

Current Comments

The Pugwash Conferences on Science and World Affairs: Twenty-Two Years in Search of Peace

Number 26

June 25, 1979

The recent accident at Three Mile Island has once again raised the issue of the social responsibilities of scientists. Many lay people believe that scientists pursue applications of their research, heedless of the effects of their discoveries upon society. Such people are quick to point out the undesirable by-products of applied science to support this generalization. They paint an image of scientists without consciences.

But the scientific community has always had its "conscience." Leonardo da Vinci did not publish his design for a submarine for fear that his invention would be used in warfare.¹ In this century, J.D. Bernal recognized that scientists are inextricably involved in questions of peace and war.² (p. 165-190) Unfortunately, his own political philosophy made him and others, like J.B.S. Haldane, less than effective spokesmen for science.

Perhaps the most interesting aspect of the controversy over recombinant DNA research was the fact that scientists "blew the whistle on themselves."³ But this example of scientists accepting responsibility for the possible consequences of their research is not unusual. In 1945, Hyman H. Goldsmith and Eugene Rabinowitch founded the *Bulletin of the Atomic Scientists*, a monthly publication that calls attention to potentially dangerous applications of nuclear technology. In 1949, Victor Pashkis founded the Society for Social Responsibility in Science.⁴ This group, which

counted several Nobel laureates among its membership, held annual conferences until 1975.⁵ The Scientist's Institute for Public Information is yet another group of scientists that provides a forum for scientists interested in the social consequences of their research.

There is also a group of socially aware scientists whose membership is international in character, and whose concerns are global in scope. These scientists gather annually at the Pugwash Conferences on Science and World Affairs. Few lay persons have ever heard of the Pugwash movement. Yet for the last 22 years, Pugwash scientists have been trying to persuade the governments of the world to renounce war in general and nuclear weapons in particular.⁶

Pugwash traces its beginnings to a declaration drafted in 1954 by Bertrand Russell. The declaration was subsequently endorsed by eleven prominent scientists, including nine Nobel laureates. (See Figure 1.) The declaration warned that nuclear weapons threatened the very existence of humankind, and called upon the scientists of the world "to assemble in conference to appraise the perils that have arisen as the result of the development of weapons of mass destruction."⁷ One of the first people Russell approached to endorse the document was Albert Einstein, who signed it just two days before his death.⁸ (p. 2) The declaration has been known ever since as the Russell-Einstein Manifesto.

Figure 1: Signers of the Russell-Einstein Manifesto. Nobel prize winners are indicated. The year of prize and area of award is also given. Country in parentheses is county of residence at time award was given. For non-award winners primary country of residence is listed.

Name/Country	Year of Prize	Area of Award
Max Born (UK)	1954	Physics
Percy W. Bridgman (USA)	1946	Physics
Albert Einstein (Switz)	1921	Physics
Leopold Infeld (Poland)		
Frederick Joliot-Curie (Fr)	1935	Chemistry
Hermann J. Muller (USA)	1946	Medicine
Linus Pauling (USA)	1954	Chemistry
	1962	Peace
Cecil F. Powell (UK)	1950	Physics
Joseph Rotblat (UK)		
Bertrand Russell (UK)	1950	Literature
Hideki Yukawa (Japan)	1949	Physics

In response to Russell's call, 22 scientists from ten countries assembled in the Canadian village of Pugwash, Nova Scotia, in July, 1957.⁹ They discussed the radiation hazards of atomic weapons testing, disarmament, and the social responsibilities of scientists. According to physicist Joseph Rotblat, one of the founders of the Pugwash movement, "This was probably the first time that a truly international conference, organized by scientists, with participants from East and West, was convened not to discuss specific technical matters, but the social implications of scientific discovery.... The first Pugwash conference proved that scientists have a common purpose which can transcend national frontiers without violating basic loyalties."⁸ (p. 6)

The conference established a Continuing Committee to plan future meetings. Sixteen subsequent conferences were held at irregular intervals during the first ten years. Since 1967, Pugwash has met once each year.

