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Science Policy and National Goals

Recently the Daddario subcommittee has raised anew the questions of national science policy and has recommended that the Board of the National Science Foundation provide guidance (*Science*, 14 January). The problem is complex. Even if specific answers could be given about optimum science policy, they would be subject to change as events unfolded. Decisions taken in other countries frequently alter the basis on which our policies should be made. Perhaps more crucial are developments in our own nation.

National goals have an important influence on science policies. Science and technology are often the means by which such goals can be attained. When a President announces that placing a man on the moon is a national goal, all the components of science are to a degree affected, and many must respond. National goals are subject to change, often suddenly. Peace or intensified war in Vietnam could bring a sudden shift in goals, as well as a rearrangement of priorities among them. Peace in Vietnam would lead to renewed emphasis on the Great Society and on problems such as air and water pollution.

Politicians, and especially the President, establish national goals and, at least implicitly, set the relative priorities. In part, the priorities are established by speeches. More concretely, priorities are established by appropriation of funds. Money has a way of influencing decisions, both governmental and individual. Recently the Reuss subcommittee has complained that we spent $3 billion in one year on our program to place a man on the moon, and $560 million to improve nuclear reactors, while spending only $1 million for developing better methods of sewage treatment. Thus, Congress made an estimate of the relative desirability of making a new and imaginative approach to the problem of pollution.

A second major problem in establishing science policy is the mismatch in response times of the politicians and the scientists. Politicians respond to the mood of the moment. Often they react to one day's headlines. The characteristic response time of scientists to a serious problem is more like a year or two, or even five. Meeting the challenges of Sputnik required the training and retraining of many scientists, a process which still continues. Tomorrow the Great Society and its needs may become paramount. However, years could pass before science and technology made their optimum contributions.

The meshing of science policy to national goals is difficult, but we have evidence that the effort can be rewarding. World War II provided an example. At that time the nation had one overriding goal, that of winning the war. This goal was maintained for a number of years, so the time constants of the politicians and the scientists coincided. Moreover, the goal was clear to all. Science policy makers could employ fairly simple criteria, and they knew that well-thought-out plans would be implemented. Accomplishments during the war were unprecedented, and they have not been matched since, in rate or quality.

Science policy cannot be made without reference to national goals. If politicians wish to have a sharper formulation of policy they must provide a more clear-cut description of the goals and of the relative priorities.—PHILIP H. ABELSON