Commentary: Polar Science and Social Purpose

Many, including, I suspect, most residents of the North, would say that researchers view northern Canada and Antarctica in much the same way. They see both as laboratories for research, principally natural science research, that is only incidentally of relevance to humankind. I believe that there is more validity to this image than many of us in research care to admit. However, I also believe that there are, at last, signs of change in attitude inside and outside the research community.

In 1986, I participated in a review of polar science in Canada that resulted in the publication of *Canada and Polar Science* (Roots, E.F., *et al.*, 1987, report to the Minister of Indian and Northern Affairs, Ottawa K1A 0H4). At that time, there was great concern among northerners and some researchers about a lack of "relevant" research — that is to say, research with a fairly clear and direct human application. This concern found clearest expression in criticism of the underrepresentation of social sciences in polar research. Some said that this was simply a reflection of general underfunding of social scientists. Others said it was a reflection of a general lack of interest in the North among Canadian social scientists. Yet others suggested that both of these, not unrelated, explanations ultimately reflected a lack of public and political interest in northern social issues in Canada.

I was less concerned then with the scarcity of social science research in the North than with the assertion that there was a *general* lack, across the disciplines, of research with a human dimension. By this, people meant research that northerners could relate to for one reason or another — I suppose research with an apparent social purpose or that appeared likely to improve the human condition. There certainly appeared to be remarkably few research programs in which northerners were involved at the critical initiation and design stages. There were even fewer in which concepts of "aboriginal science" or "traditional ecological knowledge" were taken into consideration.

At the same time that we were being told that researchers were often indifferent to local northern problems and interests, we were told that northerners had little interest in more general science concerns.

This year, I was able to survey polar researchers in Canadian universities to determine whether, from their point of view, the findings described in *Canada and Polar Science* had become dated. In doing this, I gained the impression that there *have* been some changes in this matter of "relevant" northern research. These are some of my impressions; the results of my survey appear in *Canada and Polar Science Revisited* (Adams, W.P., 1992, Canadian Polar Commission, Suite 1710, 360 Albert Street, Ottawa K1R 7X7).

First, insofar as it can be used as a measure of "relevant" science, there appears to have been some increase in social science research in the North and some gain in confidence among social researchers working there. Some of the increase is accounted for by studies associated with the devolution of federal power to the territories and the aboriginal land claims process. Devolution and land claims have also stimulated a good deal of research beyond the social sciences (studies of geology, vegetation, wildlife, landscape, and the like). Virtually all of this qualifies as "relevant," as it has a clear social purpose, and furthermore it tends to be initiated *in* the North, so that involvement of northerners is very real.

Another interesting development since 1986 has been the way in which the term "global change" has captured the imaginations of a wide cross-section of the public *and* researchers. This is a catch-all phrase for environmental degradation of all sorts. There is now a wide acceptance of the view that studies of aspects of "global change," such as the enhanced greenhouse effect and global-scale pollution, *are* "relevant." The ozone depletion studies in Antarctica are perhaps the outstanding example of this; they have driven home the "relevance" of global (and polar) atmospheric studies as never before.

Media coverage of global change research has reached both northerners and researchers. They both now see such work in a new light. As the First International Polar Year (1882-83), forerunner of the International Geophysical Year and other worldwide science projects, showed, polar researchers have, with good cause, long viewed their work as having special *global* significance; but until recently supporting arguments have tended to be academic rather than social. Only in the last few years have we seen, for example, high atmosphere and deep glacier polar studies being presented, by convinced researchers to receptive audiences, as being of importance to human beings *now*.

The increased public acceptance of the "relevance" of global change research appears to be particularly marked among northern residents. Ozone depletion, greenhouse warming, atmospheric and ocean pollution, and the focusing of contaminants at key points in the food chain are all examples of environmental degradation that have particularly serious implications for those who live at high latitudes. Some researchers told me that they now receive more questions about global problems than about local problems when in northern communities. One suggested that northerners have a better grasp of the global demographic trends that many see as the underlying drive of global change, because rates of population growth in northern communities are closer to the world norm than those of southern Canada.

Thus, it seems to me that researchers' attitudes towards the "relevance" of their own research are changing and northerners' views of the general importance of scientific research are also changing.

Also, since 1986, devolution of power to the territories has put various aspects of the management of research into the control of northerners. The Science Institute of the Northwest Territories, for example, now controls the land and scientific permit system for the N.W.T. It also manages the major field research facilities at Iqaluit, Igloolik, and Inuvik. Communities and aboriginal groups also run field stations and research projects. Similarly, the Prince of Wales Centre in Yellowknife is a major presence in northern archaeological and historical research. Such developments inevitably involve researchers more with northerners and involve northerners more with researchers and research programs. They also improve the feedback of research results into the North.

Although less marked than some of the other changes that I have tried to describe, it is my impression that university researchers are now more interested in "aboriginal science." This is a matter of very special cultural significance in terms of the involvement of native northerners in research. It is a matter about which there is a feeling of urgency in the North, as many feel that the generation that has the distinctive aboriginal view of the universe and that has the local ecological knowledge is passing. In my survey, I heard of a number of cooperative social and environmental projects that involve both Western and aboriginal science.

Some of the changes in attitude of both researchers and northerners that I think I detected are the polar expression of worldwide changes within science and in the way science is regarded by the public. It seems to me that there is an increasing acceptance among scientists of the view that social objectives come first and science follows. One respondent to my survey pointed out that this approach, in addition to being socially responsible, also results in efficient science. He cited the James Bay experience as an example of confused social thinking and confused science. At the same time, public interest in science as a means of monitoring the local and global environments and, possibly, of solving problems connected with them is growing. Increasing numbers of people are accepting the linkage between problems at the local and global scales.

I am of the view that we still need much more "relevant" research in northern Canada. Researchers have an obligation, collectively and individually, to address needs and interests of northern residents. At the same time, northerners should become even more aware of the legitimate and worthwhile aspirations of the research community and of the benefits it can provide for the North and for the globe.

Wouldn't it be nice if northerners and researchers in Canada could develop a system of socially responsible, high-quality research that would become a model for research in the populated world, especially those regions with indigenous peoples? Wouldn't it be nice if, under the renewed Antarctic Treaty, Antarctica could become a model for environmental and other research in the relatively untouched parts of the world? Then, polar research would, once again, be leading the way in global science.

I am grateful to the Canadian Polar Commission for its initiative in undertaking the survey of polar science in Canada. I am also grateful to those who responded to the survey, especially Tim Moore of McGill, for a comment that triggered this note, and my Trent colleagues Miles Ecclestone and Fred Helleiner. The opinions, or "impressions," are, of course, my own.

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