Over the years, Pugwash has addressed itself to an expanding agenda of issues. One of the main non-nuclear issues Pugwash discussed soon after its formation is the threat to peace posed by the material disparity between the industrialized nations and the Third

World.⁸ (p. 26) Pugwash conferences have also focused on such issues as world food production, population growth, and international transfer of technology.

Pugwash's activities regarding international development led to the establishment of the International Centre for Insect Physiology and Ecology (ICIPE) in Nairobi, Kenya. This institution was formed after Carl Djerassi, professor of chemistry, Stanford University, presented a paper to a Pugwash Conference in 1967.¹⁰ Djerassi's idea was to establish "centres of excellence" in under-developed nations. These would be first-rate research facilities for specialized disciplinary areas.¹¹ Pugwash has discussed the establishment of other groups like ICIPE.¹² But Pugwash representatives stress that disarmament and world peace remain the movement's major goals.

The Pugwash movement today is a loosely organized union of autonomous national groups under the umbrella of an international Pugwash Council. The Council develops the agenda for the yearly conferences. Its 23 members are elected every five years at Pugwash conferences. Seats on the Council are apportioned among various geographic "constituencies." This helps insure that

all parts of the globe that have national Pugwash groups are represented on the Council.

Thirty-three countries have active Pugwash groups (see Figure 2), although scientists from about 75 countries have participated in Pugwash conferences at one time or another. Most of the national groups are self-supporting, but the international Council does subsidize the activities of some groups from the under-developed world.¹³

Figure 2: Countries that have active Pugwash groups.

Australia	Italy
Austria	Japan
Bangladesh	Mexico
Belgium	Morocco
Bulgaria	Netherlands
Canada	New Zealand
Czechoslovakia	Norway
Denmark	Pakistan
Egypt	Poland
Finland	Rumania
France	Sweden
Germany (Democratic Republic of)	Switzerland
Germany (Federal Republic of)	USSR
Ghana	UK
Hungary	USA
India	Yugoslavia
Israel	

The American Pugwash group is an amorphous body consisting of any American who has ever attended a Pugwash conference.¹⁴ Not all of these 150 or so people are still active in the movement, nor are they all scientists. On occasion, Pugwash invites experts in world affairs to the conferences to share their political insights. Henry Kissinger participated in several Pugwash conferences before becoming Secretary of State.⁸ (p. 104) Therefore, he is counted among the "membership" of the American Pugwash group.

The activities of the American group are organized by an eight-member Pugwash Committee of the American Academy of Arts and Sciences and the National Academy of Science (NAS). It is

co-chaired by Abram Chayes, professor of law at Harvard University, and physicist Bernard T. Feld of MIT, who is also editor-in-chief of the *Bulletin of the Atomic Scientists*. The committee members are appointed by the president of the American Academy of Arts and Sciences. Figure 3 lists the committee members with their institutional affiliations.

The national groups decide who among them will attend the annual conferences. Usually, the most prominent or senior scientists from any national group are selected, although a number of the groups make it a point to involve younger scientists as well. The scientists who go to the conferences are chosen because they are the most technically competent to handle the topics under discussion. Pugwash attendees also assert that a gathering of people who are among the international scientific elite promotes mutual respect and trust.¹⁵

The national groups can, on their own, organize symposia to discuss specific topics. These topics are usually selected from a list prepared by the international Council. However, the national groups are free to organize symposia on subjects entirely of their own choosing, although these subjects must be approved by the Council. Recent symposia in various countries have discussed such topics as feeding Africa, social values and technological choice in an international context, and dangers of nuclear war by the year 2000.^{16,17,18}

The national groups are also responsible for raising money to finance Pugwash activities. As a non-official body, Pugwash depends on contributions from a variety of sources. In the movement's early days, Cyrus Eaton, the Cleveland industrialist and philanthropist, all but single-handedly financed the conferences.⁸ (p. 3-4) As the movement grew, Pugwash found other sources of funds. Today, some national groups are able to obtain support from their governments.

