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Public Doubts About Science

Important to the future of science and technology is the fact that the public has somewhat lost confidence in the ultimate value of the scientific endeavor. It is not that they hold pure science or scientists in any less esteem. But they are less certain that scientific research will inevitably yield public benefit.

For the first time in centuries, there are thoughtful persons who are not morally certain that even our greatest achievements do, indeed, constitute progress. To some philosophers it is no longer clear that objective knowledge is an unquestioned good. Glimpses of such doubts have emerged in public discussions of nuclear energy, or sociobiology, and, most recently, in the heated but foolish discussions of research utilizing recombinant DNA. The intellectual elite in every era has always been pessimistic. But today, concerned that "that which can be done, will be done," there has arisen an antiscientific, antirationalistic trend that should give us pause. At its ugliest—or most absurd—it finds expression in gurus, tarot cards, and astrology, faddist approaches to nutrition, and easy assertion and acceptance of unfounded allegations of environmental hazard. That antiscience attitude perniciously infiltrates the news media, affecting the intelligentsia and decision-makers alike. It must be confronted at every opportunity.

The public image of science and scientists has been distorted by the participation of scientists in public policy formation. Beneath the surface, the environmental and consumer movements may be an expression of anomie, a cry of protest for the sense of powerlessness of the individual educated citizen—patently a serious sociopolitical circumstance. However, a frequent surrogate for that deep-seated complaint is an expression of concern about the safety of some product or technology, based always on an assertion of risk that was first brought forward by some member of the scientific community. The societal response has been attempts at examination of such matters by risk and cost/benefit analysis. Well, risk/benefit analysis can certainly inform the decision-maker. But his decision must necessarily still turn on a value judgment, conditioned by his social, economic, philosophic, and religious views. But that is the nature of the political process. The public acceptability of a given level of risk is a political, not a scientific, question.

Difficulty arises in the scientific community from confusion of the role of scientist qua scientist with that of scientist as citizen, confusion of the ethical code of the scientist with the obligation of the citizen, blurring the distinction between intrinsically scientific and intrinsically political questions. When scientists fail to recognize these boundaries, their own ideological beliefs, usually unspoken, easily becloud seemingly scientific debate.

A decade ago it might have been desirable to flag potential hazards for public attention and proceed as if each were a clear and present danger. It is time to return to the ethics and norms of science so that the political process may go on with greater confidence. The public may wonder why we do not already know that which appears vital to decision—but science will retain its place in public esteem only if we steadfastly admit the magnitude of our uncertainties and then assert the need for further research. And we shall lose that place if we dissemble or if we argue as if all necessary information and understanding were in hand. Scientists best serve public policy by living within the ethics of science, not those of politics. If the scientific community will not unfrock the charlatans, the public will not discern the difference—and science and the nation will suffer. There is, in short, a large burden on the scientific community to be seen as constructive in dealing with real problems, as straightforward, forthcoming, honest, and courageous—not intimidated, as all too many have been for the last decade.—PHILIP HANDLER, *President, National Academy of Sciences, Washington, D.C. 20418*

Excerpted from a speech on "Science and the American Future," given at Duke University, Durham, North Carolina, on 6 March 1980.