George Ignatieff at 75

Family, friends, colleagues and members of Science for Peace celebrated George Ignatieff's seventy-fifth birthday on December 16, 1988 in the Combination room of Trinity College.

Dr. George Eastman, bursar at Trinity led the proceedings which included his remarks, the reply by Ignatieff, the ceremony of the birthday cake, happy birthday sung with Anatol Rapoport at the piano, the unveiling of his portrait in the foyer of the George Ignatieff theatre, the reading of congratulatory messages from the Lieutenant Governor, the Prime Minister, the leader of the opposition, and the Premier of Ontario. The mayor of Toronto had a plaque prepared and the Soviet Institute for Studies of US and Canada sent a telegram. The arrangements were made by Catherine Armstrong with the help of George Barnet.

Dr. Eastman in describing their days together running Trinity said that George Ignatieff would make many drafts of each speech he gave, but these became just notes for the speech that he would give. The 75th birthday speech was no exception. The following are the remarks that he prepared:

There is a Russian proverb for every occasion - even for 75th anniversaries: "Live a century, learn a century", it said. I feel particularly gratified that I should be celebrating this anniversary with my family and friends in this university setting. For it is here -- fifty-four years ago -- that I began to appreciate the value of learning as the most enduring of pleasures that life has to offer.

I began the process of learning consciously and precipitously in 1918 when as a child of 5 my family lost everything in the revolution in Russia. However, I became favourably predisposed to universities, perhaps, when my father was rescued from a firing squad by a student from Moscow University.

I came to this university in 1932 as a young refugee, admitted into Canada as a labourer by the CPR Colonization Branch. I had been assigned to a railroad construction survey as an axeman in B.C. And then the Great Depression struck and I found myself in Toronto without a job. My elder brother, Nick, later Warden of Hart House, took me to see Arthur Fennell, the then Registrar of the University. I asked him how I should go about becoming an engineer. After looking patiently through my school transcripts, and asking some leading questions, Fennell persuaded me that my talents should lead me in the direction of literacy rather than numeracy. He also took the trouble to arrange an interview with the principal of Jarvis Collegiate.

He help from a busy U of T Registrar started me on a career of learning, which in four years culminated with my winning a Rhodes Scholarship in 1936.

With the start provided by the University and Trinity College, I have enjoyed three careers -- diplomat, university administrator and self-employed "peace monger". In all these occupations, I found something I learnt from a number of teachers on this campus, like Provost Cosgrave, Harold Innis, Fulton Anderson, John Lowe and Mabel Cartwright. Each of them was a distinct eccentric personality as well as an outstanding teacher. Despite differences of view, sex and outlook, they taught me, among other things, that one can, and must, work together with others with a certain tolerance, if one is to share the benefits of this wonderful world.

When I speak of learning, I have in mind not just the remembrance of knowledge or experience of things past, but learning for the sake of preparing oncoming generations for the future. That is the main purpose of Universities -- preparing new generations for the future, by training them to the disciplines of how to learn -- how to think, distinguishing between good and bad ideas, and acting responsibly. I have also been convinced that those concerned with preparing students for the future, have a special responsibility for ensuring that students HAVE a future; hence my continued interest, shared by others in this room, in "peace mongering".

I learnt, too, that luck, rather than merit or good management, has a good deal to do with success. I have been extremely lucky having a wife like Alison, remarkable children, a supportive family, as well as outstanding teachers and close friendships. I have had luck, too, in jobs that passed me by, as well as jobs in which I was given an opportunity of providing satisfying service. Some call it luck -- some fate; some faith. I agree with Shakespeare when he says in Hamlet: "There's a Divinity that shapes our ends, rough-hew them how we will."

Learn as long as you live, is my conclusion: there is no end to what you can learn even as Chancellor watching those hot June days, the varied reactions of students at Convocations when receiving their degrees. I am still learning, and still peace mongering.

As we approach a new year, I have never felt more hopeful about the prospects of my hobby, peace mongering. The policies emanating from Moscow and particularly the statement of President Gorbachev at the UN on December 7th, gives new hope for a return to sanity in international relations and new challenges of international cooperation. The solidarity and compassion demonstrated by the world community over the earthquake disaster in Armenia also gives me hope.

As Reinhold Niebuhr said: "nothing worth doing is completed in our lifetime, therefore we must be save by hope."

And that goes for the Universities Breakthrough Campaign, as well as for international relations. I offer a cheque as a modest contribution to this essential project which stands to benefit Trinity and other colleges, as much as the University.
In 1985 S/P held a conference of European Security Requirements and the MBFR talks. In addition to organizing the conference, Derek Paul edited the proceedings published by Taylor and Francis, London under the title Defending Europe, Options for Security. Many of the ideas expressed at the conference and in the book have now become much more widely circulated. The September 1988 special supplement to the Bulletin of Atomic Scientists was devoted to the subject. Mike Pearson has reviewed this for the S/P Bulletin:

The Non-Offensive Defense of Europe

The INF Treaty of 1987 has been widely acclaimed, not only for its intrinsic merit of banning a whole class of nuclear weapons, but also for the model it provides for further and deeper arms cuts. Nevertheless, despite all the hopes that have been aroused, some elements in the NATO leadership have expressed considerable misgivings as to how Western Europe will now defend itself against the Soviet threat that is still perceived to exist. The concern stems from the fact that the missiles that NATO is foregoing (Pershing 2 and ground-launched Cruise) had a clear-cut role in deterring even a conventional Soviet attack. These were American weapons, based on West-European soil and capable of reaching the USSR, and since the Americans would presumably use them rather than let them fall into the hands of Soviet invaders, it followed that a conventional Soviet attack on Western Europe that threatened to be successful would lead to an American nuclear strike against the USSR.