Figure 3: Members of the Pugwash Committee of the American Academy of Arts and Sciences and the National Academy of Science.

Name	Discipline	Affiliation
Abram Chayes	Law	Harvard
Carl Djerassi	Chemistry	Stanford
Paul M. Doty	Chemistry	Harvard
Bernard T. Feld	Physics	MIT
George B. Kistiakowsky	Chemistry	Harvard
Thomas F. Malone	Meteorology	National Academy of Sciences
George W. Rathjens	Chemistry/Political Science	MIT
Herbert F. York	Physics	Univ. California, San Diego

Others receive contributions from national academies of science. The American Pugwash group, through its sponsoring organizations, receives contributions from foundations, individuals, and corporations. Members and officers of the Pugwash Council and the national groups are not paid for their work.⁸ (p. 14)

The annual conferences are the chief activity of Pugwash. They take place all over the world and usually last for about five days. About 100 scientists now attend each conference.⁸ (p. 25-6) These participants represent the elite of the international scientific community. Participants are invited, although not required, to submit papers of interest to the Pugwash conferees. These papers are distributed before the start of the conference.

After the opening plenary sessions, the participants split into "working groups" of about 20 people. Each working group discusses a single topic on the conference agenda in meetings that take up about half the time of a Pugwash conference. Topics include technical aspects of disarmament, current conflicts between nations, and environmental pollution. After the discussions, each working group prepares a summary of its topic and reports to a full session.

Working groups are private; debates at these sessions are not made public. This promotes candor among the conferees and encourages them to voice novel opinions without committing themselves or their governments. For the same reason, discussions at the

plenary sessions are also confidential, and reporters are barred from most of the conference proceedings. Statements released from the conferences to the press are never attributed to individuals.⁸ (p. 20-1)

The private nature of the conferences poses a problem for those attendees who want the public to know about the movement's activities. Pugwash lacks press coverage, perhaps because the only information to come out of conferences is the formal statements of the Pugwash Council. Also, the media may avoid sending reporters to conferences they cannot observe first-hand.

I first became familiar with Pugwash through my friend Dr. Martin Kaplan. Martin was a research associate at Philadelphia's Wistar Institute in the mid-1960s. About five years ago, he asked me to visit the World Health Organization (WHO) to consult with him and his colleagues on expanding the role of WHO in disseminating information to the developing countries. He was director of medical research, and my old friend Seymour Taine was the librarian. During my visits with him in Geneva and Philadelphia, Martin told me about the Pugwash program. When he retired from WHO, he became the first full-time director general of Pugwash at its main office in Geneva. (Pugwash has also kept a small office in London.)

The only periodical I know of that regularly covers Pugwash activities is the *Bulletin of the Atomic Scientists*. Its longtime editor, the late Eugene Rabinowitch, was an early Pugwash ac-

tivist.⁸ (p. 1) The *Bulletin* publishes statements issued at Pugwash conferences and general comments by authors associated with the movement. Aside from the *Bulletin*, Pugwash receives very little media coverage in the United States.

Acutely aware of the lack of coverage that the conferences receive, Pugwash leaders have tried to improve their standing with the press. In 1968, for example, Pugwash let a few science writers attend the plenary sessions of the conference in Nice. Joseph Rotblat, former secretary-general of Pugwash, was satisfied with the results. He wrote that although "their exclusion from the working groups naturally caused resentment...the science writers performed their tasks conscientiously, and the reporting was indeed much better than for many previous conferences."⁸ (p. 74)

In the 1969 conference in Sochi (USSR), eight science writers were again invited to attend. This time, they were allowed into the working sessions. Rotblat writes: "The science writers did not abuse this privilege in their reporting of the conference, which was again quite extensive."⁸ (p. 76)

But the practice of inviting science writers to the conferences was suspended the next year. Rotblat explains: "The scheme ran into difficulties...since the United States Organizing Committee found it difficult to select a few science writers from the very large number available without offending the others."⁸ (p. 20-1) Reporters are now permitted to attend only the opening plenary sessions and the closing ones. However, press briefings are held periodically during the conferences.

