CITIZEN SAMPLING SIMULATIONS: A METHOD FOR INVOLVING THE PUBLIC IN SOCIAL PLANNING

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ABSTRACT

The growth of the planning function of government raises the question of how planning can be accomplished by democratic means. A new technological device—the teaching computer—seems to be ideally suited for discussions between "experts" and the public on issues of medium and long-range planning. The teaching computer can be thought of as a mass communications system with feedback.

The present PLATO III system consists of a Control Data Corporation 1604 computer and 70 graphic-pictorial terminals 20 of which can operate at one time.

POSSIBLY A NEW FUNCTION OF GOVERNMENT

In the past two to five years there has been a marked increase in long-range planning activity in the United States and many other nations. Several developments—the establishment of new institutes, the founding of new journals, and the sharp increase in the number of books concerned with the future—attest to the emergence of a new field of activity in many institutions and particularly in industry, government, and universities. (Better information about where we are now and how well our present programs are working would presumably help us in deciding where we want to go and what actions are required to get us there.)

Policy Principles Needed to Coordinate Programs

The demand for changes in existing administrative procedures is in part the result of a need to coordinate the large number of federal programs now on the books. Between 1960 and 1968 the number of federal domestic programs in the United States increased from 45 to 435, according to Daniel P. Moynihan, the President's adviser on urban affairs.

. . . Many people are becoming concerned that our efforts to build a better society do not seem to be producing desirable results. For example, Richard Goodwin [4] has said,

> *. . . Take New York City or any big city. If you ask who decided that this is the way people are supposed to live, the answer is, "Nobody." If you took the 200 most powerful people in New York or Boston and put them in a room and tried to find out if any of them had decided that this is the way people ought to live, you'd find that none of them had—or at least weren't aware they had. So where are the villains? The villain is the set of values and the structure.*

Moynihan has written, "The federal establishment must develop a much heightened sensitivity to its 'hidden' urban policies." He contends that few officials habitually display such sensitivity.

> *They are to their minds, simply building highways, guaranteeing mortgages, advancing agriculture or whatever. No one has made clear to them that they are simultaneously redistributing employment opportunities, segregating or desegregating neighborhoods, depopulating the countryside and filling up the slums, etc.: all these things as second and third order consequences of nominally unrelated programs.*

The effort to deal with interrelated problems is increasing the planning activity in the United States. If, indeed, a new function of government is emerging, the long-term survival of a national commitment to planning will require public support for this activity. A basic assumption of the American system of government is that the best means for achieving long-term public support for decision-making procedures is to involve the public in the decision-making process.

The preceding discussion raises at least two very important questions.

1. Does the growth in the planning activity of government require new forms of communication between the public and government planning personnel, if a democratic form of government is to be mantained?
2. Through what communications media and institutional structures can the members of a community or a nation discuss and decide how they want to live, assuming that it is not possible to get everyone together in a single room at the same time?

How Things Are Done Now

A review of the existing methodologies for public discussion would seem to be instructive.

1. The essay methodology is used by professors and government officials for communicating with each other. The essays may be published in journals or government reports, but they rarely reach a large part of the population.
2. The committee as a means of communication involves much redundancy and frequently more emotion than information . . . . The committee, however useful for purposes such as face to face confrontation, is not well suited to exchanging the greatest amount of somewhat abstract information in the shortest amount of time for each person involved.
3. Mass rallies are important for offering the opportunity to express or renew an emotional commitment. Very little information is exchanged. The rally is better suited to solidify attitudes than to change them.
4. Radio talk shows seem to be most useful immediately after a domestic disturbance such as a city-wide strike. In times of relative domestic tranquility, they tend to be banal and irrelevant to the concerns of the majority of listeners.
5. Town meetings with questions from the floor have frequently been praised as the ideal form of government, though an impractical one in a mass society. Town meetings have other disadvantages, however. They are frequently boring and time consuming and are subject to disruption. The level of discussion tends to be geared low, and visual aids are rarely used.
6. Administrative action tempered by lobbyists such as Ralph Nader permits some but not very extensive public participation. . .
7. In regard to mass media news reports, television and radio are evanescent. The viewer or listener has no opportunity to go back and examine the logical argument or to check a point he missed while his mind was diverted by an earlier remark. Newspapers, particularly in the United States, concentrate on day-to-day events rather than on analysis and criticism of performance over time.
8 Congress is well suited to legislating programs, but it does not at present systematically review the success or failure of the programs which it enacts. Also, Congress in its current form is not organized to coordinate federal programs. The vast majority of Congressional activity takes place in committees which have specialized interests.
9. Films and phonograph records are usually thought of as cultural or entertainment media. But their use as vehicles for political messages has been growing, not incidentally because they are the media most accessible to young people.