Faced with a partial decoupling of the USA from the defense of Europe, the predominant response in NATO has been a re-emphasis of short-range (less than 500 km) tactical nuclear weapons that were deployed in West Germany long before the introduction of the Cruise and Pershing 2 missiles in 1983. It was made abundantly clear that there was no question of "no first use": these weapons were intended to be used at any stage against even a conventional Soviet thrust.

While the emphasis was always on nuclear weapons, considerable attention was also given to the possibility of defending Western Europe with conventional forces. Elaborate war plans were evolved under the names Airingland Battle and FOFA (follow-on forces attack), the essential characteristic of which is the principle that "the best defense is offense; more specifically, these plans call for deep counterattacks into Warsaw-Pact territory at a very early stage of any conflict.

Two highly undesirable features are immediately apparent in such plans. In the first place, from the perspective of the USSR it cannot be unmistakably obvious that the intent of these war plans is purely defensive, since if the NATO powers really had aggressive designs, these are the sort of plans they would draw up; the resulting loss of confidence can only stimulate the Warsaw Pact to still higher levels of military preparedness. Secondly, because the key to the success of these plans is to strike very early, before the enemy has been able to penetrate deeply into West Germany, a hair-trigger situation develops in which there is a very real danger of NATO striking first, either through a misreading of signals, or intentionally as a pre-emptive move when it is thought that war has become inevitable.

We are thus led to ask whether there is not a third option open to the NATO planners at this time of decision, the option of re-structuring the defenses in such a way as to be able to defeat a conventional attack, while foregoing any offensive potential that would pose a threat to the USSR. This concept has become known as non-offensive defense (NOD), and is examined in some detail in a well-coordinated series of articles appearing in the Bulletin of the Atomic Scientists for September 1988, with authors from both NATO and Warsaw-Pact countries. Particularly noteworthy is the contribution of Anders Boersenprup (Denmark, a contributor to Defending Europe, Options for Security), who makes the very important point that stability has little to do with parity between the two opposing forces. Rather, it depends much more on a certain kind of imbalance, in which both sides are stronger in defense than in offense. He then goes on to show how the present forces of both NATO and the Soviet bloc in no way satisfy this criterion, both being adapted more to rapid and deep-thrusting offensives. The numerical estimates he presents for the armed forces of each side make interesting reading; the different sources vary widely, but there is a considerable measure of agreement on the relative strength, and one is struck by the overwhelming superiority of the Soviet tank forces. This confirms the common belief in the West that the Warsaw Pact has adopted an even more aggressive posture than NATO. Boersenprup concludes by comparing two possible approaches to the installation of a NOD regime, unilateral action and negotiated mutual action, and shows how the one can reinforce the other once the process has started. Since the publication of the article dramatic emphasis to this thesis has been given by Gorbachev's spectacular announcement to the UN in December of heavy unilateral cuts in Warsaw-Pact forces, including in particular the threatening tank forces. (Less extensively reported, but equally significant, was Gorbachev's decision to withdraw assault-landing and river-crossing forces from the front line.)

A number of articles, coming from both East and west, spell out in some detail specific proposals for a NOD regime in Europe. One such proposal (Grin and Unterseher) calls for West Germany (the land of NOD?) to be covered with a mesh of quasi-autonomous defense units. One gets the impression that the Federal Republic would take on the appearance of an armed camp even more than now, and wonders how the peace movement would react to this.

The only really negative note is struck in the article by S.J. Flanagan of the Pentagon's National Defense University, but his misgivings are not particularly convincing. Indeed, he admits that NOD might be a valid response of the present Soviet leadership, but he fears for what might happen should the USSR revert to its old ways. This is grotesque: when the Soviet leaders are wicked we plan accordingly, but when they become benign Flanagan would still have us continue as before, for fear that they turn wicked again. Such fears would surely be self-fulfilling if we were to follow Flanagan, and it is difficult to see how he imagines the state of conflict between East and West is ever to end. The answer to Flanagan's fears is that once a stable NOD regime were established throughout Europe, East and West, it would surely take the USSR longer to build up its offensive potential again that it would take NATO to adjust its defenses appropriately. If these objections are the best that its opponents can raise, NOD must surely have something going for it.

The entire series is tied together in the concluding article of Randall Forsberg, who, while sympathetic to the idea of the non-offensive defense of Europe, reminds us persuasively that in the long run this issue cannot be isolated from that of global arms control. The BAS has performed a most important service in presenting such a coherent and authoritative account of an issue which, while less spectacular than, say, control of strategic nuclear arms, is nevertheless of critical importance to the establishment of a stable peace.

This issue has, incidentally, a direct bearing on the current debate concerning the extent to which Canada, as part of its contribution to NATO, should maintain a military presence in Western Europe. It would seem that before responding to this question, one should first decide what kind of a defense one wants to see in Western Europe; reading this supplement of the BAS should go along way towards clarifying one's ideas.

Mike Pearson

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Science for Peace Publications:
(available from local book representatives, see page 3)

- Defending Europe: Options for Security $14
- The Name of the Chamber was Peace $10
- The Study of Conflict, by Anatol Rapoport $2
- The Arctic as an International Political Region by Franklin Griffis $2.50
Mike Wallace has written on the submarine issue to stimulate SFP to
develop a position with substantial support from members. The
following is a brief version of a longer paper being circulated among the
chapters. It will also appear in the publications of the IPPNW

NUCLEAR ATTACK SUBMARINES
FOR CANADA?

Michael D. Wallace

Recent public debate in Canada has focussed almost exclusively on the
Meech Lake accord and the Mulroney trade deal. Yet the proposed
purchase of 10 or 12 nuclear powered attack submarines (SSNs in
military designation) announced in June 1987 in the Defence White Paper
represents no less of a threat to traditional Canadian policies and values.
The White Paper argues that these submarines are necessary to counter
the Soviet submarine threat to our Atlantic sea lanes, a Soviet naval
buildup in the North Pacific, and the threat posed to Canadian
sovereignty by both Soviet and American submarines operating in
Canadian Arctic waters. In each case, the reasoning is spurious.

