The Toronto Resolution

INTRODUCTION

We present a methodology for assessing particular ethical codes, which comprises the key elements that all codes of ethics in science and scholarship should include. By suggesting that codes adopt a common Preamble, and that they consider addressing common elements to their codes, we are expressing our hope that the community of scholars and scientists can agree to a common moral framework for the conduct of their investigations. Each discipline should develop a particular code in the light of these considerations, and existing codes should be examined for their adequacy, effectiveness and applicability.

PREAMBLE

Living in a world in which all forms of life are interdependent, we recognize that human activity since the scientific revolution now threatens the future of life on the planet. This threat stems in part from reckless exploitation of the earth's resources and massive pollution of the biosphere by humankind, exacerbated by rampant militarism. To help solve these problems, scientists and scholars, and all those concerned with the welfare of life on earth, need to unite in a world-wide moral community, in which considerations of beneficence and justice at a global level are fundamental. We recognize that knowledge gives power; that power tends to corrupt and may be used for dangerous and destructive purposes; and that consequently scientists and scholars, who share the privilege of participating in the advancement of knowledge, many under the shelter of academic freedom and in the tradition of open publication, have a particular responsibility to society for the effects of their work. All should make a determined individual and collective effort to foresee the implications and possible consequences of their scholarly and scientific work, and avoid studies that are likely to harm the quality of life. We should recognize that knowledge also gives enlightenment and promises emancipation from disease, poverty and other social evils. As an alert and enlightened community of experts and concerned citizens, scientists and scholars should participate in the social process of directing their research and its applications to benign ends, while educating their students and the public concerning this, the proper role of scholarly and scientific knowledge.

ELEMENTS OF CODES OF ETHICS

Considering the existence of numerous codes of ethics, most being specific to a single discipline, and often to the scientists and scholars in only one country;
Considering the difficulty of expressing in a single code the concerns of scientists and scholars in various disciplines and in different countries;
Considering that war is obsolete, at best futile and at worst destructive beyond comprehension or tolerance, and that the present level of direct military research is unprecedented, with human, physical and financial resources being thus diverted away from the proper ends of science and scholarship:

1. a code should articulate as far as possible the underlying assumptions and guiding principles of a working ethic;

2. a code should indicate specific measures designed to ensure that signatories adhere to its principles;

3. a code should be sufficiently general to encompass scholarly work and basic, applied and technological research as well as the actions of practitioners engaged in the discipline or profession;

4. a code should oppose prejudice with respect to sex, religion, national or ethnic origin, age, sexual preference, colour, or physical or mental disability;

5. a code should take into account that, while in general it is difficult to anticipate all the consequences of research, scientists and scholars have a responsibility, individually and collectively, to try to foresee, and to keep themselves aware of, the developing applications of their work, and to choose or redirect it accordingly;

6. a code should recognize that actions designed narrowly to benefit humankind may in fact threaten the survival of all species, since the ecosystem is a seamless web;

7. a code should forbid research directed towards developing or using methods of torture, or other devices and techniques that threaten or violate individual or collective human rights;

8. a code should direct scholarly and scientific activity towards the peaceful resolution of conflict and universal disarmament; since all research has military potential, every scientist and scholar should seek to resolve the ethical problem that knowledge, which should enlighten and benefit humanity, may be used instead to harm the planet and its people in war and in preparation for war (see Appendix A);

9. a code should encourage its adherents to comply with established procedures for the scientific and (where appropriate) ethical peer review of research studies conducted under its auspices and, where such procedures do not exist, a code should specify them;

10. a code should urge its adherents to make all basic research results universally available;

11. a code should urge its adherents to identify and report violations of its terms, and should correspondingly ensure their protection from retribution by their fellow-scientists, professional and learned societies, and the judiciary for such exposure;

12. a code should be widely disseminated through the school and university curricula, to educate the rising generations, as well as practising scientists and scholars, about their emerging responsibilities.

GENESIS

The Toronto Resolution was formulated at a Workshop on "Ethical Considerations in Scholarship and Science" held in Toronto, November 8 and 9, 1991, which was cosponsored by: New College, Victoria University, University College and the Centre for Bioethics in the University of Toronto; Norman Bethune College and MacLaughlin College in York University; and Science for Peace. This Workshop followed a Symposium on "Constraints on the Freedom of Scholarship and Science" organized by the Royal Society of Canada, Ottawa, November 4-6, 1991. The Symposium was international and interdisciplinary, being attended by about 20 scientists and scholars from Africa, Asia, Europe, and the Americas, as well, of course, as Canadian. Four of these overseas participants in the Ottawa Symposium were able to attend also the Toronto Workshop:

Solomon Benatar, Head of Dept of Medicine, U of Capetown, South Africa
Alex Dantchev, Bulgarian Academy of Sciences
Gerhard Jacob, former president of U Rio Grande do Sul, Brazil
Ladislaw Tondl, Czechoslovak Academy of Sciences

Other participants from Canada (almost all are members of Science for Peace):

Bhatia, R: mathematician
Burkhardt, Helmut: physicist
Ching, Julia: religious & East Asia study
Creighton, Phyllis: historian
Davis, Chandler: mathematician
Fawcett, Eric: physicist
Gardner, L.T.: mathematician
Gotlieb, Calvin: computer scientist
Kushner, Eva: comparative lit.
Lavery, James: bioethicist
Meslin, Eric: philosopher
Newcombe, Hanna: chemist
Nicholls, Peter: biologist
Prentice, James: physicist
Rapoport, Anatol: math/social psych
Summers, Craig: psychologist
Timmerman, Peter: philosopher
Vanderburg William: philosopher

APPENDICES

A] Human and financial resources dedicated by the military to scientific research and development includes around 20% of the world's 2.5 million research scientists and engineers, while over 50% of the world's research physicists and engineering scientists are military scientists [SIPRI Yearbook (Taylor and Francis: London) 1983]. In the U.S.A., for 1989, the military research and development budget was 66% of the total for Defense, NIH (Health), NSF (Science), NASA (Space), Energy and Agriculture, dropping to 50% in 1992., with the same level proposed in the 1993 budget [Science 255 (1992) 672]

B] The Toronto Resolution was published in a paper entitled, "Working Group on Ethical Considerations in Science and Scholarship", by Eric Fawcett in "Accountability in Research", Vol. 3, 1993, 69-72. A second paper was published entitled, "Do Scientific and Scholarly Codes of Ethics Take Social Issues into Account?", by Craig Summers, Colin L. Soskolne, Calvin Gotlieb, Eric Fawcett, and Peter McClusky in "Accountability in Research", Vol. 4, 1995, 57-68, which examined the extent to which existing codes are consonant with the 12 principles of The Toronto Resolution by performing a content analysis on the codes of 21 Ontario-based scientific and scholarly organizations.

C] The Toronto Resolution was published as a statement stemming from the RSC Conference on pp. 259-266 of the Proceedings: "Constraints to Freedom of Scholarship and Science/ Entraves a la liberte scientifique et aux sciences", Proceedings of an international symposium /Deliberations du symposium international de novembre 1991, Edited by/ sous la direction de Eva Kushner and/et Michael Dence (Ottawa: Royal Society of Canada, 1960.