Rotblat's book, *Scientists in the Quest for Peace: A History of the Pugwash Conferences*, is his attempt to stimulate public interest in the movement. The book presents the formal statements issued at each conference up to 1971 and names all conference participants. In accordance with Pugwash

policy, Rotblat provides no details on the debates that led to the statements adopted. In reviewing the book, Herbert Winnik, of St. Mary's College of Maryland, complained: "The public is kept from knowing individual viewpoints, their interaction, and the human process of reaching an agreement.... The reader sees the antiseptic distillation but learns little of the real inner workings of Pugwash."¹⁹

Pugwash tells its members and other interested people about its activities through the quarterly *Pugwash Newsletter*. The *Newsletter* usually contains a report from Pugwash's director-general, Martin M. Kaplan. The *Newsletter* presents reports on symposia and various Pugwash workshops. The July 1978 issue describes a tour of a US Army chemical munitions destruction facility by the Pugwash Workshop on Chemical Warfare.²⁰

Published proceedings of the Pugwash conferences are available to conference participants, national governments, and a few international organizations. They are also available to a few scholarly libraries, and they are now covered in ISI's *Index to Scientific & Technical Proceedings*TM (*ISTP*TM) and *Index to Social Sciences & Humanities Proceedings*TM (*ISSHP*TM). These proceedings contain the speeches made at plenary sessions, reports issued by the working groups, and papers submitted by participants at the start of the conference. In accordance with conference rules, however, the proceedings contain no account of the discussions either at the plenary sessions or within the working groups.²¹

Since information on the subject is scarce, observers of the movement can only speculate about what goes on at a Pugwash conference. Some observers are skeptical of the movement's ideal of bringing scientists together "not as citizens of this or that country...but as human beings, members of the species man."⁷ Andrei Sakharov, the Soviet physicist who won the Nobel Peace

Prize in 1975, wrote: "For many years and with sustained attention, I have been following the work of the Pugwash conferences.... Unfortunately, one has the impression that the conferences are often no more than a way of unofficially sounding out government positions."²²

Sakharov's claim has been borne out on at least one occasion. In 1977, the *New York Times* reported the Soviet government's policy change on a treaty to ban production of chemical weapons. The Soviets previously opposed on-site inspections to enforce the treaty. The *Times* reported they were now willing to change their stand. The first inkling of this development came in a statement made by a Soviet scientist at a Pugwash conference.²³

Harry Alpert of the University of Oregon asserts that "many Pugwash debates are engaged along ideological, political, or national rather than scientific or rational lines."²⁴ One finds hints of this from the Pugwash literature itself. The statement of the Continuing Committee on the Pugwash conference held in Nice in 1968 reports "lively debate...on the most burning issues."⁸ (p. 301)

The most burning issues that year were the American involvement in Vietnam and the Soviet intervention in Czechoslovakia. The working group on Current Conflicts discussed the issues and presented the conference with the "limits of the agreement which the working group found it possible to reach." On Vietnam, the limits of that agreement stopped short of calling for the withdrawal of US troops. The report on Czechoslovakia included an expression of "great sympathy" for the Czechoslovak people along with this remark: "Some speakers stressed that these events [the Soviet intervention] were being exploited by circles opposed to the cause of peace."⁸ (p. 301-19)

An explanation for the apparent inability of many Pugwash scientists to divorce themselves from political

allegiances can be found in this statement by Jean-Jacques Salomon: "A reading of the lists of participants in the Pugwash conferences is enough to pick out the names of the scientists or political observers who are officially or unofficially linked with political decision-making bodies whether in the East or West."²⁵ One such link is Pugwash Council member A.T. Balevski, who is president of the Bulgarian Academy of Science. Balevski also sits on the Central Committee of the Bulgarian Communist Party. Several members of the Pugwash Committee of the American Academy of Arts and Sciences and the NAS served on the President's Science Advisory Committee, including physicist Herbert F. York and chemist Paul M. Doty. G.B. Kistiakowsky, an American who sits on the international Pugwash Council, also served as special assistant on science and technology to President Eisenhower.

