world can prevent another war in which the heavily-armed take the resources of other nations by the dubious virtue of the ability to kill effectively.

Chomsky and others look at the crisis

By [Chandler Davis](#)

Science for Peace co-sponsored a conference "Palestine and Iraq: Any Signs of Hope?" on 10 November. The other sponsors were the Bloor Street United Church Social Justice Committee, the Near East Cultural & Educational Foundation, and Jewish Youth Against the Occupation. Thanks too to the Toronto Women's Bookstore for their support, especially in selling tickets.

The afternoon panel discussion drew over 200 to OISE Auditorium. We heard from Atif Kubursi, Elia Zureik, Carolyn Parrish, and Henry Lowi. The talks were challenging and diverse, the audience questions were (to say the least) challenging and diverse. This session was chaired by Toronto film-maker B.H. Yael.

Kubursi, a Professor of Economics at McMaster, gave the background to present conflicts in the expansion of US domination of the region over many years. Zureik, a Professor of Political Science at Queen's, drew on long experience as a student and a spokesman of émigré Palestinians to analyze their place in the political picture. (To a questioner who demanded where he had recognized Israel's right to exist, he retorted, "I told you I had been a negotiator, with Israel on the other side of the table! I hope this can happen again.") Carolyn Parrish, a Liberal MP, was one of nine Canadian MPs on a fact-finding

mission to Palestine last May. Her talk was a brisk, cogent account of the disruption of life in the occupied territories. (The parliamentarians' report is most impressive, and can be found at www.missiontopalestine.com.)

Henry Lowi is now a Toronto lawyer, but was an Israeli citizen for many years (and is a veteran of the 1973 war); he gave a sober, tough analysis of possible just resolution and the changes needed to make it possible. To the theme question "Any signs of hope?" he answered yes, on the basis of "coexistence between Arabs and Jews under a democratic constitution that upholds human rights."

It seemed everyone learned something, including the speakers.

The evening event was a lecture "Prospects for Peace" by Prof. Noam Chomsky of MIT, which filled the Bloor Street United Church: the main Sanctuary holds 1100, but over 100 more followed the lecture on monitors downstairs. The chair was Meir Amor, an Israeli who now teaches sociology at Concordia University.

The theme of Chomsky's talk was the threat to Middle Eastern stability from the collaboration between US, Israeli, and Turkish governments to maintain control of oil resources and undermine Arab nationalist movements. He drew parallels between the scare tactics of the US administration now and in the past. As now it tells the public to set aside

every other need, even its own liberties, before the menace of Al-Qaeda and Iraq, so in 1958 it raised foreign spectres to ram through military projects. The spectres then were Indonesia, Iran, and Libya --again, all Muslim countries (but secular ones at the time, he emphasized) and all oil exporters. More recently, the Reagan administration raised cries of alarm at Senate hearings that Sandinistas would invade. Fear wins elections in the US, said Chomsky, and especially, a fear-driven call to arms silences critics. He didn't tell us not to be alarmed: we must be alarmed; but like Kubursi in the afternoon, Chomsky argued that the aggressive party, the party to fear, is American power.

An audience question was, "Has the world situation got better or worse over the years?" Chomsky invited us to compare today with the world of 40 years ago. Anyone can see that the position of women has improved, and that racism has retreated: for these gains we thank the civil rights struggles --which were "mostly the work of the young people," he added. Think too of international tension. In 1962, President Kennedy was entering on the great military venture in Vietnam. US planes were flying missions over Southeast Asia as they are over Iraq today, and threatening larger wars there. But the public was silent. If we deplore the relative lack of vocal opposition to the Bush war, we should remember: at least something is happening before full-scale war even starts; that was not so in 1962.

A collection was taken, raising over \$2000 to support two activist groups: Ta'ayush, a coalition of Israeli Jews and Arabs which conducts non-violent resistance to sieges of occupied West Bank

villages; and Christian Peacemakers, which has a delegation of Canadians in Baghdad now to bear witness for peace, and intends to maintain a presence there throughout the crisis.

The evening session was

broadcast live on CIUT, and an edited tape was shown on City-TV the next night. You can listen to the audio from both the afternoon and evening events on [the website of Science for Peace](#).

International Solidarity Movement Visit

By [Max Blanco](#)

A recent speaking tour of Canada afforded Torontonians the chance to hear a story not told by any national publications: a story of hope in the midst of Israeli-Palestinian bloodshed. The Intifada (uprising) has been ongoing for two years now in Palestine and Israel and shows no sign of abating. A University of Toronto lecture on the evening of Wednesday November 20, 2002 brought rays of hope. Held at the Faculty of Law, an Israeli woman by the name of Neta Golan and a Palestinian man named George Rishmawi spoke for roughly three hours, answering questions from an interested audience during the last hour. As there were 75 people in attendance, the classroom was overflowing.

A female law student of Palestinian descent sponsored the assembly and introduced the first speaker with the honorific title "Sit Neta". She has been given this title by the Palestinian residents themselves, as the student testified. Sit Neta is 30 years old, and, I learned later, is pregnant with her first child. She lives in Nablus (Joseph's tomb) in the heart of the as-yet-unoccupied territories with her husband. This is unusual, as most Israeli Jews would not think of so doing. Sit Neta spoke about the popular Jewish mindset as she recounted her struggles to break free of pro-occupation ideologies and

explore the other side of the tracks. She was raised as a typical Israeli and thus fed a diet of press and school teachings that trade on the Israeli belief in Palestinian savagery and pride in Israel's moral superiority. She did not serve in the Israeli Defence Forces (IDF), coming instead to live in Toronto with her grandparents at seventeen. In typical defection style, she did not tell her parents of this decision until she was safely on these shores.

