

The Alternative Futures Project at the University of Illinois

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This past year has found the Alternative Futures Project exploring new areas of interest while further developing previous interests. Most of our research focuses on the possible uses of new communications technologies. However, that area of interest has been interpreted broadly. Our work has dealt with the following:

1. The application of information theory to understanding economic systems.
2. The teaching computer as a mediator among groups with different viewpoints.
3. The advantages and disadvantages of involving a larger proportion of the public in the planning process.
4. How information can best be presented on a computer-based communications medium.
5. The idea of an electronic world university.
6. Contacting and working with people in and around the University of Illinois at Urbana who have related interests

The interdisciplinary course for advanced undergraduates, "The Uses of Science in Environmental and Social Change," is no longer being taught.

Below are abstracts of papers written during the past year or descriptions of research now in progress.

**NEW COMMUNICATIONS TECHNOLOGIES AND CITIZEN PARTICIPATION
IN COMMUNITY PLANNING**

by Valarie Lamont

As a preliminary experiment in involving people in community affairs using the PLATO teaching computer system, a program on a local environmental issue was developed and people from the community were invited to explore the future of this natural resource. The paper describes the preparation of the program, its presentation to the community, the results of the experiment, and points out new directions for this type of research.

This paper was presented at the First General Assembly of the World Future Society held in Washington, D.C. in May 1971.

AN INFORMATION THEORY APPROACH TO THE CONTROL
OF ECONOMIC SYSTEMS

by Stuart Umpleby

Present theories of the market are founded upon the assumption that selection among products is based on the characteristics of the product. However, a major new category of information is becoming available and is being distributed to the people via the mass media, that is, information on the social policies of the companies. The increase in this major category of information raises the possibility that people will act to increase their influence over social trends by injecting social and political considerations into their market decisions.

The approach presented might to some extent be regarded as an alternative both to present American capitalism and to Marxism. The propositions listed on the last page could provide the theoretical foundation of a strategy for making corporations internalize the external social costs of their operations.

This paper was presented at the annual meeting of the Society for the History of Technology, New York City, December 28-30, 1971.

THE FUTURE OF THE UNIVERSITY:
A PROGRESS REPORT ON AN EXPERIMENT WITH A COMPUTER-BASED MEDIATOR

by Valarie Lamont, William Pearson and Stuart Umpleby
with Sherry Beyer and Rhoda Hornkohl

The Future of the University experiment explores the possibility that the teaching computer can be used as a mediator among groups with different viewpoints. The experiment has been conducted in three phases. The first two phases involved compiling a list of issues and developments which would have an impact on the University in the next five years. This information was obtained through two mail-out questionnaires sent to a random sample of students, faculty members, and administrators. For the third phase the accumulated responses from the two questionnaires were incorporated into a program on the PLATO teaching computer system.

This paper presents a summary of the responses obtained from the two mail-out questionnaires. The first questionnaire provided a list of eleven issues and developments and four external events which might have an effect on the University. This list included such items as "open admissions," "University extension by cable TV," "student-worker strike," and "US in economic depression." The second questionnaire was designed to determine relationships among the fifteen issues, developments, and events. That is, participants considered how each item would influence the probability of occurrence of every other item on the list.

One finding from the written questionnaires was that there was more agreement between faculty members and administrators on which issues were most important than between students and faculty members or between students and administrators. There was no overlap in the 10 issues selected as most important by students from a list of 50 with the 10 issues selected from the same list by administrators. Students and faculty members agreed on 3 of the 10 most important issues. Faculty members and administrators agreed on 4 issues in their lists of the 10 most important issues from the list of 50.

This paper was presented informally at the First General Assembly of the World Future Society held in May 1971 in Washington, D.C.

THE FUTURE OF THE UNIVERSITY EXPERIMENT: PROGRESS REPORT #2

by James W. Gilfillan

This paper reports on the responses of people to working through the Future of the University program, the third phase of the experiment described above. The original data for this program was obtained from the accumulated responses to the two mail-out questionnaires. A random sample of students, faculty members, and administrators were invited to a demonstration of the program.

