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The Control of Technology

It is often argued that science is morally neutral, neither good nor bad. If science is defined as man's accumulated knowledge about himself and his environment, then this is a defensible point of view. It is then technology or the application of science that raises moral, social, and economic issues. The great debate about the responsibility of scientists for the introduction of nuclear weapons has died down, but we are beginning to see that we are faced by a growing number of decisions about the future use of technology that, in total, may be much more important to mankind than even "the bomb."

The tragedy of thalidomide is probably the most clear-cut recent example of the catastrophic effects that can result from a new application of technology where the preliminary research had not been carried far enough to reveal all the long-term effects. The present furor over DDT and other "hard" insecticides is an example of a more complex case of the same kind. The foreseeable dangers from the introduction of new technology range all the way from the relatively clear-cut cases such as thalidomide, to the more complex problems of the widespread use of supersonic aircraft, and on to the infinitely involved social and economic changes that will result from the widespread use of electronic systems for information management.

Society must so organize itself that a proportion of the very ablest and most imaginative of scientists are continually concerned with trying to foresee the long-term effects of new technology. Our present method of depending on the alertness of individuals to foresee danger and to form pressure groups that try to correct mistakes will not do for the future. A rational institutional framework that will assign a formal responsibility for this critical task to a well-selected, well-organized, and well-financed group of scientists is urgently needed. Clearly, this agency must also have strong representation from the social sciences, including law, and close links with political leaders and with "the man in the street." Its task is too important to be left to scientists alone, but scientists must supply the leadership.

In this problem, as in so many, mankind is steering a precarious course between Scylla and Charybdis. On one hand are the dangers of the uncontrolled exploitation of new technology, and on the other are the dangers of such rigid control that progress will cease. Obviously action must begin in individual nations, but it should quickly become international in scope because so many of the potential problems are worldwide. Fortunately we have made a beginning. Suitable control mechanisms have already been formed or are being considered in many areas, such as food and drugs, where the hazards are clear and obvious. The problem now is to extend the same kind of control to broader problems where long-term dangers are potentially more serious and the task of forecasting is much more difficult.—O. M. SOLANDT, *Chairman, Science Council of Canada, Ottawa*