We heard of her service as a human shield - IDF soldiers are not wont to lay hands on Jewish or foreign citizens - in such campaigns as the Olive Grove Harvest. The IDF is preventing Palestinians from harvesting their olives. For many, this is their only source of income. She showed a video of one instance in which one Palestinian family sought vainly to harvest olives (as rightful owners of the grove) while 17-year-old IDF soldiers threatened them with automatic weapons, armoured personnel carriers and a bulldozer. The IDF also often bulldozes the olive trees themselves, thus depriving the farmers of their livelihood. Into this madness comes Neta with her International Solidarity Movement (ISM) volunteers, filming or serving as buffers between opposing sides. The result is never in doubt, however. It leaves the treeless, olive-less farmers in despair, with their wives wailing and crying to the earth. The

aim of the Israeli government is to make life miserable so that the Palestinians will be coerced into leaving the country, in a sort of modern-day Diaspora.

Neta told us of how her family has viewed her activism against Israeli occupation. Her father is particularly opposed to them, becoming all the more so after a suicide bomber had killed Neta's cousin.

George Rishmawi's father once supported himself by carving olive branches; now he is supported by his son as the Palestinian economy has been all but destroyed. George is, like Neta, dedicated fully to the ISM, from which he draws a meagre salary with which he supports his university-bound sister, parents, and soon, his wife. Like Neta, he is about thirty years of age. He is friendly and well-spoken. Under ordinary circumstances, he would have a business, import-export, manufacturing or the like.

These are no ordinary circumstances, as evidenced by the IDF tanks in his streets. He narrated as a video played of footage filmed as unarmed Palestinian civilians played cat-and-mouse games with these IDF tanks in an otherwise deserted intersection not unlike Bathurst and Bloor. The Palestinians had been under curfew and were trying to purchase necessities such as bread and toilet paper.

He told his own version of the olive harvest season, no less troubling than Neta's. The high point of his spoken presentation was this: a hundred or so

Palestinians, disobeying curfew, marched up to and entered an IDF base in broad daylight. They proceeded to march through the empty camp and one man even climbed a watchtower and placed a Palestinian flag on the flagpole, whereupon the group exited. This was all done peacefully and quietly. This was a stunning revelation: I picture it as if the Romans were off doing laundry and Asterix and the Gauls marched in, took Roman pots and pans, placed their flag and left - a calling card of sorts. An IDF spokesman was forced to say later on television that, in fact, the Palestinians had been to the wrong place and the base was further down the road. His humiliation must have

been extreme.

It was this tale that gave me the most hope. If the ISM can pull this kind of trick off with regularity, they will beat both violent Israeli and Palestinian factions. What this communicated to me was a wheaten grain in an ocean of tares: cutting through layers of fear on all sides. Most Palestinians desire peace and this is their way of proving it: instead of "veni, vidi, vici (in bello)" (I came, I saw, I conquered), "veni, vidi, risi, egredi (in pax)" (I came, I saw, I laughed/smiled, I departed gracefully). If the ISM can help make this sentiment flourish, then peace will be unavoidable.

The North American press seems

ready to listen. Paul Adams, reporter with the Globe and Mail has written at least two stories about a Palestinian cabinet minister who has come to see non-violence as a moral and tactical imperative (See Sept. 14: "Longtime Palestinian Minister stands as voice of moderation", Nov. 27: "Palestinians begin to turn against suicide bombings"). The Toronto Star via the Associated Press reported on this as well in a November 29 story. (See Greg Myre: "Top Arafat aide says uprising `a mistake'")

The ISM's proactive story sent me home to dream of olive branches dancing through Jerusalem streets. Neta and George can have that effect on people. It is amazing what friendship does.

Educational Module: Weaponization of Space

By [Sidrah Ahmad](#)

As you may know, a project to develop a presentation kit on the topics of the peaceful uses and the weaponization of space has been underway since this past June. The main objectives of our project are: (1) to familiarize high school students with the implications of the U.S. National Missile Defence (NMD) system and the threat of space weaponization, and (2) to empower students to positive action on these issues, generating a sustained contact with Science for Peace. To date, we have completed the presentation kit, and are moving into Phase II of our project wherein the presentation will be delivered to upper-year high school classes.

The kit consists of a one-hour script, instructions for interactive activities, corresponding visuals, and supplementary documents. Our presentation covers many issues that are rarely emphasized in a high school classroom, such as the history of weapons of mass destruction, insight into international disarmament treaties, and information on NGOs working towards peace. To date, the presentation has undergone two formal trial runs which generated gratifying approval and useful feedback.

Currently, we are in the process of gathering U of T student volunteers who will be trained in delivering the presentation. Starting in the New Year, these "trainees" will give the

presentation in high school classrooms across the city. Additionally, some students at the University of Victoria intend to use the presentation kit in high schools in their province. Our plan is to have the entire kit available on the Science for Peace website.

Several high school teachers have expressed enthusiasm in having our presentation given in their school; one physics teacher was so keen that he said he would be willing to dedicate an entire week's worth of activity to NMD and weapons in space. We are very encouraged and excited by this reception.

If you are interested in attending a presentation, or would like more information about our work please contact Sidrah at sidrah.ahmad@utoronto.ca

It's A Matter of Vision

By [Barbara Birkett](#), M.D.