Moynihan has noted that efforts to involve citizens in the planning process at the local level have not had the measure of success which was hoped for. One reason might be that there has been no way both to inform and to poll the public at a reasonable cost in terms of the time required from administrative personnel.

Additional criteria for a good communications system for discussing ideas are that it should be free of boredom, transmit information with little distortion, provide the opportunity to ask questions, and require that background information is understood before an opinion is given.

A NEW MEDIUM FOR COMMUNICATION

. . . I will now try to show how a new medium in mass communications offers the possiblity of increasing the level of citizen information and participation in the formulation of long-range public policy.

The Metamorphosis of the "Teaching Computer"

This new medium for communication has existed in rudimentary form for about ten years. However, the realization of the full range of its implications as a possible tool of the democratic process has been limited by its semantic coding. We have been calling it a "teaching computer". Computer-based education equipment has been compared to their printing press in terms of its importance for education. However, the teaching computer might also be useful compared to radio and television. Radio and television are technologies for communicating transient verbal and visual information from a central source out to a large population. *A teaching computer not only sends information from the center to the periphery, it also brings information back from the individual user to the central source. Thus the teaching computer is a communications system with feedback.* Graphic and pictorial information (and in the near future prestored audio messages) are presented to the individual user at a rate which he controls with his keyset.

In addition to its use in conventional education situations the teaching computer could be used by planning personnel to present policy alternatives, as they see them, to the public. Background information would be available upon the request of the person using the "computer-based exploration of alternative futures." The probable consequences of each alternative could also be a part of the programmed material. During the course of the exploration each individual would indicate his opinion of the desirability of each alternative or could be asked to rank them in order of preference. As he explored the alternatives, background information, and probable consequences, the "explorer" would be able to use a "comment mode" to suggest (a) additional alternatives, (b) inadequacies in the background information provided, or (c) his own judgments about the probable consequences of an alternative action.

Preliminary Work is Now Underway

An elementary version of a "computer-based exploration of alternative futures" is already in operation at the Computer-based Education Research Laboratory on the University of Illinois campus. . . This "exploration" was originally proposed . . . as a device for education and social research. It is now regarded as the forerunner of "citizen sampling simulations," which would use the physical equipment of the teaching computer to exchange information and opinions between experts and a cross-section of the public. The medium and long-range consequences of alternative courses of action would be "simulated" and responses obtained from a "sample" of the population. The results, which would indicate what the public considers to be desirable or undesirable policies, would then be submitted to planning personnel for their consideration . . .

The disruption of computer-based education equipment to grade-schools, high schools, and colleges will probably become widespread during the next two decades. The existence of this equipment will bring about the possibility of conducting citizen sampling simulations on the same equipment. *Facilities which are used by children during the day for education could be used by the parents in the evenings both to learn about existing social conditions and future possibilities and to indicate to planning groups their views on goals and priorities.* Computer-based citizen participation in planning will, therefore, be possible even before home computer terminals become widely available.