THEY ARE USELESS IN THE ARCTIC

In the Arctic, the initial plans call for the deployment of only a single
Canadian SSN to patrol over 100,000 square kilometers of ocean.
Moreover, both Soviet and American submarine navies have superior
technology and well-practiced under-ice tactics that will easily defeat the
detection capabilities of either British- or French-built subs.

THEY ARE OFFENSIVE, NOT DEFENSIVE WEAPONS

In the Pacific, the threat to peace comes from the Americans, not the
Russians. Since 1985 the Soviet navy has decreased its long-range
activity in this area, while the American "Maritime Strategy" announced in
1982 has led to ever more aggressive American naval manoeuvres
against Soviet ships and bases in the North Pacific. American strategy
calls for co-ordinated, pre-emptive attacks to begin against Soviet naval
forces and shore installations even before a major Soviet attack in
Europe or elsewhere. Canadian defence spokesmen have stated that the
participation of a Canadian submarine fleet in these aggressive acts is "an
option".

Nor are Soviet submarines a significant danger to Atlantic shipping.
Almost all Soviet SSN's must be deployed in the far north to protect
their ballistic missile submarines (SSBN's) in their Barents Sea
sanctuary. Only if the burgeoning American naval challenge goads them
into building many new modern, quiet SSNs will the Atlantic lanes be at
risk. For this reason, many American arms control experts have called
for strict limits or even an outright ban on SSN's.

How ironic that Canadian defence policy now reflects discredited
Reaganite doctrines just as the more sophisticated American strategists
are moving in precisely the opposite direction! Will Canada acquire its
attack subs only to find the superpowers have agreed to do away with theirs?

THEY ARE DANGEROUS

A Canadian SSN programme may encourage the nuclear recklessness of
others as well. The highly-enriched uranium fuel necessary to power
the submarine reactors will have to be exempted from the control and
inspection of the International Atomic Energy Agency as mandated by the
Nuclear Non-Proliferation Treaty. Canada has never before
exempted any of its nuclear materials from these controls. At a time
when so many smaller nations are poised on the nuclear threshold,
Canada should be reinforcing rather than weakening its commitments to
the NPT.

There are even more direct nuclear dangers from an SSN fleet.
Submarine reactors use bomb-grade enriched uranium that would for
the first time expose Canada to the risk of nuclear terrorism. That being
so, we might expect as well that the Canadian Security and Intelligence
Service (CSIS) would expand its operations against "suspect" peace and
anti-nuclear groups.

The spent fuel produced by the submarine reactors creates another
hazard. The new bases built for the submarines will require facilities to
remove, store, and transport what is undoubtedly some of the most
lethal radioactive waste on the planet. Where on the B.C. coast will such
an installation be welcomed?

The operation of the submarines themselves represents a radiological
hazard of unknown dimensions. No nation operating nuclear
submarines has ever made public any data about the radiation they
release. But some Japanese scientists have detected significant releases
from transiting American subs, and only this summer a fire aboard a
British submarine (the type being considered by Canada) released
radiation and almost caused a core meltdown.

THEY ARE INCREDIBLY EXPENSIVE

But for many, the most salient argument against the SSN programme is
that it involves a huge diversion of federal funds from civilian to military
purposes. The official cost estimate of $8 billion is simply fanciful, as it
does not include the costs of training or support facilities. It costs a million
dollars just to train one submarine captain! New submarine bases will be
very expensive, all the more so as they must provide for the safety and
security of nuclear materials. Even the special radio communications
system submarines require will cost several hundreds of millions of dollars.
Cost overruns will multiply the price still further. The final purchase price of 138 CF-18A fighters was almost triple the initial estimate. According to a new report released by the French Senate, the Rubis-class subs Canada is considering are already
experiencing cost overruns!

Given our large federal deficit, SSN's for the Navy will mean fewer
daycare spaces, hospital beds, and university places for Canadians. It will
mean more crowded classrooms and longer waits for surgery. It will
mean less money for research and development to keep our scientists
productive and our economy competitive. And it will mean fewer jobs as
well, since many studies have shown that money spent in the military
sector generates only about half the employment produced by non-
military government expenditures.

THEY CAN BE STOPPED

Fortunately, it is not too late to prevent this costly and wrongheaded
purchase. There is opposition to the submarines within Tory ranks, and
even within the military itself, chiefly for fiscal reasons. There is now an
unprecedented opportunity for peace organizations to mobilize broad
community support to change government policy. We must lose no
opportunity to publicize the risks and costs of a nuclear submarine
programme; and to debunk the myth that they are needed for "defence".

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Prof. Derek Paul, Department of Physics, University of Toronto, is Director of Publications. The publication committee consists of Dr. Hannah Newcombe, Peace Research Institute Dundas, 25 Dundas Ave, Dundas, Ont L9H 4E5, Dr. Frances Halpeny, University of Toronto Press, University of Toronto and Assistant Editor Mr. George Hathaway, consulting engineer, 39 Kendal Ave Toronto M5R 1L5
Science for Peace International Network

SPIN was launched in 1985, and now includes some 40 organizations. Its principal objective is the exchange of literature among these organizations, but over time several resource organizations have also begun to supply their literature to members of SPIN. A recent survey shows that a typical organization in Czecho-Slovakia, the Centre of Peace and Disarmament Research, receiving literature from organizations in Austria, Brazil, Canada, FRG, G.D.R., Hungary, Italy, Japan, Poland, U.K., U.S.A., U.S.S.R. and Yugoslavia. The Federation of American Scientists, sending its F.A.S. Report regularly to 22 members of SPIN, is an example of the potential interaction with a resource organization.