In the mid 1980s Dr. Bernard Lown and [International Physicians for the Prevention of Nuclear War \(IPPNW\)](#) had a vision called Satellife, which would use space as a platform for the exchange of life-saving information among health professionals in developed nations and the developing world. The launch of the low-earth-orbit satellite HealthSat1 in 1989 established HealthNet, an e-mail based global communication network. The technology continues to expand; a new handheld computer project helps to collect vital health data on the African continent. Ten thousand health professionals in 120 countries currently access Satellife information on a daily basis. In 1995 Satellife was responsible for alerting the world about the outbreak of the Ebola virus, and in the following year it helped transmit information to contain an outbreak at Lambarene.

A similar humanitarian vision for space is found in the Outer Space Treaty (1967), that states "the exploration and use of outer space...shall be...for the benefit...of all countries...and shall be the province of all mankind". This treaty banned the use of weapons of mass destruction in outer space. At the UN General Assembly this year a reaffirmation of the Prevention of an Arms Race in Outer Space (PAROS) was again called for. Kofi Annan has stated (1999) that "We cannot view the expanse of space as another battleground for our earthly conflicts". Canada has stated that "Humanity demands that our heavens remain forever a sanctuary free of weapons of any description,"

and has pushed for action in the Conference on Disarmament (CD).

Unfortunately alternative ideas exist. The US Space Command noted that globalization would probably cause a widening gap between the "haves and have-nots" and that therefore the Americans would be challenged. It promoted its [Vision for 2020](#) for "Full Spectrum Dominance", including dominance of space, to protect its interests. Instead of allocating funding to ameliorate the conditions of inequity which would arouse hostility against the US, the US Vision for 2020 proposes to use funds for continual surveillance, to support missile defence and force application. Among the technologies being researched and developed are strike weapons in orbit which could target sites on Earth, anti-satellite systems, space-based lasers and high power microwave weapons, and Ballistic Missile Defences. American withdrawal from the ABM Treaty has facilitated the last-mentioned. The new Missile Defence Agency proposes spending \$1.33 billion in the next four years on orbiting kinetic kill vehicles designed to knock out enemy ICBMs in the boost phase. President Bush has requested an extra 1.5 billion dollars in addition to already budgeted yearly expenditures of 8 billion for Missile Defence. Many believe that the push for Missile Defence by 2004 will end any restraint on major expenditure.

This would end previous US restraint about going beyond research and development to actual placement of weapons in space. Such concepts can only lead to an arms race in outer space. Even space weapon testing

could damage commercial and scientific research assets in space. All peaceful activity in space such as Healthnet, communications systems, global positioning systems, could be damaged. Canada's \$1.8 billion space industry would be threatened. Not all Americans share this Vision for 2020 view. IPPNW and like-minded organizations do not. Some US military experts call for diplomatic methods for collective security building, passive defenses (e.g. improved resistance to jamming) and avoidance of active defences (weapons).

Canada's Department of Foreign Affairs and International Trade ([DFAIT](#)) has stated that artificial satellites, infra-red and microwave information and chemical and radiation detectors can be used to verify arms control agreements, including ones that apply to space weaponization. Earth-based surveillance, information, and inspections, as well as on-board sensors on space objects, could also hopefully be used. One would hope that Canadian involvement in the development of such tools does not include research and development of weapons technologies. Some hope to convince Canadian industry that it is in their interest (and that of the US) to preserve space for peaceful activity.

Other efforts to prevent weaponization of space are notable. Although progress in the CD has been stalled on PAROS for several years, a new Russia-China compromise proposal seeks to move the process along.

[ICIS \(Institute for Cooperation in Space\)](#) has drawn up a model Space Preservation Treaty which would ban the use of all space-based weapons or weapons that would be used against objects in orbit in space. Congressman Dennis Kucinich has presented a parallel

Space Preservation Act to the US Congress. This treaty would allow activities such as surveillance and early warning satellites, so that some militarization, but not weaponization would be allowed in space. Indeed we know that the militarization of space already exists, and our first task is to prevent weapons in space.

The Space Preservation Treaty could come into effect through an "Ottawa process" if the CD fails to act. This model treaty has been introduced to the House of Commons and many petition signatures in support have been obtained. It has been introduced to many other countries. Congressman Kucinich spoke eloquently at the Canadian Conference on Unity, Sovereignty and Prosperity in Toronto on Nov. 30, 2002, urging Canada to hold a treaty conference on weapons in space, as was successfully done for

banning land mines. On Dec.1 2002, Senator Doug Roche spoke of the importance of peace in space to the Senate. Moreover, Lloyd Axworthy addressed a conference in the spring advocating the concept of space as a sanctuary.

Other members of civil society have grouped as [NOWIS \(NO Weapons In Space\)](#). It will educate its members and the public and "convince the government of Canada to take an unequivocal position in support a permanent ban on space-based weapons." A meeting in Toronto in June convened representatives from [Science for Peace](#), [ICIS](#), [Project Ploughshares](#), [Voice of Women](#), [WILPF](#), [Physicians for Global Survival](#), Homes not Bombs, [IHTEC](#), [UN Association](#), [Oakville Centre for Peace, Ecology and Human Rights](#), [Canadian Peace Alliance](#), and the [Canadian Network for the Abolition](#)

[of Nuclear Weapons](#) to plan strategy for this campaign. Work continues amongst the members; more information is available at <http://www.nowis.org>.

In September, the Berkeley, CA City Council passed a resolution supporting the Space Preservation Act and declaring the space above all citizens in Berkeley a space-based weapons-free zone. With this inspiration it has been suggested that we ask our own city councils to do likewise, just as many of them declared their cities nuclear-weapons-free zones twenty years ago. Two British Columbia towns have already followed the Berkeley lead. Other citizens in Denmark/Greenland, Australia and the UK are asking questions about the use of bases in their countries for Ballistic Missile Defence.