The close connection between certain Pugwash scientists and their respective governments, however, is viewed by the movement as an asset and is encouraged. Bernard Feld of the American Pugwash group says, "We always like to have a sufficient number of people who are able to communicate with the government in an advisory capacity so that when we have a message...we can get it into the system."¹⁴

Indeed, Pugwash can point to instances where the movement was able to influence the course of political events. For example, few know that in 1967, at the height of the US military involvement in Indo-China, French Pugwash scientists briefly served as a conduit for secret negotiations between Washington and Hanoi.²⁶ The negotiations collapsed after a few months. But considering the inflexibility of both sides at the time, bringing them together to negotiate peace was a striking accomplishment.

More recently, Pugwash claims success in its fight against the deployment

of the neutron bomb in Western Europe. Pugwash opposes the neutron bomb, as it does all tactical nuclear weapons, because such "mini-nukes" make nuclear war more likely. A recent *Pugwash Newsletter* reported, "Also noteworthy was a special statement on the neutron bomb issued in the Netherlands by the Dutch Pugwash group which undoubtedly influenced the decision by the Dutch government opposing deployment of the bomb."²⁷

Pugwash also claims to have influenced governments to sign the Nuclear Non-Proliferation Treaty and the Partial Test Ban Treaty of 1963. Linus Pauling, who won the Nobel Peace Prize in 1962 for his opposition to atmospheric nuclear weapons testing, signed the Russell-Einstein Manifesto. Pauling points out that his efforts, primarily aimed at mobilizing public opinion, may have been helped by his attendance at several Pugwash conferences.²⁸

The Pugwash literature says the movement brings about other intangible benefits. According to Director-General Kaplan, "Pugwash's greatest service toward world peace may have been to open up, and to keep open, channels for discussion of extraordinarily complex and sensitive issues between scientists of all socio-economic persuasions, with the central aim of avoiding nuclear war."²⁷

Nevertheless, the *Newsletter* that reported the activities of the Dutch Pugwash group did not say how these activities were translated into government policy-making. Nor do Pugwash

participants describe just how they influenced events leading to the signing of international treaties.

Despite whatever progress Pugwash has made toward disarmament and global security, the movement freely admits that it doesn't stand much closer to these goals now than it did at the time of the first Pugwash conference. Indeed, to quote physicist M.A. Markov, chairman of the Soviet Pugwash group, "The arms race is continuing and even accelerating, contrary to all logic."²⁹

If Pugwash is to stimulate public interest in the movement, it must become more open about its activities. It must also be more aggressive about promoting the recommendations of its various conferences. Perhaps it is time for Pugwash to become more open in terms of participation. Younger scientists are occasionally given the chance to participate in the conferences. But for the most part, the movers and shakers of Pugwash are the same faces, the inbred elite. Perhaps an infusion of younger members would give new life to what by now seems to some to be an aging movement.

Certainly the American group ought to better represent American science, geographically and otherwise. While Pugwash could always draw upon the expertise of individual members of the NAS, it would seem reasonable, in the age of recombinant DNA, to have at least one biologist in the group. Pugwash also seems to need the counsel of a few experts in communicating and disseminating information both within and outside the scientific community.