Organizations of scientists have always been an important part of the peace movement. The role of scientists was spelled out at a Pugwash Workshop in 1982: to study the technological aspects of the arms race in order to offer expert advice to decision makers; to promote peace education; to monitor destabilizing developments in the arms race and warn the public about them; etc. The latter injunction took on added poignancy after the launching of the U.S. Strategic Defence Initiative in 1983 and its European counterpart EUREKA. The Soviets meanwhile are quietly engaged in researching high power lasers in preparation of their version of Star Wars. The research for SDI in the U.S.A. alone has cost some $30 billion over five years and is engaging a significant fraction of the scientific establishment in a vain technological search for "mutual assured survival".

The resistance to SDI, and to other dangerous developments in the arms race which are global in nature, requires the cooperation of scientists in different countries. The Pugwash Movement is international in scope, but it involves only a very small fraction of the world's scientists. The World Federation of Scientific Workers is by far the largest organization of scientists and engineers who are concerned with the social implications of science and technology. The WFSW strives to maintain peace in the world and to oppose the misuse of science for war. Unfortunately, because of the distribution of its membership and the tenor of its pronouncements, the WFSW is seen by many scientists to be politically biased, and few of them seem willing to join WFSW so as to help restore its balance.

SPIN goes some way towards satisfying the need for a powerful international association of scientists' organizations which have objectives similar to Science for Peace. At present it is coordinated by Prof. Eric Fawoett, and the modest budget is supported by Science for Peace which is ready, however, to surrender this responsibility to an appropriate organization having a stronger base for such networking.

A likely candidate is AFB-INFO, the Information Unit Peace Research Bonn, a Branch Office of the Peace Research Institute Frankfurt. This was set up in 1984 with funding from the government of the F.R.G. in compliance with the Science Council recommendations of May 1983 to perform "information, consultation and mediation functions in the field of peace and conflict research on a national and international level". The unit has a Director and three Assistants establishing links with German, foreign and international peace research organizations.

Blumenfeld Peace Fund Award

The Board of the Franz Blumenfeld Peace Fund has awarded Mr. A. Walter Dorn $750 as support for his efforts to bring about a workshop on the Control of Chemical and Biological Weapons, with emphasis on verification and assured compliance issues. The Board is chaired by Prof. Christian Bay of the Department of Political Science of the University of Toronto with Prof. Cynthia Holzer of the Chemistry Department of the University of Waterloo and Prof. John Buttrick of the Economics Department, Bethune College, York University as members. They commended Dorn's application as "a highly worthwhile undertaking, in our judgment, and, with a realistic budget and with highly professional, carefully prepared supporting documents."

A contingent request for the other grant of equal amount has been approved for February in the event that a supplementary grant from another source fails to materialize.

There are two deadlines for applications to the Franz Blumenfeld Peace Fund, October 1 and April 1.

Armenian relief and reconstruction

An appeal for financial aid for the scientific community of Armenia was adopted unanimously at the December 15 meeting of the Board of Directors of Science for Peace in Toronto. Funds raised are to be transmitted to the Armenian Academy of Sciences to be used at its discretion in relief and reconstruction of scientific life, including assistance in the role played in the Academy as part of the rehabilitation of the Armenian Republic. Preliminary donations from Board members alone amount to about $700, prior to this appeal.

Contributions should be made to Science for Peace and sent to the Assistant Treasurer, Professor Henry Cooperstock, Science for Peace, University College, University of Toronto, Toronto, Ont. M5S 1A1. Please mark on your cheques (or on accompanying notes) that the money is to be used for Armenia.

It is hoped that all will respond generously. SPN members are encouraged to solicit colleagues and friends for contributions. Journalists and other professionals throughout the world have launched major appeals. Scientists should do no less.

Workshop on the Control of Chemical and Biological Weapons

Experts from Canada and other nations will be invited to a one-day workshop on the control of chemical and biological weapons (CBW) April 5, 1989 at the Croft Chapter House, Univ. of Toronto. They will discuss aspects of three treaties: Geneva protocol of 1925, the Biological Weapons Convention of 1972, and the Chemical Weapons Convention (CWC) now under negotiations. This will be coupled with a public education forum at Ryerson Polytechnical Institute-Oakham House to provide an opportunity for a wide audience to attend lectures by the experts. The public seminars in the afternoon of April 4th will address:

1. the history of chemical weapons, warfare and control,
2. technical and scientific facts,
3. detection technologies, and
4. verification and compliance issues.

These will be followed by a Panel Discussion in the evening as part of the Forum on Peace and Justice. The evening program is free, while there is a $15 fee for participation in the Public Forum in the afternoon.

The following day the experts will discuss:

1. technical and political aspects of verification,
2. rolling text of the CWC,
3. responses to violations
4. promoting compliance with the treaties
5. future prospects for a global ban,
6. role of Non-Governmental Organizations.

The workshop is sponsored by the Working Group on International Surveillance and Verification, whose membership includes SPN, Lawyers for Social Responsibility, World Federalists of Canada, Peace Research Institute-Dundas, Group of 78, Veterans against Nuclear Arms, Engineers for Nuclear Disarmament, and individuals with relevant experience.

The objectives of the experts meeting are to survey progress in the field of CBW control, to form a consensus from the thinking of experts, to discuss possible recommendations for the Canadian government and the United Nations, and to publish a report for the dissemination of the conference considerations.
Second International Scientists' Congress
"Ways out of the Arms Race"
Imperial College, London.

Bob Russell who is on sabbatical leave from Simon Fraser at Imperial College reports on the 2nd international conference where he and Eric Fawcett represented SFIP.