Let us all encourage the Canadian government to stand fast for 20-20 vision and healthy citizens throughout the planet, not for Vision 2020.

The Journal of Science for Peace

By [Hani Kim](#) & [Chris Trendall](#)

The Journal of Science for Peace (JSFP) is a new journal that is accepting articles for publication which are relevant to peace, political and social justice, and sustainable development. It aims to provide a forum for exchange of information that will be of interest to all who are concerned with the foregoing topics.

Each issue of JSFP will contain one or more pieces of comprehensive analysis on a topic chosen by the author. The journal will be published electronically on a schedule determined by the readiness of the article. Articles submitted for review should be in Adobe PDF, while final articles should include both PDF and either Latex, Microsoft Word, or plain text versions which will be published as HTML.

The review process should take 4-6 weeks, and the final manuscript will be published in both PDF and HTML versions on our website, (<http://scienceforpeace.sa.utoronto.ca>) while a print copy will be provided on request. Submissions should be emailed to sfp@physics.utoronto.ca, or diskettes may be mailed to Science for Peace, A306 University College, 15 King's College Circle, University of Toronto, Toronto, Ontario, Canada M5S 3H7

Science for Peace is an organization of natural scientists, engineers, social scientists, scholars in the humanities and lay people. It brings together professors, graduate students and first degree students who are concerned about peace, justice and forging an environmentally sustainable future. The mission of Science for Peace is to promote an understanding of factors affecting these areas by providing a forum for informed discussion, analysis, and debate.

For more information, please contact sfp@physics.utoronto.ca or visit <http://scienceforpeace.sa.utoronto.ca>

Report: Working Group on Genetics and Biotechnology

By [E.E. Daniel](#)

This has been an active year in the area of this group and I will attempt only to summarize important developments. For those with a desire for more information I recommend two websites:

1) **The Institute of Science and Society** (ISIS) managed by Dr. Mae-Wan Ho, who, with her colleagues Professor Joe Cummins of UWO and Dr Angela Ryan, provides regular and incisive analysis of a wide range of issues including: genetic modification and its hazards, genetically modified plants and their problems, cloning, stem cells and gene therapy. Their website is found at <http://www.i-sis.org/>

2) **The Center for Genetics and Society** is a nonprofit information and public affairs organization working to encourage responsible uses and effective societal governance of the new human genetic and reproductive technologies. It works with a growing network of scientists, health professionals, civil society leaders and others. The Center supports benign and beneficent medical applications of the new human genetic and reproductive technologies and opposes those applications that objectify and commodify human life and threaten to divide human society. The Center works in a context of support for the equitable provision of health technologies domestically and internationally, for women's health and reproductive rights, for the protection of our children,

for the rights of the disabled and for precaution in the use of technologies that could alter the fundamental processes of the natural world. Its website is found at <http://www.genetics-and-society.org/>

Good News About GM plants

In Europe it appears that GM-plants will not be allowed because of new rules which require a full environmental assessment, consultation with all interested parties, compulsory monitoring during all stages of their testing and event specific molecular data [analysis to show the exact molecular changes] for unique identification of the GM line. The last requirement also includes required proof that the GM plant line is genetically uniform and stable. Such data do not exist for any GM line, with the few analyses carried out showing that they are not stable. Since compulsory labelling is apparently going to be required with the threshold of less than or equal to 1% GM material in food to avoid labelling, this will preclude most food derived from N. America. One consequence of this is that likely the export of GM food from N. America will be excluded and the problems of GM growers will be compounded.

In related news, Africa is still battling to keep out GM seeds and foods. The situation in Asia is varied, with some countries embracing and some rejecting GM seeds and food. However, most wheat buyers in Asia are refusing to buy GM wheat. A great deal will depend upon the

decisions made in China and India, both of which have invested heavily in biotech research and startups, with India also importing capital from AstraZeneca.. However, Indian sources have reported massive failures of GM (with Bt toxins) cotton crops, often owing to attacks by the bollworm which is supposed to be controlled by the Bt toxins in the plants. China appears to be developing GM plants such as rice. The extent to which they are already in production is not known to me.

Bad News About GM plants

In N. America, including Canada as well as in Australia, the proponents of GM plants still have the political clout to prevent mandatory labelling. If the FTAA goes ahead, all of the Western Hemisphere is likely to be exposed to GM plants and seeds. However, the recent elections of a social democratic government in Brazil strongly opposed to free marketism may prevent any further progress on the FTAA. Canadians need to keep pressuring the Canadian government to adopt the precautionary principle with regard to these foods and to require compulsory labelling.

The aggressive campaign of Monsanto to sue Canadian and US farmers, whose fields become contaminated by their GM crops such as canola, needs to be fought politically as well as legally. Organic farmers are now suing Monsanto for contamination of their fields with GM seeds. In November 2001, evidence was reported that maize landraces growing in remote regions of Mexico (where maize originated and containing the plant precursors of modern maize) were already contaminated with transgenic material.