The results of these first demonstrations include the number of events which the participants considered, the particular events considered most frequently, opinion changes on events after being presented with judgments by other groups about their possible secondary effects, and typed comments to open-ended questions. Participants were asked to suggest which items should be deleted and which should be retained in future versions and also were asked to recommend new issues, developments, and events. Most participants agreed that PLATO could be used for tasks besides teaching but were pessimistic about how useful it would be in resolving differences among groups within the University. However, the program used in this experiment is in many ways quite elementary and is based on a limited store of similar experience. For differences based on genuine conflicts of interest, PLATO could be helpful in clarifying points of view and perhaps in formulating and examining alternative institutional arrangements.

This paper was written as a term paper for an undergraduate course in Computer Science.

STRUCTURING INFORMATION FOR
A COMPUTER-BASED COMMUNICATIONS MEDIUM

by Stuart Umpleby

Hardware now being developed for use in computer-based education can be thought of as the forerunner of a new generation of communications media. Since previous communications technologies have led to the development of new literary forms, it is reasonable to assume that computer-based communications media will also adopt a unique way of structuring information. The forerunner of this new literary form may well be the Delphi Technique which has been developed as a forecasting methodology. This paper outlines the use of "information units" as a flexible way of describing possible futures, presents data from early versions of an "exploration of the future" on the PLATO system at the University of Illinois, and discusses how this data might be thought of as examples of feedback messages in the two-way literary form of a computer-based communications medium.

This paper was presented at the Fall Joint Computer Conference held in Las Vegas, Nevada, November 1971 and appears in the proceedings of that conference, pp. 337-350.

THE TEACHING COMPUTER AS A GAMING LABORATORY

by Stuart Umpleby

Computer-assisted instruction equipment now being developed offers unique opportunities to people interested in man-machine simulations:

1. A teaching computer constitutes a marked improvement in the man-machine interface in terms of reduced noise and improved visual displays.
2. The computer acts as an omnipresent tutor, reminding players of the rules of the game and ensuring the legality of each move.
3. The computer automatically keeps track of all responses made by each player.

Assistance in conducting man-machine simulations is only one of the advantages of the teaching computer. This paper suggests that teaching computers can also be used to incorporate data banks of social indicators and all-machine simulations into human-player games. The teaching computer also offers the possibility of replacing one or more human players with a computerized decision-making model. In the area of one-person games, the teaching computer presents other opportunities. Role-playing games used as "citizen sampling simulations" could become an important tool in the democratic operation of a

technologically complex society. Finally, expertise with one-person games may well contribute to the development of interaction games which take place in a changing environment. This article appeared in Simulation & Games, March 1971, pp. 5-25.

AN ELECTRONIC WORLD UNIVERSITY: PROGRESS REPORT #1

by Richard Goldstein

In the first newsletter we described a project to determine the possible explanations for the lagging application of electronic technology to the problems of world-wide education. As a first step in this direction a questionnaire was distributed in an effort to clarify the notion of an "electronic world university" and to locate others working in this field. The questions focused on the following ideas:

1. The definition of a world university.
2. The desirability of the extension of education to larger numbers of people versus the desirability of linking up existing universities.
3. Whether an electronic world university is necessary or whether existing educational methods are adequate for coming decades.
4. Groups which would favor or oppose the alternatives presented in question #2.
5. The social consequences of the alternatives presented in question #2.
6. A description of present efforts relevant to developing an electronic world university.
7. How an electronic world university might be implemented.

The questionnaire was sent to people who have expressed some interest in related fields. This paper presents the questionnaire and the responses which were received. Since Richard Goldstein has now graduated and left the University and due to our limited resources, further work in this area will probably be limited to a more careful review of the results of the questionnaire.

Those interested in this topic are encouraged to write to Michael Marien at the Educational Policy Research Center at Syracuse University, 1206 Harrison St. Syracuse, NY 13210. Marien has done considerable work on this subject and is familiar with the projects now underway.

We would be glad to send copies of the reports mentioned on the preceding pages or those reports listed at the end of the first newsletter. However, due to a severe shortage of funds at present and the time involved in assembling and mailing reports, we have been charging about two dollars for papers requested in order to cover printing, mailing, and handling expenses. These rates are reduced or waived for students or others on limited incomes. Also, we do not usually charge people with whom we regularly exchange papers.