On Dec. 2-4, 1988, the Second International Scientists' Congress on "Ways out of the Arms Race" was held at Imperial College, London. The first being two years ago in Hamburg. Organization was done by Prof. Tom Kibble and Dr. John Hassard of the Physics Dept., IC. Having very little outside funding and risking significant personal financial loss, they nevertheless managed an impressive program with 35 invited speakers. Fortunately, the conference turned out to be a success, with over 550 attendees from 24 countries. It is impossible to convey all of the ideas and impressions one receives at such a meeting, but here are some highlights:

Robert McNamara (US Secretary of Defense, 1961-8): This first major talk, on "The State of the Arms Race", struck a positive note. He views the current political environment as the first opportunity in 40 years for genuine dialogue with the Soviet Union and expressed the opinion that there is a good chance for a comprehensive treaty within one year. He went on to detail various elements of START and discuss current aspects of arms negotiations in general.

Roald Segdelev (Institut for Space Research, Academy of Sciences USSR, Moscow): Speaking on the same topic as McNamara and having been told to be prepared to talk about the USSR's alternative viewpoint on arms control, he found himself in the "embarrassing" position of agreeing with almost 100% of what McNamara said. He went on to discuss the 2 outstanding issues in the Geneva 1988 negotiations, SDI/ABM and SLCM.

Josephine Anne Stein (Office of Technology Assessment, US Congress): Her talk on "Scientists and the Arms Race" dwelt mainly with the role and viewpoints of the scientists at the US weapons labs, especially Lawrence Livermore. Most of this material would be quite familiar to those at Simon Fraser University, having heard it presented last year by the SFIP sponsored visitor Keith Miller of the Math. Dept. at UC Berkeley. He had outlined the Berkeley faculty initiative to require that the UC oversight of the weapons labs be done more responsibly.

Wolfgang Schwarz (Institute for International Politics and Economics, Berlin, GDR): Speaking on "Vulnerability of Civil Infrastructures", he gave a vivid description of why social organisms of Europe would be incapable of withstanding military conflicts.

Alexei Arbatov (Head, Dept. of Disarmament Problems, Inst. of World Economy & Foreign Relations, Acad. of Sciences of USSR, Moscow): He spoke on "Emerging Technologies and Stability". He reflected the general Soviet concern that new technological developments like SDI strengthen one's current weapons capabilities, whether they are offensive or defensive, and in large measure do not change the current offensive versus defensive proportion of one's weapons.

Virginia Gamba-Stonehouse (Argentine Macarthur Fellow, Visiting Professor, Univ. of Maryland): An excellent overview of "The Arms Race & the Developing World" was given. She explained the mechanisms generating the current Third World Arms Race, including the increasing global North/South rift, and confirmed the important role which should be played by UN Peacekeeping forces.

Scilla Elworthy (Director, Oxford Research Group): Information obtained by the group involving the "Role of Military Research Establishments" was given.

James Thompson (Psychology Professor, University College London): His talk on "Psychological Disarmament" discussed the importance of understanding psychological aspects such as the "them versus us mentality" and showed graphically how this theme is dealt with in the media.

Rainer Rilling (Professor of Sociology, Univ. Marburg, FRG): His talk, entitled "The Militarization of Science", outlined how military R&D budgets are increasing steadily and how social, civil, and ecologically oriented research is ignored. He expressed a pessimism about this situation in the 1990s unless Science Policy is fundamentally altered. His research is continually hampered by the difficulty of obtaining data on levels of military funding.

Richard Ennals (Principal Lecturer, Kingston College of Further Education): He discussed the UK's scientific environment and the difficulties in "Decoupling Research from Military Applications". He is the Former Research Manager, Dept. of Computing, Imperial College, having resigned his position in 1984 over IC policy regarding SDI funding.

Patricia Lewis (Senior Research Fellow, Verification Technology Information Centre, London): She spoke on "Verification experience of INF & START", and drew certain basic distinctions between scientists' work on arms developments and arms reduction, viewing the latter as much healthier.

Hans-Peter Durr (Director, Heisenberg Institute for Physics, Max Planck Inst. of Physics & Astrophysics, Munich): He explained the "Global Challenges Network" and examples of large-scale problems on which it works, such as on the effort to clean up the Baltic Sea. He is an impressive example of a person who views many global problems as being horrendously but energetically coordinates international initiatives to resolve them.

Frank von Hippel (Prof. of Public & International Affairs, Center for Energy & Environment Studies, Princeton): In a summarizing talk on "Scientists Contributions to Disarmament" he emphasized the need for scientists to work independently in two areas: Challenging experts who rationalize the arms race and making alternatives more creditable. He also announced the new journal "Science & Global Security", to be published in both English and Russian.

Sergei Kapitsa (Head of Lab, Inst. for Physical Problems, Academy of Sciences of USSR, Moscow): This other summarizes talk on "Security via Interdependence" reiterated the theme that in the procedure of verification will create a whole new attitude. It was stressed that most current agreements were bilateral and that an international agency, perhaps the UN, was needed to set standards for things like the nuclear industry. He used universities as examples of institutions which should be seats of interdisciplinary research but which instead inhibit "global thinking" making it almost impossible to even study or do research about the larger issues.

Maj-Britt Theorin (Ambassador, Ministry for Foreign Affairs, Stockholm): Speaking on "The Way Forward", she expressed some optimism due to the improved state of many world conflicts and the new UN roles and outlined the various tasks which still need attention, such as "controlled non-testing"("versus "test control"), a comprehensive ban on chemical weapons, and the arms race in space.

Dorothy Hodgkin (Emeritus Prof., Oxford; Nobel Laureate for Chemistry, 1964): Her "Closing Remarks" gave a touching personal note to the end of the conference.

There was a large, well attended poster session. One of considerable interest was presented by E. Vamunu, which included a petition for the release of his brother by the Israeli government a topic covered in a recent SFIP Newsletter. Eric Fawcett had an excellent presentation on Peace Net and SFIP, which made my own SFIP posters look amateurish.

