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Scientists, Engineers, and Citizens

Meeting needs for public understanding of science was adopted as federal policy in 1950 legislation creating the National Science Foundation. On the basis of currently low levels of citizen comprehension, that original NSF program can hardly be viewed as successful. But how should we expect any federal program to buck a powerful cultural tide?

Huizinga addressed this issue almost half a century ago.* As he wrote, universal education and modern publicity, instead of raising the level of culture, have produced symptoms of devitalization and degeneration. Science as new knowledge has not settled into the culture, and the aggregate of discoveries cannot be equated to culture.

Among knowledge consumers, with everyone getting a taste of everything, there is depreciation of critical judgment. And that process has been accelerated by techniques of mass entertainment wherein participation slides from active to passive mode, speeding abdication of informed judgment to others. Everyone becomes a trivial, Monday morning quarterback.

As to the scientific community, it has considered its primary role as one of acquiring and extending knowledge, leaving to others the roles both of educating the public about the social implications of science and of exercising responsibility over ways and means for adapting and controlling natural forces. The scientific community may also share in the blame for weakening of an intellectual conscience that underpins critical discernment.

Granted, various groups of scientists have become crusaders for specific issues. A few have tackled broader questions of survival. While not identified with causes as such, other scientists have become activists in their own community, applying their expertise to local issues.

Professional organizations also now get involved. Journals have carried articles on key policy issues to enlighten members. Some organizations have confirmed their tax-exempt status, then summoned up their courage and taken public positions, submitted testimony, and stepped up attention to professional activities in which ethical dimensions of social responsibilities are at stake. The concepts of technology assessment have begun to be integrated into professional engineering practice and teaching.

Looking ahead, the scientific and engineering communities could be of more direct assistance through heavier commitment of their professional societies to public interest activities and to citizen understanding. At present, organizations of scientists and engineers devote the greatest fraction of their income from dues to dissemination of technical information. The public is never excluded, but the content and style of such communication are so highly specialized as to discourage participation by any but the expert.

Thus the scientific community and the engineering professions have failed to help the other 98 percent of the population who are nonspecialists to grasp the technical foundations of modern life and associated threats to survival. Some of the difficulty arises from cultural isolation of the scientific and engineering communities. One antidote lies in a more systematic exposure to issues that concern society generally, especially regarding those whose lives seldom intersect the technical aristocracy, and whose consequently remote concerns and dreams are alien and heard vicariously, if at all. When the technical community recognizes that it must address the stark questions of who wins, who loses, and how much, then they may also recognize that the attack on these questions of cultural and psychological as well as operational effects involves a kaleidoscopic blend of technical with social knowledge. This surely will widen the perspective and enrich the value base intrinsically present in all judgments that the technical community is called upon to make on technology-intensive public policy.—EDWARD WENK, JR., *Professor of Engineering and Public Affairs, University of Washington, Seattle 98105*

This editorial is excerpted from E. Wenk, Jr., *Margins for Survival* (Pergamon, New York, 1979), pp. 144–147.

*J. Huizinga, *In the Shadow of Tomorrow* (Norton, New York, 1936), p. 79.