Other important issues include the growing evidence that horizontal gene

transfers (such as for herbicide resistance in weeds that the herbicide is intended to kill and for antibiotic resistance in the gastrointestinal bacteria of animals that eat the GM plants with genes for antibiotic resistance) do occur. Multi-herbicide tolerant plants such as GM canola in Canada, and Round-up Ready® resistant superweeds have begun to plague GM soya and cotton fields in the US. It appears possible that within a decade or less, GM plants will be recognized as a scientific as well as an economic failure. It is finally gradually being accepted that animals which acquire intestinal bacteria with antibiotic resistance by eating feed with low levels of antibiotics [used in large less sanitary commercial operations to enhance growth by preventing diarrhea and other diseases, but providing selection pressure for the development of antibiotic resistance] make a significant contribution to antibiotic resistance of bacteria which affect humans, this problem needs attention. Of course, the usual responses from politicians and their corporate partners will be: “phasing out antibiotics from animal feeds and eliminating antibiotic resistance genes inserted to identify GM plants will increase costs and prices and will cause damage to the economy”. Proof that their will be overall benefit to human health will not be considered sufficient. (See [ISIS, Nov. 13, 2002](#) & links on horizontal gene transfer)

A related issue is the patenting of genes and genomic components and the upholding of these patents applied broadly by the US and Canadian courts. I will leave this major and complex issue for a later commentary. However, See [ISIS-TWN Report Feb. 2001](#),

[“Why Biotech Patents are Patently Absurd-Scientific Briefing on TRIPS and Related Issues.”](#)

Gene Therapy

Those genetic determinists and reductionists who have touted the ability of gene insertions and replacements to solve human health problems have had no success to date in attempts to use their therapies. Indeed their “therapeutic” trials have resulted in illness and death. In 1999, a healthy teenager dies in a gene transfer trial at the University of Pennsylvania, in which subsequent public enquiry revealed multiple, unreported adverse events as well as conflicts of interest on the part of those conducting the trials. The viral vector used in this trial was one, adenovirus related ones, have been shown repeatedly to induce immunological deficiencies in humans and in the case of the fatality to be integrated at multiple sites rather than just in the liver. (See [ISIS Report, Sept. 20, 2001](#))

The only reported success was by a French team at Necker Hospital in Paris, who treated children with severe combined immunodeficiency (SCID), a genetic disease thought to be caused by a mutated gene in the X chromosome. These children were given their own bone marrow cells which had been removed and given a vector with a copy of the normal gene before returning them to the donor. Since the vector with the normal gene was given outside the body, the risks of aberrant integration in the genome of other cells were minimized. However, recently one of the children developed leukemia, subsequently shown to be caused by an aberrant location of the inserted gene in chromosome 11. Thus, there are no gene transfer trials to date in which the biotechnology can be shown to be safe. The general problem

is that there is no way in which to guarantee that the insertion vector will put the needed gene in the right location in the genome. (See [Science, News of the Week, Oct. 4, 2002](#)).

Cloning of Humans and Animals

Cloning can occur naturally as in the case of twins or by somatic cell nuclear transfer, when a nucleus from a somatic (non-germ) cell is removed and transferred to an unfertilized egg which has its nucleus removed. The latter process has been the one used to produce cloned animals with great difficulty and variable results in terms of animal health and survival. Human embryos, usually after *in vitro* fertilization could be the sources of clone-like humans (as occurs frequently during *in vitro* fertilization if multiple embryos are implanted) are also sought as sources of stem cells. These are cells that are undifferentiated (totipotent) and can give rise after differentiation to any cell type. For a few cell divisions after fertilization, the cells of human embryos remain totipotent (the basis of identical twins and quadruplets). Later cell differentiate and are no longer totipotent. However, a few cells on many organs are multipotent and some may be totipotent. These are adult stem cells and some organs have them throughout life; e.g., bone marrow, intestinal epithelium and skin.

A goal of genetic engineers is to take stem cells from a human and make them develop into various cells types as desired. For example, to replace a failed or lost organ (like the pancreas or heart). Moreover, when failure involves a genetic mutation, they aim to replace the mutant gene in the abnormal cell and replace the diseased organ with a normal one. This is what was attempted in SCID infants as described above. This is called *therapeutic cloning* and is in contrast to cloning for eugenic or cosmetic purposes.

Cloning for eugenic or cosmetic purposes (“designer cloning”) is almost

universally condemned and illegal in many countries. There is widespread, but not complete, acceptance that “*therapeutic cloning*” may be allowable. (Remember the problem of random insertion of genes by the vectors used to insert normal genes into a diseased genome; *i.e.*, is it safe?) One other major question is whether human embryos should be produced simply for the purpose of producing totipotent stem cells or whether adult multipotent, perhaps totipotent, stem cells should or can be used. *Human reproductive cloning* is “the creation of a human fetus that is substantially genetically identical to a previously born human being.” It would be achieved presumably by somatic cell transfer. It is opposed by nearly all legislative bodies.

These are a complex issues and I refer you to the [ISIS Feature Article](#), [“Why clone humans?”](#) and to the [website for the Center for Genetics and Society](#). I hope that [Phyllis Creighton](#) will comment on these issues.

Genetic Determinism

Much of the hype about cloning is based on the philosophical and pseudoscientific concept that everything about humans and animals from appearance to intellect to behaviour is determined directly by genes. No real scientific basis for this exists. While it is clear that genes play an important role in determining the characteristics of humans and animals, there is also abundant evidence that events during development *in utero*, environmental and intellectual events

during growth and maturation also play major roles. Moreover, genes in the mitochondria, inherited only from the mother, will affect the outcome of “somatic nuclear transfer” as a means to create a clone. It will be obvious to those concerned about a just society that arguments for genetic determinism play into the hands of those who do not wish to pay attention to social welfare.