The conference left everyone with many things to think about. There were reasons for pessimism, such as the enormity of the world's ecological problems, and for optimism, such as the viewpoint expressed by many speakers that there is currently a political climate for truly cooperative global approaches in resolving differences. For an SFIP member like myself, who has not attended many international meetings of this type, it was the opportunity to meet many courageous and warm people (such as SFIP's Founding President) and to strengthen my resolve.

Bob Russell
The New Brunswick Chapter

Our Chapter did not take long to recognize and copy a good idea; the Ottawa Chapter's promotion of Peace via awarding a prize at the National Science Fair. In common with other chapters, we view our role as being primarily educational. In that context we particularly encourage any possibility of talking or otherwise communicating with young people not only to alert them to the dangers of wars fought with weapons of mass destruction, but also to assure them that there is cause for optimism. Sponsoring a prize at the N.B. Science Fair allows us to fulfill many of our objectives.

The N.B. Science Fair is organized and hosted in alternate years by l'Université de Moncton and the University of New Brunswick. It is a bilingual fair open to all high schools and junior high schools in the province. It is supported by several governmental agencies and other organizations such as the N.B. Teachers Association. The N.B. chapter of SFP has made available two $50 prizes, one for senior high and one for junior high students. We offer these prizes to anyone project which deals with the danger that weapons of mass destruction pose to humanity, and which promotes peace.

In the fall of each year a list of all prizes, and applicable judging criteria, is circulated to all junior high and senior high schools in the province, which allows potential participants to select the area in which they wish to compete. In this way teenagers not only get to know that Peace is an issue of broad concern, but also that it is worthwhile to devote some time and effort to it.

The Provincial fair has attracted 170 exhibits. In addition, 70 volunteer judges from all walks of life, numerous presenters of prizes, and government officials (both Premiers Hatfield and McKenna have acted as Honorary Chief Judges) have participated. Parents and friends of the exhibitors and the public have been enthusiastic visitors. As a consequence the fair has been given ample media coverage in the province.

In summary, it is our view that by sponsoring peace prizes at our provincial science fairs, we promote peace and the notion that science should be used for the betterments of humanity and not to its detriment to a wide important and increasing audience.

Any one wishing further information about the fair or the N.B. chapter should contact the writer or Prof. G.P. Semeluk, Department of Chemistry, University of New Brunswick.

I. Unger, President,
New Brunswick Chapter, Science for Peace.

Edmonton Chapter

Wytrze Brouwer has written from Edmonton to say that they started a chapter of SFP last year at the University of Alberta, but it appears that the correspondence got lost in the shuffle. The executive of SFP is pleased to add this group to the organization.

New Book:

*Understanding War*, by John McMurtry

was published this month. It is a paperback, available to members of SFP at $5 free of postage for multiple copies.

"The human struggle for survival is, at this juncture . . . , no longer against nature or foreign enemies or even war as such, but against the military program itself"

Publications available

The following papers are available from Derek Paul, Director of Publications, Physics Dept., University of Toronto, Toronto M5S 1A7

W. Dorn and D. Paul (June 1983)

The brief of Science for Peace to the Third United Nations' Special session on Disarmament, 6 pp, and the verbal summary of the same brief as read to the Committee of the Whole, 2 pp.

W. Dorn (Peace Magazine Oct./Nov reprint)

PAXSAT: A Canadian Contribution to Arms Control 2 pp

W. Dorn (Workshop report Sept 1987)

Satellite and Airborne Surveillance: for arms control verification, crisis monitoring and sovereignty purposes. 30 pp

W. Dorn (Brief to the House of Commons Standing Committee on Research, Science and Technology, May 1987) A Role for the Canadian Space Agency in Developing Surveillance Technology for Peacekeeping, Arms Control Verification and Sovereignty.

W. Dorn (Workshop report Oct 1986) Peacekeeping Satellites. 8 pp

W. Dorn (July 1986) Directory of Canadian Scientific Expertise: peace and security aspects. 70 pp

E. Ehrensaft (1988) A Nuclear Watergate: West Germany's "Transnuclear Affair" (abridged version) 4 pp


E. Fawcett and D. Paul (Feb 1987) Conventional and Chemical Disarmament as Confidence-Building Measures leading to Nuclear Disarmament. 3 pp


G. W. Hoffmann (Discorder Oct 1987 Vol V No 9 preprint) Miniterviews. 3 pp

G. W. Hoffmann (Bulletin of Peace Proposals Vol 8 No 1 1987 reprint) A Theory of War and a Strategy for Peace: Selective Societal Processes and Communication between Nations. 6 pp

G. W. Hoffmann (Oct 1986) The Use of the Chess Clock in Formal Discussions and Debates. 1 pp

T.C. Hutchinson and J. Chouinard (Aug 1987) Environmental and Agricultural Consequences of a major Nuclear Power Plant Accident. 49 pp


G. W. McGrenere (May 1985) Why are we stalled?? This unpublished paper was circulated and read at the Conference on European Security in Toronto May 1985

D. L. Parnas (Aug 1987)

STEP at Queen's. A proposal to establish an institute "Science and Technology Educating the Public" at Queen's University. 3 pp

D.L. Parnas (1988) Building Helpful Fences

D. Paul (Sept 1987) Peace Research (a preprint) 24 pp


D. Paul (Sept 1986) To Stop or not to Sop the Nuclear Arms Race: Comments on a Comprehensive Nuclear Test Ban. 12 pp

D. Paul (July 1986) Measures that may help to bring about disarmament in the 1980's. 16 pp

D. Paul (1985) Radioactive air monitoring as a verification measure to complement seismic monitoring of a Comprehensive Test Ban Treaty. 10 pp

G. R. Pharand and W. F. Rudmin (June 1988) US invade Canada? A Phenomenology of Paranoiac Process in International Relations. 6 pp

L. Sobrino

The US Strategic Defense Initiative: should Canada participate? 8 pp

SfP looks to the future

SfP was formed in response to an uncertainty of a future for the world. As 1988 came to a close Science for Peace Members looked to the new year, keeping in mind the decade about to come, followed shortly by a new century and a new millennium. The events of 1988 made the probability of celebrating 2001 less certain. For this issue of the bulletin, Tony Arrott asked those on BITNET and those at the December Board Meeting in Toronto to reflect on the role of SfP in the changing international relations.

