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Abstract

Remarks by Congressman Robert D. Price, Texas, before the National Seminar on Agricultural Science Communication, Washington, D.C., January 26, 1971.

A Congressman Looks at Agricultural Science Communications[1]

AS WE ARE ALL well aware, agricultural research activities have played a key role in the growth and development of the agriculture sector. This notwithstanding, however, there are those who say that future research activities should take a backseat to social and urban needs.

To these critics I say: the demands of the future spell a different story. If it is assumed that our cropland base were fully utilized, the prospective needs for U.S. farm products by 1980 will be 40 per cent more than is currently being produced.

Assuming the continuance of recent rates in productivity increase, farm output between now and 1980 will increase by about 33 per cent. Consequently, it is obvious that agricultural research programs will have to be expanded if we are to be assured of obtaining the accelerated increases in productivity that will be needed to meet 1980 demand just for U.S. farm products.

From a political point of view, this raises the critical question of whether the very real need for increasing agricultural research can be translated into policy alternatives that will be supported by Federal allocations.

I would like to deal with this question in general terms, terms relevant to the entire scientific community, a community of which you agricultural researchers and administrators are essential parts.

In years gone by, questions of translating scientific information and discoveries were not raised too frequently, at least in an earnest way. In a fundamental sense, there was no real point in monitoring or legislating the activities of scientists or researchers. Until recent times, scientific advances occurred infrequently and without conscious anticipation of their long-range effects on society. Man could afford to look upon the activities of scien-

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tists with some complacency. Innovations came slowly. They were put to use in a relatively leisurely fashion. Their side effects developed at a sufficiently modest pace so as to allow society to adjust to them without undue stress or strain.

All this has changed, however. It is history. Man has learned some critical lessons. He has learned, for example, that the advancement of knowledge does not automatically improve the human condition. He has learned that society can no longer blindly adopt scientific discoveries and technological advancements on the assumption there will be ample time to iron out any bugs.

That these modern notions as to the limitations of science have major policy consequences is aptly illustrated in the Federal budget. Budget priorities tacitly recognize that needs of the scientific community are increasing faster than the national budget. Budget composition tacitly recognizes that some of the forces giving direction to scientific enterprises are political rather than scientific in origin.

Because some of the major determinants of scientific activities in general and agricultural research in particular lie in the realm of politics, it is of vital importance that the dynamics of the relationship between science and politics be fully appreciated.

The political system provides the framework within which the scientist or researcher operates. Policymakers in the executive and legislative branches often constitute the touchstone between the scientist and this framework, at least as far as federally related activities are concerned.

I can address this point with some authority, because by virtue of my membership on the House Agriculture Committee and the House Science and Astronautics Committee, I come in contact with a fairly representative cross-section of the scientific community.

To me, and I know my view is generally shared by my colleagues, the greatest single problem obstructing the effective translation of technical information and discoveries into policy alternatives can be summed up in one word—**communication.** All too often I have seen what may have been sound ideas and worthy proposals fall of their own weight just because their proponents have either been unwilling or unable to make them even reasonably intelligible.

On an even more basic level, technical information needed by

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policy makers is frequently not available, or it is not available in the right form. After all, a policymaker cannot judge the merits or consequences of a technical program solely within a technical context. He **has** to consider the social, economic, and legal implications of alternative courses of action.

This does not minimize the importance of technical information, it **maximizes** it. It means that the technical aspects of political issues should receive priority attention. As a Science and Astronautics Subcommittee report has stated:

"In the management of political issue with substantial scientific or technological content, the political issue is always larger in scope than the scientific question within it. In principle, the scientific question needs to be dealt with first. It is important that the scientific question or issue be carefully framed so that the answer to it provides a useful and significant piece of evidence for guidance in the considerance of the broader political issue."

What it all boils down to is that few politicians are scientists and few scientists are politicians. Thus, special attention must be paid to the communication process. It is the Rosetta Stone from which science policy decisions inevitably flow. Moreover, in the communication of technical information from scientists to policymakers some scientists as well as some policymakers need to have special qualifications. In Congress, we have made an attempt to cope with this problem through the utilization of committee staff specialists. Perhaps you agricultural researchers and administrators should also explore new modes of communication to facilitate a fuller exchange of technical knowledge.

Finally, there is a broader dimension to this entire problem which I would like to comment on. In a very real sense, you are public servants just as I am. I say this because the fruits of science inevitably take the form of contributions to culture and to mankind. **Basic science** can reveal information about the passage of pure water through a membrane. **Applied science** can develop information as to which membranes work best to separate water from dissolved salts. **Technology** creates a desalting plant rendering pure water to a needy area.

Since all fields of science, particularly the agricultural research area, generate goods and services that increasingly affect human life, scientists must strive to develop ethics of ends in addition to their traditional ethics of means based on well-de-

veloped canons of intellectual integrity and open-mindedness. In today's complex and pluralistic world, problems of scientific choice inevitably involve non-scientific considerations. Therefore, scientific choices will have to be based on an enlarged concept of scientific ethics.

Historically, scientists have been accused of leaving their discoveries like foundlings on the doorstep of society ignoring the foster parents who did not know how to bring the discoveries to maturity. Fortunately, this accusation is no longer quite as justified as it once was. Because there are socially minded scientists who are just as concerned with the utilization of knowledge as they are with its production. And some subscribe to Thomas Jefferson's dictum that, "The end of all knowledge is action."

On the whole, though, knowledge for knowledge's sake remains the professed ideal of the scientific community, but this is a luxury scientists can no longer afford either for themselves or for their profession. The public and the policymakers have made this fact crystal clear.

Science and technology have brought western civilization to unparalled heights. Yet it is science and technology that have made certain problems so immense and intractable. Paradoxically, where science and technology have expanded man's problems, it may take more scientific understanding and technological advancement to surmount them. A cure for the pollution of rivers by detergents is the use of nonpolluting detergents. A cure for bad Federal program design is better program design.

In conclusion, probably few human institutions will continue as they are for another half century. If they are not changed in response to the problems of today, they may well be changed to avoid the problems of tomorrow.

The future will surely bring widespread changes in everything from our styles of living to our philosophies of man. Will the future unfold on a world where individual freedom and democracy prevail? Will it unfold on a version of George Orwell's 1984? Or will it unfold on a postnuclear wasteland with its scientists and other learned men hanged?

It is the decisions of commitment and the acts of leadership that scientists and policymakers jointly engage in during the next few months and years that will significantly determine the answers to these questions.

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