However, there is no reason why these simulations should follow computer-based education. Public participation in the formation of local or national policy could in a few years come to be considered very desirable. It is also possible that resistance to computer-based education will delay its widespread implementation. If these situations were to develop, the necessary physical equipment could be constructed for purposes of public discussion of policy alternatives. Regardless of which comes first on a large scale or which is considered most important, a discussion of the economic viability of either computer-based education or citizen sampling simulations is incomplete unless all possible uses of the equipment are considered.

A Comparison with Other Proposals

. . . There are two principal advantages to having computer-based citizen sampling simulations in addition to debates or testimony on television. First, the point was made earlier that television is by nature evanescent. A more general statement is that each communications system lends itself to the transmission of a particular type of information. *With a teaching computer the student or citizen controls the rate at which information is presented to him.* He need never be either bored or lost. If he is familiar with the information being presented, he can jump ahead. If he does not understand a particular point, he can ask for additional information. Thus the teaching computer is very well suited for presenting logically complex material to people at different stages of familiarity with the issues.

Second, a citizen sampling simulation requires a model of the social processes involved in the situation being discussed in order to be able to predict the consequences of alternative actions. The need for an operating model requires experts to state explicitly their notions about how the world works. The ideas held by different people about the probable consequences of actions can then be compared.

POSSIBLE LONG-RANGE SOCIAL CONSEQUENCES

The remainder of my remarks will focus on a few of the consequences which might result if citizen sampling simulations become widespread in the next twenty to fifty years. All the consequences taken together would constitute a social transformation of major proportions. However, considering the many communications media now available, society is not likely to rearrange itself around a single newcomer, at least not over night. Therefore, the following possible consequences should be regarded as indications of the direction in which society may be changed rather than as descriptions of a social system not too far off.

The "National Classroom"—A Conception of Government

The fact that both education and government would be using the same physical equipment suggests that these two social activities would be brought Universities might devote less time to teaching professional skills and more time to developing the skills of defining alternatives and recognizing relevant supporting information. In addition, universities might become more concerned with providing general as opposed to specialized instruction about the physical and social environment, thus enabling citizens to more accurately estimate the probably consequences of alternative courses of action. If universities were to change in this way, they would certainly become more relevant to social problems.

Charles Frankel has suggested that democratic government and education have a lot in common. He believes that democracy is the best form of government because it is the most educational. In this case "best" can be interpreted to mean the most stable and just in the long run. The primary difficulty with the "philosopher-king" approach to government is, what happens when the philosopher-king dies before a new philosopher-king comes along? It is useful to recall that "information" is stored in only one way—in individual human brains in the form of specific skills or social norms. Libraries and data banks contain only symbols which must be interpreted by people. A society run by a brilliant and benevolent elite can be irrevocably set back if the elite is displaced from power without a similarly skilled decision-making group taking over. Another important consideration in maintaining a viable society is that people are more likely to behave in a cooperative manner if they feel that they have been consulted in determining social policies.

During a lifetime an individual's experiences increase his store of knowledge. The same process occurs in a society. The fact that nations learn by their successes and failures is indicated by slogans such as, "Another 1929," "Another Munich," and "No more Viet Nam's." Of course the lessons of history are subject to varying interpretation. Nevertheless, it would seem that a society should be able to learn from its experiences and to improve its decision-making procedures, just as the procedures used by individuals have been improved by techniques such as linear programming, game theory, simulation, and systems analysis. One way of improving the learning and decision-making processes of a society would seem to be to acquaint more people more thoroughly with the alternatives which the decision makers are considering and why they choose the alternatives they do. In order to accomplish this *it might be helpful to begin thinking of government as an educational activity on a national scale.*

Television has already created the "nationl classroom." The teaching computer offers the possibility of "government seminars" for those who are interested. The United States of America could be thought of as a course in cooperative living with the government, the media, and the universities operating as a sort of aggregate professor to the rest of the population. Of course the "students" frequently talk back to the "instructor," but then, seminars (democracies) tend to be more interesting than lectures (dictatorships). And of course every four years the "students" have the opportunity to become the "professors," which may be a suggestion for the university.