

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Science serves its readers as a forum for the presentation and discussion of important issues related to the advancement of science, including the presentation of minority or conflicting points of view, rather than by publishing only material on which a consensus has been reached. Accordingly, all articles published in *Science*—including editorials, news and comment, and book reviews—are signed and reflect the individual views of the authors and not official points of view adopted by the AAAS or the institutions with which the authors are affiliated.

Editorial Board

1982: WILLIAM ESTES, CLEMENT L. MARKERT, JOHN R. PIERCE, BRYANT W. ROSSITER, VERA C. RUBIN, MAXINE F. SINGER, PAUL E. WAGGONER, ALEXANDER ZUCKER

1983: FREDERICK R. BLATTNER, BERNARD F. BURKE, CHARLES L. DRAKE, ARTHUR F. FINDEIS, E. PETER GEIDUSCHEK, GLYNN ISAAC, MILTON RUSSELL, WILLIAM P. SLICHTER, JOHN WOOD

Publisher

WILLIAM D. CAREY

Associate Publisher: ROBERT V. ORMES

Editor

PHILIP H. ABELSON

Editorial Staff

Assistant Managing Editor: JOHN E. RINGLE

Production Editor: ELLEN E. MURPHY

Business Manager: HANS NUSSBAUM

News Editor: BARBARA J. CULLITON

News and Comment: COLIN NORMAN (deputy editor), WILLIAM J. BROAD, CONSTANCE HOLDEN, ELIOT MARSHALL, R. JEFFREY SMITH, MARJORIE SUN, JOHN WALSH

European Correspondent: DAVID DICKSON

Contributing Writer: LUTHER J. CARTER

Research News: ROGER LEWIN (deputy editor), RICHARD A. KERR, GINA KOLATA, JEAN L. MARX, THOMAS H. MAUGH II, ARTHUR L. ROBINSON, M. MITCHELL WALDROP

Administrative Assistant, News: SCHERRAINE MACK;

Editorial Assistant, News: FANNIE GROOM

Senior Editors: ELEANORE BUTZ, MARY DORFMAN, RUTH KULSTAD

Associate Editors: SYLVIA EBERHART, CAITILIN GORDON, LOIS SCHMITT

Assistant Editors: MARTHA COLLINS, STEPHEN KEPPLE, EDITH MEYERS

Book Reviews: KATHERINE LIVINGSTON, Editor; LINDA HEISERMAN, JANET KEGG

Letters: CHRISTINE GILBERT

Copy Editor: ISABELLA BOULDIN

Production: NANCY HARTNAGEL, JOHN BAKER; ROSE LOWERY; HOLLY BISHOP, ELEANOR WARNER; BEVERLY DURHAM, JEAN ROCKWOOD, LEAH RYAN, SHARON RYAN

Covers, Reprints, and Permissions: GRAYCE FINGER, Editor; GERALDINE CRUMP, CORRINE HARRIS

Guide to Scientific Instruments: RICHARD G. SOMMER

Assistant to the Editors: SUSAN ELLIOTT

Membership Recruitment: GWENDOLYN HUDDLE

EDITORIAL CORRESPONDENCE: 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Area code 202. General Editorial Office, 467-4350; Book Reviews, 467-4367; Guide to Scientific Instruments, 467-4480; News and Comment, 467-4430; Reprints and Permissions, 467-4483; Research News, 467-4321. Cable: Advancesci, Washington. For "Information for Contributors," write to the editorial office or see page xi, *Science*, 25 June 1982.

BUSINESS CORRESPONDENCE: Area Code 202. Membership and Subscriptions: 467-4417.

Advertising Representatives

Director: EARL J. SCHERAGO

Production Manager: GINA REILLY

Advertising Sales Manager: RICHARD L. CHARLES

Marketing Manager: HERBERT L. BURKLUND

Sales: NEW YORK, N.Y. 10036: Steve Hamburger, 1515 Broadway (212-730-1050); SCOTCH PLAINS, N.J. 07076: C. Richard Callis, 12 Unami Lane (201-889-4873); CHICAGO, ILL. 60611: Jack Ryan, Room 2107, 919 N. Michigan Ave. (312-337-4973); BEVERLY HILLS, CALIF. 90211: Winn Nance, 111 N. La Cienega Blvd. (213-657-2772); DORSET, VT. 05251: Fred W. Dieffenbach, Kent Hill Rd. (802-867-5581).