Conclusion

I hope that this long and wordy (and incomplete) report makes clear that events in the area of this working group are unfolding rapidly and I strongly feel the need to expand its work. This is beyond my capacity and I hope that the Board of Science for Peace can take some action to achieve this goal.

New Book

A new book written by Dominick Jenkins, a former SfP member and Ph.D. student of Andre Gombay, was recently published. He is currently a researcher at the Department of History and Philosophy of Science at Cambridge. It's called *The Final Frontier: America, Science, and Terror* and is currently available at Book City and the UofT bookstore. One of the laudatory comments is by Richard Falk and Science for Peace is listed in the acknowledgements.

Hamilton Quaker Delegation to DFAIT

By [Hanna Newcombe](#)

Hanna Newcombe, Diana Shepard and Dick Preston met with Jim Wright, an assistant deputy minister in Foreign Affairs for over our allotted 30 minutes, followed by a forum for more than our allotted hour with four members of the Division. It was chaired by Robert McDougall, Director; Mr. Baines and Christopher Grout from the IDA section; Mr. Dawson from the NUR section of DFAIT and Mr. Litvak from the IDR section of the Department of National Defense. They had identified five points from our letter requesting the meeting, and spoke to these in very full and informative detail: nuclear weapons abolition, small arms and light weapons, no weapons in space, International Criminal Court, no war in Iraq, and independent Canadian foreign policy. The three of us were able to present the main points of our concern in both meetings, and each of us left a one-page statement at both meetings. We came away very impressed with the degree of their commitment and knowledge, and with their ability to speak directly to our concerns.

SfP-Pugwash Joint Conference

The annual SfP-Pugwash joint conference took place on Saturday March 22 in the East Common Room of Hart House on the campus of the University of Toronto. The topic of this year's conference was weaponization of space, which was addressed by Loring Wirbel of Citizens for Peace in Space, Sarah Estabrooks of Project Ploughshares and Bob Lawson of DFAIT.

Round-Table Conferences: An Application of Small-Wins Theory

By Floyd Rudmin frudmin@psyk.uit.no Psychology Dept. University of Tromsø

"Quixotic" and "chaotic" are the two words that often describe our efforts to imagine and achieve solutions to such serious problems as environmental collapse, cycles of injustice and revenge, nuclear war, or the loss of law and democratic processes in many regions of the world, including our own. The very scale of the problem can paralyse us.

Karl Weick's "Theory of Small Wins" (in "American Psychologist", vol. 39, 1984) argues that social activists need to conceive their actions as small, completely contained, quantal projects. These should be opportunistic and take advantage of principles of leverage. That is, we should use resources that attract and make use of other resources and that recruit a variety of motivations: We should arrange actions that have the possibility of an effect that is greater than the efforts warrant.

Small, opportunistic projects require fewer resources and do not exhaust us, as do larger projects. If a small project succeeds, then we receive re-enforcement for further actions. A record of small wins can attract others, and in the long run, can compile to a major win. However, if a small project fails, then that is not too damaging to our morale, since not much was invested in the first place. In small-wins theory, it is of primary importance that social activists maintain and cultivate their own morale and motivations. Burn-out and discouragement are to be avoided.

With this brief theoretical background, I would like to propose

that our Science-for-Peace organization consider promoting a wide program of round-table conferences in Canada. Our organization has been riding on the energy and labour of relatively few members in the Toronto region, and we have been oriented towards relatively large projects, such as organizing big conferences, or publishing and selling books, or preparing policy papers for government and UN commissions. This has had several negative consequences: 1) the few activists in the center experience burn-out and may feel put upon or exploited by the rest of us in the periphery. 2) Those of us in the periphery feel ignored and isolated. 3) Our membership narrows and relatively few new young scholars are recruited to our membership. 4) We experience frustration and loss of motivation if we see that our big projects do not achieve the big effects we had imagined.

Round-table conferences are small, easily organized, and use the resources available to any faculty member in any academic department. Their success is determined largely by the creativity and social dynamics of the participants, and is thus totally under the control of the participants. In other words, success is relatively certain when success is determined by the quality of the thinking and discourse at the meeting. Round-tables welcome graduate students and junior faculty, give them career enhancing opportunities, at the same time engaging them in Science-for-Peace actions.

Round-table conferences would not replace other Science-for-Peace

actions and projects, but would supplement them with additional energy, new ideas, and new members. The work load of activism would be more distributed and more of Canada could be involved and contributing.

The procedures for hosting a round-table conference would be something like this:

1. Any Science-for-Peace member or small group of members conceives a topic or an issue that they would like to discuss, research, criticize, develop policy alternatives about, etc. For example, "The Role of Apologies in International Relations", or "Alternative Technologies for De-Mining Forest Lands", or "Models for Predicting Terrorist Targets", or "Mechanisms for Civilian Monitoring of Covert Nuclear Testing". The topics for a round-table conference could be very focussed and limited, or could be broad and general. The organizers decide.
2. They petition the Science-for-Peace board for permission to use our name in hosting and promoting this round-table conference. Other sponsor might be sought, for example, CPREA, or Pugwash, or the university's department of mathematics, for example.
3. They arrange a meeting room within their own university or department. No cost.
4. An email list is compiled of all organizations that might have an interest in the topic. Many association newsletters are only mailed quarterly, so sending notice of the meeting to these would be a priority. Other important promotion sites would be the university newspapers, electronic bulletin boards, and departmental notice boards in ALL of the universities and colleges within driving distance. For most of Canada, some US universities are within driving distance.

