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## Justifying Basic Research

The concept of science held by the average intelligent reader of newspapers and magazines is related almost entirely to considerations of utility, such as spacecraft and rocketry, atomic bombs and nuclear power, radar and color television, and other products of technology which lend themselves to journalistic exploitation. To him, basic research has little significance and meaning. Nor is this a matter for wonderment, for relatively few results that have come out of the burgeoning basic research projects are readily identifiable with major utilization in the economy. The misgivings of members of Congress about voting large sums for basic research also are readily understandable. Neither they nor their constituents have adequate background to estimate benefits. Congress attempts to obtain evaluations of research during hearings on agency budgets. These hearings are supposedly designed to give opportunity to representatives of the agencies to prove that they need the funds set forth in their budgets. To be convincing and persuasive about basic research before the Subcommittee on Appropriations of the House is an annual chore, difficult and sometimes disagreeable. A congressman must maintain an attitude of skepticism. In most cases the appeals for favorable action are based on past practical results where some basic research has "paid off," and the expression of strong expectation that past results are but a prologue. Persuasive examples are few, and because of the difficulty in avoiding their use in successive years, their efficacy wears thin. "Please don't tell us about hybrid corn again," was the comment of one congressman in a hearing.

Indeed, one can sympathize with a congressman who requests an exhibit to show that results of basic research have justified past appropriations. Perhaps the best that can be done is to express hope and possibly conviction that not only has knowledge been advanced but that social and human values have emerged from the efforts made possible by the funds appropriated for basic research.

That public funds of the magnitude devoted to research should be wisely and honestly administered and used is elementary. Elementary also is the proposition that the justification for spending public funds on basic research is the reasonable expectation that the results of the effort will contribute to the national interest. Surely no obligation rests on the taxpayer to support basic research merely for the delectation of the researcher. The utmost wisdom and integrity must therefore prevail both in the making of proposals by the researchers and their institutions and in the granting of awards in response to the proposals.

When one considers this picture in detail, one must give much credit to the members of the Congress for having "gone along" with the agencies having responsibility for encouraging and supporting basic research. Moreover, it prompts the admonition that scientists who benefit from the appropriations, and their universities, as well as government scientists and administrators doing "in-house" basic research, remain constantly aware of their obligation of integrity towards the taxpayer who makes their work possible. The most important figure in the picture is the scientist himself. He must be exceedingly circumspect in his asking for the support and in his use of the funds provided, to assure the continuing goodwill of the public and the Congress towards him and his work.—PAUL E. KLOPSTEG, 828 Apple Tree Lane, Glenview, Illinois