Heuristic Opinion and Preference Evaluation Research for Assessing Technological Options--A User's View

Miller B. Spangler

Special Assistant for Policy Development, Division of Systems Integration, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555

ELITISM VERSUS DEMOCRACY IN TECHNOLOGICAL DECISIONS

"Each honest calling, each walk of life, has its own aristocracy based on excellence of performance." - James Bryant Conant

The decade of the 1970s--at least on the American scene as well as that of certain other nations--will no doubt be remembered by historians as the period when the environmentalist movement came to flower along with important citizenry initiatives on behalf of "participatory democracy," one of Naisbitt's 10 megatrends (1). The backlash against representative democracy was in no small measure a revolt against elitist groups in industry and government who lost the trust of important segments of the citizenry for a number of reasons. Included was their failure to consider and, hence, actively plan to mitigate the unwanted risks and other adverse by-product consequences to society and the environment of technological developments as well as inadequate attention by regulatory decisionmakers to equity issues where public interests come into conflict. Communications failures to properly receive public inputs to the decision process and to openly and correctly inform the public of the decision process also contributed to growing distrust. Numerous mid-course corrections in these failures are being made which, when carried to a more advanced level, will constitute the normal democratic response to alleviating the grass-roots pressures of a legitimate reform movement.

It seems clear to this writer that the coming decade or so will, for many advanced nations, usher in a new public concern: namely, the risk of economic stagnation from a variety of potential causes such as shifts of technological
leadership and an inability for certain domestic goods to compete in international markets, the suspect quality of educational programs, the moral decay and the breakdown of traditional institutions such as family and religious organizations, and a general failure of the pursuit of excellence. In a 1981 Science editorial, "In Defense of Elitism," Nancie Gonzalez observes that Americans, to avoid stagnation, need two kinds of educated bodies—a public that appreciates and urges continued support for research and education, and an intellectual elite to provide both scientific and humanistic understanding to help us cope with the harsh realities of the physical world (2).

The above is not intended as a gloomy forecast of the future, but only a dimensioning of a focal issue of risk to which other issues of risk can be related in a hierarchical structure. Thus, the possible outcome of economic stagnation (and the thwarting of much of the social progress that is purchased through economic growth) is hardly a foregone conclusion. Much will depend on the relative success of an advanced society in focusing its intellectual energies on the key issues of the times including the attainment of an appropriate exchange process by which the value inputs of the public in a participatory democracy are blended with the knowledge and judgmental inputs of intellectual leaders or elites, especially those that are collectively conversant in the fuller set of policy and technical issues related to societal options.

Ignorance, of course, is a commodity shared by individual experts and members of the public, for the problems of information overload bear upon us all. Ignorance contributes to uncertainty and uncertainty to risk. Douglas and Wildavsky have explored the question of how society decides which risks to focus on because most people cannot be aware of most dangers at most times (3). Their conclusion is that because no one person can know more than a fraction of the dangers that abound, some sort of priority must be established among dangers. Our ignorance, of course, extends beyond risks associated with technological options, encompassing also the magnitude of societal (and individual) benefits as well as costs or adverse effects not always thought of as risks. If there is sufficient perception of net benefits (e.g., the time and cost savings and comforts of air travel), it is not uncommon to find that otherwise risk averse persons will mount their courage sufficiently to overcome their fears and anxieties.

Thus, without a balanced perception of net benefits (i.e., gross benefits minus non-risk costs), the individual