5. Information would need to be prepared for out-of-town visitors, concerning location of the meeting, parking, and reasonable accommodations.
6. As people respond to the call-for-papers, a program would be devised. The program coordinator might personally recruit particular people with expertise on the topic.
7. Refreshments and social events might be arranged. For example, an opening breakfast meeting. Lunch. Coffee breaks. Dinner together, or an evening dinner party or cocktail party. Normally, these would be paid by the participants, but support funding might be found within the university, or possibly by Science-for-Peace. Since a round-table does not have a large number of participants, perhaps 15 to 25, many of the social events could be hosted within the department or the homes of the organizers.
8. A decision would have to be made in advance, or after seeing the quality of the presentations, as to whether or not the collected papers and discussion might be edited for internet posting or hard-copy publishing.
9. Graduate students might be particularly welcomed to these small conferences, and given roles in organizing, promoting, hosting, and publishing.
10. Science-for-Peace might begin an electronic journal for the quick and inexpensive distribution of the round-table proceedings. Over a period of years, such might become a valuable resource for new ideas and bibliographies.
11. The participants in these round-tables would all receive a pamphlet describing Science-for-Peace and welcoming the participants to membership.
12. The hosts and organizing group, at the end of it all, would make some brief written report to the Science-for-Peace board, of what went well and what not, so that over a period we would build up some efficiencies in organizing round-table conferences.

Petrotyranny: 9/11 Causes and Responses

By [John Bacher](#)

Published by Science for Peace and Dundurn Press nine months before September 11th, my book, "Petrotyranny" provides the basis for a sane response to the problem of terrorism. The connection between oppressive regimes, the export of oil to largely western economies, and the funding of various groups is discussed in the context of Africa and Central Asia. It is a salient point of interest that bin Laden was financed largely by Saudi money gained through dealings with US oil interests and, in his own words, acted out of defiance of not only the US military presence in Saudi Arabia but also US military and economic pressure throughout the Arab world.

There are many similarities to the situation today in Iraq. Again, blinded by its military superiority, the US is not developing a coherent policy that would encourage regime change through nonviolent methods. The US once supported Hussein as they did bin Laden; both have made decisions that opposed US strategic and economic interests; both have been bombed by the US. Oil smuggling, which pays for Iraq's armies, continues without serious US protest through Turkey, Syria and Jordan, while funding for bin Laden's group has come from the US itself, and later from the free flow of oil revenues across the Saudi border. No serious effort is being made to target sanctions more effectively in Iraq, through efforts to hunt down the bank accounts and ban the travel of the regime's top 200 personalities, for example; sanctions against Afghanistan were short-lived and similarly ineffective.

Unlike the situation in Afghanistan, there is a large contingent of groups in Iraq who favour a secular democratic state through non-violent means. Of course, supporting such groups would cede self-determination to the people of Iraq, while bombing and selecting the 'democrats' who will rule is an opportunity to extend US control over the region. This is currently the situation in Afghanistan, where former UNOCAL (oil corporation) consultant Hamid Karzai has been installed as leader, and former UNOCAL consultant Zalmay Khalilzad is US Special Envoy to Afghanistan, from another country run by oil executives -- the US, by Bush, Cheney, and Rice.

It is possible for humans to live good lives, in democratic countries at peace with each other, without the terrible destruction of the environment caused by fossil fuels. Working towards this dream is what those who work for peace, human rights and the protection of the environment are striving towards. This means abolishing petrotyranny and creating a green and democratic peace.

No Launch on Warning

By [Dr. Alan Phillips](#)

NOTE: The term "Launch on Warning" (L-o-W) is used here in reference to retaliation with rocket-mounted nuclear weapons to a perceived nuclear attack in response to a warning (by radar or satellite sensors) of attacking missiles, before any incoming warhead had arrived and detonated. In the U.S. military dictionary the term "Launch under Attack" (LUA) has the equivalent definition. "Launch on Warning" is not defined in the web version of the dictionary, but we understand it is used to include a pre-emptive strike, if the enemy is perceived to be preparing for nuclear war.

Introduction

Prevention of nuclear war between Russia and the U.S. is vital for the future of the world because both countries retain such large arsenals that if they should go to war the result would be much more extensive than complete destruction of both countries. Radioactivity, and smoke from the many firestorms, would severely affect at least the whole of the northern hemisphere. Nuclear winter, widespread starvation, and other consequences might even combine to exterminate the human species. In the present relationship between the U.S. and Russia an intentionally started nuclear war is extremely improbable. There is, however, the risk of an unintended war starting from one cause or another, and under the policy of L-o-W the likeliest cause is a false warning. To risk such a disaster happening because of a mere accident to a man-made system is absurd.

While the claim that long-term stability can be assured through nuclear deterrence must be rejected, deterrence remains the central basis upon which arms control discussions, and agreements, between the governments and military establishments of the U.S. and Russia take place. Deterrence is in theory achieved when a potential attacker is convinced that an attack will be unavoidably followed by retaliation so devastating that it

would be irrational to attack in the first place. Nuclear deterrence is assumed for the present discussion because the focus here is on changing just one feature in the two States' military posture. It is argued that the change to a policy of "NO L-o-W" is a logical necessity and is readily possible; it is urgently needed, and it does not require any immediate change in the assumptions upon which current policy is based, whether these are valid or not.

The Emergence of a Launch on Warning Policy

As the accuracy of nuclear weapons advanced, it was realized that a massive pre-emptive salvo directed at command and control systems and retaliatory weapons could diminish or eliminate a capacity to retaliate. If either side believed it could achieve such a "disarming first strike", it might be tempted to attack. To avoid this weakening of deterrence through the pre-emptive destruction of an adversary's retaliatory forces, both sides explored the possibility of launching retaliation before the first impact - thus "Launch on Warning".