ADVERTISING CORRESPONDENCE: Tenth floor, 1515 Broadway, New York, N.Y. 10036. Phone: 212-730-1050.

Efforts to Decrease Nuclear Tensions

So far we have been spared from nuclear war, but year by year the number and accuracy of nuclear weapons have increased. Should the present race continue indefinitely, the ultimate mutual destruction of the superpowers seems guaranteed. The United States and the Soviet Union now have about 25,000 warheads each. Only about 200 on target would destroy all U.S. cities with populations greater than 100,000. Russian casualties would be comparable. In addition, the Soviet Union has some special problems of its own. The European Russians (Caucasians) constitute an unloved minority. One Kremlinologist told me that if a bomb were dropped on Moscow, there would be dancing in the streets of Tashkent. Following a nuclear holocaust, how much help could Russians expect from their neighbors? According to another Kremlinologist, "The Soviet Union is the only major power in the world almost totally surrounded by hostile communist powers." Though the country's intrinsic position is flawed, the Russians are a proud people and their leadership acts tough and brutal. Another Kremlinologist has said, "The Russians are not 20 feet tall, but neither do they have a 10-foot yellow streak down their backs." An attempt by this country to overawe them is not likely to succeed. The contrasting policy for us—unilateral disarmament—has no future. Realism demands a middle course between the two extremes. Increasingly, important voices have been calling for just that.

In this issue of *Science* is printed a Declaration on Prevention of Nuclear War that was presented to Pope John Paul II by an assembly of presidents of scientific academies and other scientists. Circumstances of the drafting of the declaration indicate that its recommendations will be adopted, entirely or in large part, by the Catholic Church. A crucial comment made in the declaration is that "All disputes that we are concerned with today, including political, economic, ideological, or religious ones, are small compared to the hazards of nuclear war." This statement is true, but are our people prepared to modify firmly held beliefs to lessen tensions?

The declaration calls on all nations "never to be the first to use nuclear weapons; . . . to abide by the principle that force or the threat of force will not be used against the territorial integrity or political independence of another state; . . . [and] to renew and increase efforts to reach verifiable agreements curbing the arms race." A commitment by the United States not to be first to use nuclear weapons would represent an important change in policy that might leave our NATO allies feeling abandoned. At present, the Russians have a large superiority in tanks and other conventional weapons. To neutralize this threat would require a substantial buildup of Western conventional forces or partial disarmament by the Russians.

The other two cited recommendations also call for a change in the behavior of the Soviet Union. Would they be willing to curtail their activities in Afghanistan and elsewhere? The matter of verifiability is also sticky. The historical refusal of the Russians to agree to some form of inspection casts doubt on their reliability and sincerity.

Despite the many obstacles to lessening the threat of nuclear war, efforts must be made. Scientists can help, as they have done in advising Pope John Paul II. But the major impetus must come from the politicians. In this regard there have been some encouraging developments. Four former hawks, McGeorge Bundy, George F. Kennan, Robert S. McNamara, and Gerard Smith, have called for a change in policy on the use of nuclear deterrents in Western Europe.* Senators Jake Garn (R-Utah) and Paul Laxalt (R-Nev.) have said, "The U.S. should make every effort to negotiate an equitable and verifiable strategic nuclear offensive arms reduction agreement." Senator Barry Goldwater (R-Ariz.) said that it is time to sit down with the Russians and say, "We're both in trouble. We're spending too damn much on things we don't need. Let's talk."—PHILIP H. ABELSON

*"Nuclear Weapons and the Atlantic Alliance," reprinted from *Foreign Affairs*, Spring 1982, by the Albert Einstein Peace Prize Foundation, 1430 West Wrightwood Avenue, Chicago 60614.