"For the New Year's issue of the Science for Peace Bulletin, it might be useful if each member of the board and the executives and various chapter representatives were to write something of a New Year's wish for what they would like to see us accomplish in the coming year. This could be anything from a few words to a page. George Spiegelman suggested this at an executive meeting and it was well received.

We might reconsider the purposes of Science for Peace: to what extent are they actions as a coherent group and to what extent do they provide support for individuals who wish to carry out initiatives with the approval of a recognized body. In the early eighties, the threat of nuclear war struck the hearts and minds of us all. Is this still the main thrust? Or is it now more the misuse of resources, such as scientific talent and national wealth?

I would like to encourage each of you to think about this and respond over the Holidays."

The responses received are given here. Perhaps the bulletin can serve as a forum for further discussions. As was George Spiegelman's suggestion, it is suitable to start with his response:

George Spiegelman:

Here are several of the thoughts I have on entering the new year.

First, we are faced with having many people believe that disarmament is happening. While I believe this is a delusion, it would probably be unwise to plan a massive street demonstration. More pertinent is the mountain of work we have here. As we enter the new year, a great deal of work is needed.

Creating policy would not be easy for us, but it seems to me to be important in the long run. A key area of the importance of policy is as a concrete alternative to more conventional viewpoints (of which the Government's White Paper on defense is an example). It seems to me that we need to have a Unified Theory of Peace-or at least parts of one (a key element of such a theory would be the Canadian perspective). Balance for the proliferating policy being created by "right wing think tanks" is desperately required.

A second question we might take more time to consider is what is going on with Canadian universities. A nationwide campaign for courses for science students dealing with disarmament might be interesting. This is a complex issue: are these peace studies? are these ethics courses? are these history courses? (Herbert York, whom I met last year in California, favored the latter). I might note that there is a lot going on in the field of Peace Education in Canada, much with which we should be more involved.

Thirdly, we have the problem that what appears to be progress, is not. The "good will" surrounding the INF treaty is not going to slow the arms race and issues such as the Third World development; whether Gorbachev can pull it off in the Soviet Union; the dramatic restructuring of international economic communities, and the environment, each have the capability of making the next 5-15 years dangerous. Should we diversify our concerns? Is there an over-riding problem other than nuclear arms, or another way to approach the issue of nuclear arms? Is there a way to reinvent popular concern about the issue of nuclear weapons? I sometimes think we should simply try to re-run the early literature all over again. I would certainly like to get the cruise testing agreement canceled.

Fourthly, we should examine the structure of SfP. The realization that in most chapters there are fewer than 10 really active members brings to mind two alternatives. We could be like the Union of Concerned Scientists, which is highly centralized (we could have a few centers) with small cadres and larger group who participate through donations. Alternatively we could be a group of groups of like the way we operate now. The decentralized format should lead to more direct involvement. However in many places there is not a critical mass of active people for a group and this may not be the time to try to build these groups. Nationally directed ideas and plans might have more impact and be able to attract more casual members. The question of whether we want to create policy is clearly bound up in this.

Finally, there is the question of research. How much should we get into "original" research? We might view our role as publicists for research. CIIPS is currently publishing good background papers and reports. Should we try to compete with them, or should we contribute otherwise? I would prefer the latter using study groups to prepare summary reports. What are important topics, particularly ones directly involving Canada? We need to capitalize on the Arctic Conference with an active study group. The issue of the submarines ranks high.

As one of my resolutions, I'll promise a rapid reply to any response to any of the above thoughts.

Tony Arrott

What can we as an organization do to increase the level of responsibility of scientists?

To what extent can we influence scientists who have already embarked on a career in which the military-industrial-educational complex is the main source of their livelihood?

To what extent can we influence a future generation of scientists not to follow the bad examples of the past?

Some have suggested courses in ethics for scientists and engineers. In many cases the engineering professions have insisted on some response from the engineering school. Ursala Franklin has argued for required courses at the first year level for all entering students in science and engineering.

Herbert York looked into introducing concern for responsibility into the curricula of the University of California system. He has concluded that teaching of ethics by philosophers is not the answer. He has argued that students need to know history, in particular history from the 1930's on, taught by scientists with a knowledge of that era.

I would like to see such a history course required in every science faculty in Canada. That course would put the atomic age in perspective with regard to the social and political conditions from 1914 on. The course would be taught by new scientists for scientists. The text might be called The Atomic Age.

We all agree that the energy of the atom has changed the world. We have the possibility of ending life. We have possibilities for enhancing life. We recognize our fundamental dependence on hydrogen to helium conversion for sustaining life. We have atomic power. The only argument is the proper location of the hydrogen reactor. Many would keep it 150 million kilometers away. All agree that we should maintain the ozone shield from that reactor.

Sustaining life, access to power sources, and the preservation of the environment are all important issues of the atomic age about which each generation should form informed opinions. The availability of cheap energy can lead to the emancipation of mankind provided we have the societal structures that channel that energy for the benefit of all. Enhancing the quality of life through the abundance of energy can be termed economic justice.