During atmospheric testing of nuclear weapons in the early 1950's the phenomenon called "Electro-Magnetic Pulse" (EMP) was discovered. EMP is an extremely sharp and energetic electromagnetic impulse that is emitted by electrons traveling at nearly the speed of light from a nuclear explosion. It disrupts unshielded electrical and electronic

equipment over a wide area. This possibility that electrical disruptions might prevent retaliation provided a second reason to adopt L-o-W.

It is probable that by 1969 L-o-W was the military policy on both sides, and had been for a number of years. The recollections of former officers and enlisted men of Strategic Air Command (SAC) from the early 1970's confirm that L-o-W was in effect then. The capability, and presumably the policy, of L-o-W are retained by the U.S. and Russia, even though the Cold War is regarded as over. This seems inexcusably dangerous.

The Danger of Inadvertent Nuclear War from False Warnings or Chance Coincidences

Launch on Warning has kept the world exposed, for at least 30 years, to the danger of a nuclear war caused by nothing but a coincidence of radar, sensor, or computer glitches, and a temporary failure of human alertness to appreciate that an unexpected message of attack from the warning system is false, the enemy having done nothing.

During the Cold War, many mishaps within the nuclear retaliation system on the U.S. side are known to have occurred, including false warnings [See Alan F. Phillips, "20 Mishaps that Might Have Started Accidental Nuclear War"]. There must have also been many similar incidents on the Russian side. One has been reported in which a Russian officer decided on his own initiative not to report an apparently grave warning on his computer screen, in the correct belief that

it was a false warning. He may have saved the world, but was disgraced for failing to follow his orders; his career was ruined, and he suffered a mental breakdown.

On the morning of November 9th 1979, a war games tape was running on a reserve computer when failure of the operational computer automatically switched in the reserve. The Threat Conference saw the picture of a massive attack in a realistic trajectory from Russian launch sites. On that occasion, preparation to retaliate got as far as launch of the president's National Emergency Airborne Command Post before the error was discovered.

Exploring the NO L-o-W Posture

To change from L-o-W to NO L-o-W does not require any change of alert status of the retaliatory system. It only requires a change of standing orders and standard operating procedure, such that no launch may take place until a nuclear detonation is reported. Furthermore, the elimination of L-o-W does not eliminate any other retaliation options. It just ensures that retaliation would not take place without confirmation of a nuclear detonation. If, and only if, indication of a nuclear explosion was received at the predicted arrival time of the attack, the final order to launch could be sent immediately to the silos. The actual retaliatory launch could probably take place within a minute of the first detonation. If the final order to launch was not received within a certain short time after the time of predicted impact, the launch

preparations would be reversed.

A policy of NO L-o-W would not eliminate the horrific threat of nuclear annihilation; only the abolition of nuclear weapons can do that. But a NO L-o-W posture would remove the danger of launching nuclear-armed rockets in response to a false warning. That would probably eliminate 90% of the current risk of nuclear war between the U.S. and Russia. If only one side changes to NO- L-o-W, the risk of a purely accidental war from a false warning is approximately halved, immediately.

The Effect on Deterrence

One possible objection to NO L-o-W is that it might impair deterrence and tempt one side to try a "disarming first strike". There are good reasons why this objection should not be allowed to prevent the policy change. For either side to consider first strike to be a rational option, the attacking side would have to be absolutely sure that its first salvo would fully disarm the other's retaliatory capacity. They would know that any surviving weapons would pose a retaliatory threat that could be launched immediately after the first bomb had detonated. Under NO L-o-W the degree of alertness of surviving weapons would not be reduced, and retaliation for a real attack would still be launched promptly.

The other possible way to achieve a successful disarming first strike would be a first salvo engineered to maximize Electro-Magnetic Pulse. It is hardly credible that the attacking side could feel sure that their EMP would disrupt communication and launch mechanisms sufficiently, since

they would know that military electronics will have been shielded. Furthermore, they would know that submarine-launched missiles would not be disabled, because the sea-water shields submarines and their contents. The side planning a pre-emptive attack would also have to be sure that its adversary had in fact changed to and remained under a policy of No L-o-W. They cannot be sure of this without verification. So from the point of view of preserving deterrence, verification is actually undesirable.

Thus, a NO L-o-W policy on either side would have minimal impact on deterrence, and would be an advantage to both, simply because it halves the risk of a purely accidental nuclear war. NO L-o-W by both sides makes this particular risk zero. Neither side wants an accidental war. They know that if either side mistakenly launches nuclear weapons both countries are going to be destroyed: it makes no difference who started it. If, despite these arguments, the military establishment on either side is not persuaded to abandon L-o-W, the head of state must balance the elimination of the very definite risk of accidental war due to a false warning, against a hypothetical possibility of weakened deterrence resulting in war. The results of a nuclear war would be the same, whether started by accident or by intention.

Conclusion

For the present, adoption of a NO L-o-W policy offers a quick and simple means of reducing the danger of accidental war. All the world's people would be safer for the change. Therefore all governments have a duty to their people to urge the U.S. and Russian governments to make it at once.

Letter to the Editor

What occurs to me is, with the wonderful activist group Science for Peace now going strong, we must now develop a SCIENCE OF PEACE. It is the essential for humanity. Can you include this suggestion in the next issue (indicating I suggested it)? I should much appreciate INTERCHANGE (ekort@sympatico.ca) on this matter.

Thanks. PEACE!

[Eryl Court](#)

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