©1979 JSJ

REFERENCES

1. **Benfey T.** *From intellectual scaffolding to the elixir of life: 54 editorials from 'Chemistry,' 1964-1978.* Greensboro, NC: Guilford College, 1978. 60 p.
2. **Bernal J D.** *The social function of science.* Cambridge, MA: MIT Press, 1967. 482 p.
3. **Garfield E.** Genetic engineering—too dangerous to continue or too important to discontinue? *Current Contents* (35):5-7, 1 September 1975.*
4. -----, The social impact of science and technology, and the growth of anti-science. *Current Contents* (43):5-6, 24 October 1973.*

5. **Benjamin M.** Telephone communication. 29 May 1979.
6. **Feld B T.** What is Pugwash anyway? *The Nation* 215:431-5, 1972.
7. Pugwash Conferences on Science and World Affairs. *The Pugwash movement at twenty-one*. London: Pugwash, 1978. 16 p.
8. **Rotblat J.** *Scientists in the quest for peace: a history of the Pugwash conferences*. Cambridge, MA: MIT Press, 1972. 399 p.
9. Pugwash conferences. *Encyclopaedia Britannica. Micropaedia*. Chicago, IL: H.H. Benton, 1974. Vol. 8 p.295.:
10. **Djerassi C.** Personal communication. 30 May 1979.
11. -----, Research centres of excellence in developing countries.
Proceedings of the twentieth Pugwash conference on science and world affairs. 9-15 September 1970. Fontana, WI. London: Pugwash, 1970. p. 159-62.
12. -----, Pugwash, population problems and centres of excellence.
Proceedings of the twenty-first Pugwash conference on science and world affairs. 26-31 August 1971. Sinaia, Romania. London: Pugwash. 1971 p. 183-8.
13. **Kaplan M M.** Telephone communication. 10 April 1979.
14. **Feld B T.** Telephone communication. 6 April 1979.
15. -----, Telephone communication. 1 May 1979.
16. The 31st Pugwash symposium, "Feeding Africa," University of Cape Coast, Ghana, 29 May-2 June 1978. *Pugwash Newsletter* 16(1):14-7, July 1978.
17. The 32nd Pugwash symposium, "Social values and technological choice in an international context," Racine, Wisconsin, USA, 8-10 June 1978. *Pugwash Newsletter* 16(1):17-20, July 1978.
18. The 30th Pugwash symposium, "Dangers of nuclear war by the year 2000: an attempt at assessment," Toronto, Canada, 3-7 May 1978. *Pugwash Newsletter* 16(1):12-4, July 1978.
19. **Winnik H.** *Scientists in the quest for peace: a history of the Pugwash conferences* by Rotblat J. (Book Review). *Isis* 65:292, 1974.
20. Sixth Pugwash Workshop on Chemical Warfare, Salt Lake City—Tooele, Utah, and Kansas City, Missouri, 8-12 May 1978. *Pugwash Newsletter* 16(1):4-12, July 1978.
21. Pugwash Conferences on Science and World Affairs. Declaration, statements and reports from the conference. *Proceedings of the twenty-seventh Pugwash conference on science and world affairs*. 24-29, August 1977, Munich, FRG. London: Pugwash, 1977. p. 21-72.
22. **Sakharov A.** The need for an open world. *Bull. Atom. Sci.* 31(9):8-9, November 1975.
23. **Finney J W.** Soviet said to ease inspection stand. *NY Times* 3 May 1974, p. 3.
24. **Alpert H.** *Scientists in the quest for peace: a history of the Pugwash conferences* by Rotblat J. (Book Review). *Ann. Amer. Acad. Polit. Soc. Sci.* 407:181-2, 1973.
25. **Salomon J J.** The *Internationale* of science. *Sci. Stud.* 1:23-4, 1971.
26. **Marcovich H.** Hanoi-Washington negotiations. (Letter to the editor). *Washington Post* 31 August 1972, p. 23.
27. **Kaplan M M.** Report of the Director-General. *Pugwash Newsletter* 16(2):26-33, October 1978.
28. **Pauling L.** Telephone communication. 21 May 1979.
29. **Markov M A.** Have we learned to think in a new way? *Bull. Atom. Sci.* 33(9):20-4, November 1977.

*Reprinted in: **Garfield E.** *Essays of an information scientist*. Philadelphia: ISI Press, 1977. 2 vols.