

URBANA, Ill.--Social scientists at the University of Illinois are participating in a growing study of and concern for--and even attempting to predict--the future.

This is not the predicting that on a given day a certain event will take place--a disaster, a discovery, a milestone achievement--but rather a calculating and speculating based on what man is capable of achieving socially and scientifically.

Scientists--social, biological and physical--now foresee super cities, worldwide communication, ocean farming, air cushion vehicles, genetic manipulation and other happenings by the year 2000, which, after all, is only 31 years away.

Many firms are planning ahead to the 1980's and independent "think tanks" are looking beyond to the millennium. General Electric has set up TEMPO (Technical Management Planning Organizations) where 200 scientists contemplate the future. The U.S. Air Force, of course, has its version of this in the RAND (Research and Development) Corp. in California. The private Hudson Institute contracts to do "policy research" on the future and the American Academy of Arts and Sciences has organized a Commission on the Year 2000 headed by sociologist Daniel Bell.

At the U. of I., a special seminar is being taught about the probability and desirability of human control over the natural and social environment, and a unique computer "game" has been developed so people can explore alternative future worlds.

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The course, as described by its teacher Stuart Umpleby, is an analysis of the effects of technical and social change on institutions, customs, and values. Students are introduced to the predictions and methodologies of the emerging field of research on the future.

Students also review case studies of past, present and foreseeable social and scientific problems in order to gain an understanding of the complexity and uncertainty of social change.

"The world is becoming complex, but the complexity of a society is not as important as the level of uncertainty," Umpleby commented.

Occasionally lecturing in the course are Professors Charles E. Osgood, psychology; Cameron Satterthwaite, physics, and Richard L. Merritt, political science.

As part of the course and as a separate research project, a computer simulation of possible social systems--designed in the form of a game--is being developed.

The idea for the game originated with Osgood, a renowned expert in the psychology of language and communication. He first publicly proposed the project in London in 1966 at a Mankind 2000 conference, attended primarily by scholars from the U.S. and Europe.

Umpleby, a Ph.D. candidate in political science with an undergraduate degree in engineering, since has developed the computer game and the course under the guidance of Osgood.

The game is called Delphi and makes use of the University's pioneering PLATO computer teaching unit. PLATO (Programmed Logic for Automated Teaching Operations) at present consists of 20 individual booths, each with a typewriter-like keyboard and a television screen.

Delphi enables individuals to shape--within limits--future social and scientific developments.

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The future shaped by the "explorer," or player, is determined partly by his own subjective "investments," partly by the relationships between developments and partly by the conditional probabilities of the events happening by the year 2000. These last two factors are built into the computer program.

The probabilities of things happening are based on questionnaires answered by professors, graduate students and upperclass undergraduates.

At the game's present development stage, each explorer is presented with 15 scientific and social happenings that may or may not take place by the year 2000. The explorer chooses five of these developments which he is most interested in following.

The explorer then plays the game (or explores the future) by making investments in each of the 15 developments in turn as they come up for consideration.

However, in trying to arrange things in the game so that developments one considers desirable do, in fact, take place in this hypothetical world of the future, investing in one happening may lower the probability that another would take place.

For example, extensive investments in "3-D color TV" and a "Manned Lunar base" would hurt the chances of "population planning," a "world aid program" or "elimination of racial barriers" by 2000 as a society can direct its resources in only so many directions at one time.

Umpleby pointed out that the game is educational in two senses: in that it is "perspective stretching" by making people think about the future and in that it shows how possible future developments are interconnected.

The exploration is predictive only in the sense that what people want is what they are likely to get in the future, Umpleby explained.

Delphi also can be a social science research tool. The subjective choices of people, according to Umpleby, can be assumed to indicate what they actually want to see happen. If, after compiling a large sample of responses from players, it is found that most indicated a preference for "air-cushion vehicles" or a "staggered work week" over the more important needs of "ocean farming" or "pollution control," it would show that people have been erroneously informed about the basic social necessities and problems facing the world today and that an educational campaign to inform people and to place things in proper perspective is needed.

Umpleby believes "future" games similar to Delphi could be used to help bring public opinion into the social planning process.

He explained that if a planner were asked to alter the transportation system to improve the environment, he might redesign it to eliminate the auto, without any consideration as to the psychological and social values associated with cars. If the man on the street were asked the same thing, he would propose an anti-smog attachment for the car instead.

The same thing holds true for the middle class preference for single-family detached homes and the planners' concept of high rises and town houses for the city of tomorrow.

By making the values and concepts of people known to planners they could weigh these public preferences in their considerations when planning the kind of world we will have in the future.

Thus, in addition to education and research, Umpleby stated, the value of Delphi and games like it can lie in maintaining the democratic ideal of public control in a complex, industrially advanced society.