Derek Paul:

We seem to be in an age where three concerns are paramount: ecology, ending the arms race, and economic justice within and between countries. Ecology is starting to attract much appropriate attention; ending the arms race has been the prime concern of groups such as ours all along; but economic justice, despite decades of foreign aid, not all of it unsuccessful, needs much more attention. Women have for decades regarded it as a necessary condition for peace. There is much to learn and basic work to do on economic justice.
Sally Curry wrote from Geneva where she serves as secretary of the World Information Clearing Centre for Peace, Arms Race, Disarmament and Other Global Problems giving her thoughts on the Eve of the New Year. She said in part:

Sally Curry:

From my experience and a wide range of international contacts in my work I submit the following: if the masses of the people, everywhere in the world, are so little aware of the basic problems concerning their common future, this situation stems primarily from the fact that neither governments, nor non-governmental organizations (NGO's) (such as trade unions, religious organizations, physicians, peace, environment and human rights organizations, teachers, journalists, women, youth and others), nor scientists (whose major role in helping humanity resolve its crucial problems is widely recognized) have so far utilized their enormous potential to inform the people and to coordinate their support for the solution of vital problems.

Looking back on the past year's activity of the World Information Centre, I have arrive at two conclusions. Firstly, for reasons referred to above, the Centre - the main purpose of which is the development of a New World Information System, has not been able to fulfill effectively the tasks with which it had been entrusted by some particularly motivated NGO's. Secondly, the people in all parts of the world need reliable and understandable information relating directly and concretely to their present life, but also to their expectations for their future and that of their children.

To "launch a universal crusade to save the planet"? Yes! Indeed who could object to this idea? But does a "crusade" not imply full involvement of the masses of the people? In this respect how can people come to realize consciously the terrible dangers surrounding the very survival of their children? How can they have a clear vision of a safe, clean and peaceful planet if this image is not consistently and dynamically conveyed to them, through all channels of communications, by governments, non-governmental organizations and scientists?

Mike Pearson:

I agree with you that the threat of nuclear war is receding and that as it does so other problems, notably environmental, are becoming more conspicuous. Perhaps it might be true to say that the world's nuclear arsenal is itself being recognized as just one facet of an overall global problem.

Nevertheless, I feel that there is still a grave danger that the entire process of moving towards nuclear sanity could unravel. Specifically, I am afraid that the West might still underestimate Gorbachev by letting too many of the opportunities that he is presenting us with slip by. Threatening gestures such as a unilateral breach of the ABM Treaty through deployment of even a rudimentary SDI could be equally disastrous.

Thus I feel that the need for vigilance on the part of people with some degree of expertise is as great as ever. Even in a specifically Canadian context there is much to be done. One particular example that comes to mind is the issue of cruise testing in Canada. Another concerns tritium exports. I must confess that I have lost track of what is going on here.

Personally, I believe that projects of this sort could easily absorb all our limited resources. Thus I am opposed to any immediate broadening of our range of activities to include environmental concerns, the more so since there already exists several highly competent Canadian organizations active in this field. On the other hand, there is no other organization that could handle specifically peace-related issues.

Nevertheless, I would whole-heartedly support merging with environmental bodies to form some umbrella organization on the lines of UCCS. Maybe we could simply consider setting up a branch plant of UCCS, since that is going to be the trend. But in the meantime we should not spread ourselves too thin.

Paul LeBlond:

In the past year or so, and mostly because of Mr. Gorbachev's initiatives in the wake of the INF agreement, international tension between the US and the USSR has decreased considerably. The great fear of a nuclear holocaust has nearly vanished from public discussion. One of the consequences has been a waning of interest in peace activities.

I think that Science for Peace should welcome this new situation. There is something much more fundamental in our purpose than reacting to a panic situation. I suggest that Science for Peace expand its scope of activities to include concerns other than the technological and scientific aspects of military confrontation. There are many other aspects of human activity where science impacts on peace: the environment, communications, etc. If we are to have a lasting effect on our profession through our colleagues and our students, we must go beyond being another "peace group" lobbying the government about arms control. We must inculcate in scientists a social conscience! Our social responsibility in science for peace might be framed in terms of training scientists to think of the downstream consequences of their work with respect to peace via a wide variety of applications.

May I suggest that Science for Peace take the lead in setting up discussions in Canadian scientific and technical associations on the consequences of science for peace? It is my belief that a adequate forum would join forces with groups already active in "science and society" concerns to whom we could bring considerable strength: this collaboration would also enhance our effectiveness.

These thoughts are off the cuff and may be overly provocative because they take no account of work already underway and ideas expressed by many of our colleagues. My intention is to provoke discussion, not to criticize anyone. Perhaps a series of workshops within Science for Peace on how we should (if at all) expand our scope and what measures we should take to be more effective . . . ?

Lynn Trainor:

While we are still not out of the woods on the possible use of weapons of mass destruction and the creation of "enemies" by the large weapons manufacturing establishments, I do sense that a turn around is taking place. I was impressed by a recent video hookup of two classrooms, one in the US and one in the USSR, which were a joint effort of CBS (I believe) and the USSR television networks. The goodwill between students and teachers on both sides seemed to me powerful influences pitched against the arms trade.

To some extent I believe there is something like an "Earth Intelligence" that is too big for anyone of us to see clearly, but which influences us all as we are part of it. There is a growing awareness that some really big problems are common problems, like overpopulation, resource depletion, global pollution and insecurity among the world populations. Now an important question is whether the solutions must in large part be scientific solutions, which we rather defensively like to believe, or whether it is inherent in science to contain the seeds of our destruction. There was an impelling book written in the early fifties by the French philosopher Jacques Ellul, called The Technological Society, which argues that in whatever field technique takes over and drives events inevitably in certain directions - an evolutionary landscape from whose valleys one cannot escape. His solution to turn to God is not my personal piece of cake, and I am not sure what God is supposed to do in any case. But aside from a probably last minute appeal to God, the rest of the book is brilliant analysis, is somewhat sobering.

Perhaps one direction for Science for Peace is to examine the questions raised by Ellul, which oversimplified might read, "is science ultimately a hope or a despair?" I know I am naively to raise this issue at all, but our lives may depend on it.

On this happy note let me return to my usual optimistic stance and wish you and the Vancouver Executive a good festive season and a successful new year in working for the broad issues of peace, including inner peace!