ASSASSINATIONS

For the past few years we have been following the articles and books being published on the assassinations of the 1960's-- primarily John F. Kennedy, Martin Luther King, and Robert F. Kennedy. An important series of articles on the assassinations began appearing in the magazine Computers & Automation in May 1970 and is continuing. Several of these articles have resulted from research being conducted by the National Committee to Investigate Assassinations, an independent group based in Washington, D.C.

Those interested in alternative domestic political futures might find the C&A series of interest. The magazine is operating as a forum, publishing both original articles and criticisms of earlier articles. If the information published in that magazine in the past year and a half begins to become available in the mass media during the 1970's the impact might be greater than that of The Pentagon Papers.

Back copies and subscriptions can be obtained by writing:
Mr. Edmund C. Berkeley, Editor
Computers & Automation
815 Washington St.
Newtonville, Mass. 02160

The Committee to Investigate Assassinations publishes a newsletter roughly quarterly:
National Committee to Investigate Assassinations
927 15th Street NW Room 409
Washington, D.C. 20005

Below are related research projects being conducted at the University of Illinois at Urbana-Champaign.

THE HISTORY OF THE FUTURE

by James W. Carey and John J. Quirk

The myths of the past condition our thinking about the future. Illuminating trends in our images of communication technology and of The Future can contribute to the demystification of the cultural process. The Future has at times been exploited as a strategic cover of authors, public officials and policy scientists who find it convenient to mask their own biases and favorite programs by means of invoking an attractive, prefabricated image of tomorrow. In particular the paper disputes those sets of predictions and policies which project that by means of new electronic technology there will be a change from patterns of centralization to decentralization, from manipulation to participation, from pollution to environmental balance. The authors maintain that the future is least viable if it merely implies the continuation of previous illusions of surface change while underlying trends in concentration of power and control and cultural fragmentation accelerate. They propose the reintegration of non-technological elements of cultural and political traditions into conceptualizations of the future as a way out of the recurring impasse whereby The Future has often been a mirage offered to the general public to offset loss of confidence in the established system.

Professor James W. Carey is director of the Institute of Communications Research at the University of Illinois. John J. Quirk is a former student of political science at the University and is now a writer. This paper has been prepared for the International Symposium on Communication: Technology, Impact, and Policy to be held at the Annenberg School of Communications, Philadelphia, March 23-25, 1972.

DISCIPLINES AND THE IDENTIFICATION OF INTERDISCIPLINARY OPPORTUNITIES

by Gerald R. Salancik

A research proposal to explore the social utility of the behavioral sciences has received funding. The project is being carried out in two stages. The first stage concentrate on specifying the areas of social concern for which there is a potential for interdisciplinary study in the social sciences. This stage also involves mapping the research now being conducted at the University of Illinois which might contribute to interdisciplinary social problem solving.

The second stage will provide a listing of specific scientific and technological developments which each discipline in the social sciences can contribute to a solution of the social problems of concern.

Gerald R. Salancik is an assistant professor of Business Administration and Psychology at the University of Illinois and formerly was with the Institute for the Future. For more information on this study write to him at 494 Commerce West, Urbana, Illinois 61801.

SOCIAL POLICY IMPACT MODEL (SPIM)

by Carl Patton and Tracy Smith

SPIM is a program on the PLATO system designed to generate a list of social indicators describing a community five years in the future. Participants are presented with a set of social programs, current budget allotments for these programs, and a set of social indicators which describe his community at the present time. The participant then allocates a given five-year budget among these social programs. He may increase, decrease, or keep constant the levels of spending.

Based on the budget allotments by the person at the computer terminal and using a matrix of subjective judgments, SPIM generates a list of social indicators which "describe" this community five years from the present. The exercise is intended to stimulate the thinking of various groups as well as decision makers about the future and to help them formulate their own views regarding long-range issues and alternative solutions.

Carl V. Patton is an assistant professor of Urban and Regional Planning at the University of Illinois. Tracy Smith is a graduate student in Urban and Regional Planning. For more information contact Carl Patton, 909 West Nevada, Urbana, Illinois 61801.

This newsletter was assembled and edited by Valarie Lamont. Correspondence to either Valarie Lamont or Stuart Umpleby should be addressed to the Computer-based Education Research Laboratory, Urbana, Illinois 61801.
