

Technology Assessment and Human Possibilities



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Technology assessment is the concept that more can be known about the consequences of applied science—the impacts of technology on the natural and social environments. The free market economy and democratic political processes are successful at measuring obvious consequences or first-order impacts. Such measurements, largely in conventional cost-effective economic terms, are the basis of management decisions and individual choices.

The recent past has shown by a variety of events that secondary or indirect consequences of technology are often more important—and are difficult to measure or predict. The interactions between technology and human values are exacerbated by the worldwide density of population, the enormous power of applied science to alter the environment, and the recognition of neglected ecological principles.

As a result, a number of projects have been undertaken to develop improved capabilities. Although technology assessment is carried out today in many organizations and to varying degrees, it is often not equal to the task. The objective is to provide decision makers with more information so as to minimize the unintended, unwanted, and unanticipated consequences of technology. Future decisions by government, industry, and citizens will be increasingly burdened with the requirement to demonstrate confidence that risks are understood and measured before going ahead.

In a positive sense, technology assessment can counter objections to change or innovation, and allow decisions to be made in confidence and without undue delay. The urgency of achieving improved technology assessment is obvious to scientists and engineers and to politicians and businessmen.

The studies so far have ranged from university programs of “science and society” or “technology and culture” to ongoing assessments of the supersonic transport, pesticides, and weapons systems. Significant work has been done, and the major problems in getting to a working assessment function have been identified. This general symposium is designed to involve a much larger audience of scientists and engineers in the continuing development of technology assessment.

The state of the art will be reviewed in the first section on 26 December. The Academies of Sciences and Engineering have recently performed studies under contract to the House Committee on Science and Astronautics. Each academy formed multidisciplinary panels which worked independently for over a year. Their reports are complementary and consistent and comprise a detailed and comprehensive overview of the concept.

Other papers will acquaint the audience with the continuing assessment functions in the Legislative Reference Service and the Office of Science and Technology.

The second section is concerned with opportunities and responsibilities for scientists and engineers. Three viewpoints—that is, social sciences, life sciences, and physical science and engineering—are represented. In both sections a discussion period is structured around prepared responses but with the intention that the audience will also be involved.

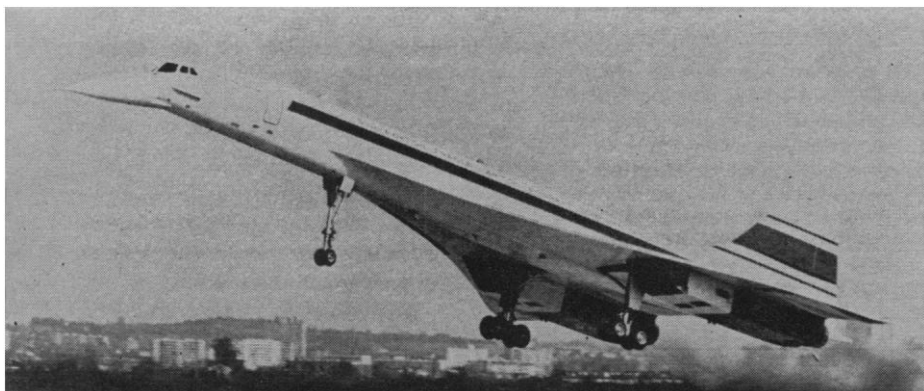
A third section will examine the implementation of technology assessment in the political process. Technical questions before the Congress are always submerged in larger political issues and in a sense the legislative branch of government is the overall evaluator of management options furnished by applied science. Thus, the way in which technology assessment becomes associated with political decision-making may determine the usefulness to society of the entire concept.

This symposium was arranged by a committee: Richard A. Carpenter (Legislative Reference Service, Library of Congress, *chairman*); Athelstan Spilhaus (*presiding chairman*); Bruce Welch (Friends of Psychiatric Research, Baltimore, Md.); Bentley Glass (State University of New York, Stony Brook); Dael Wolfe (AAAS); John S. Coleman (National Academy of Sciences); and Walter Berl, AAAS (*ex officio*).

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British Aircraft Corp.



U.S. Department of Agriculture

