the Income Tax Act, the Dominion Bureau of Statistics instructions, and the regulations of the Department of Industry. If those definitions are narrowly drawn and rigidly enforced, as I think from time to time they have been, they fail, in my opinion, to accomplish their real objective. If it were my decision in administering a research assistance programme, I would not be concerned whether a particular item of expense that might be eligible for government support came within the strict definition of the R&D element, or whether it overlapped a bit into the other phases of the innovation process. I make here no detailed assessment of these various definitions; indeed, I am not competent to do so, but simply issue a plea for the adoption of one standard definition and liberalization of its terms and application.

To underline this recommendation may I point out the difference between the R&D contribution to the development of the United States economy and to those of the European countries. It has, I think, been shown pretty conclusively that there is not the great gap in scientific knowledge and in R&D on either side of the Atlantic that is sometimes assumed. The gap comes from what is done with the results of R&D. Time and again we hear of British or European developments of tremendous importance, but more often it is in the United States than in, say, the United Kingdom that these things get translated into actions that make real contributions to economic growth. This committee is, I know, concerned with scientific policy, and not the whole question of economic growth, but my plea is that scientific policy should not take a narrow view of these matters if it is to achieve its real objectives.

2. The Need for Priorities:

The Government took a very important and potentially a very useful step in setting up the Science Council and the Science Secretariat. I assume that their major preoccupation will be the establishing of priorities which, because of our size and limited facilities, must be of the utmost importance. Before the creation of the Science Council there was no practical mechanism for coordinating the scientific effort of government. During my time in Ottawa as Deputy Minister priorities were determined by the forcefulness or otherwise of the individual minister concerned. A forceful minister got his departmental projects through and a less forceful one, who might have had a better project, often failed. It was, I think, particularly fortunate for Canada that Mr. Howe was in office when a start was made on our atomic activities, for he alone carried the ball at first.

The setting of priorities is, of course, tremendously difficult: First in assessing the claims for support from the different disciplines, and then in the judgments that must be made as between the individual contenders for government assistance, namely, governmental, institutional, and industrial organization.

The importance of priorities increases, of course, the farther one gets away from the basic research field toward the applied research field, from the search for new knowledge to the translation of new knowledge into useful things and processes. It is in this latter stage that the managerial judgment is so important if we are to get real value from our research efforts. Questions must be asked as to the economic potential of the project if the research is in fact successful.

I do not want to revive the old controversy about the ill-fated Arrow programme by mentioning it, but it seems to me that it illustrates what I have in mind. There were at the time the project was started real doubts about our ability to sell the aircraft to our NATO allies, no matter how successful the project might be. Without such sales, economic production in Canada was impossible. Some of our allies could not have afforded the purchase and others would have found it very difficult, for reasons of national pride and other considerations, to use a first line fighter aircraft designed and supplied from offshore. These are not questions to be decided alone by the scientific community—but they have a real bearing, or should have, on our decision to spend or not to spend millions of dollars on the research effort involved.

The Science Council has not yet had time to really show what it is capable of doing but I would hope that any pronouncement of scientific policy that this committee may make will stress the need for a continuing body of independent government advisors drawn from those with established expertise in the field, supported by a suitable secretariat.

The ultimate decisions must, of course, be made by the government of the day, but it seems eminently clear that any group of ministers, concerned with the myriad of problems that are theirs, need advice from