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COMMUNICATION THEORY in the CAUSE of MAN

Notes on the application of General Systems Theory, Cybernetics, Information Theory, and related fields of Communication Theory to the strengthening of democratic institutions on our planet.

INSIDE THIS ISSUE:

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Statement of the Earth Regeneration Society, 2 pages (Urgent Announcement).

Material developed by Fred Bernard Wood of Computer Social Impact Research Institute for Society for General Systems Research and the Earth Regeneration Society.

SIG P/T Report No. 7, Spring-Summer 1982, 5 pages.

SIG P.T Report No. 8, Spring 1983, 4 pages.

Fred Bernard Wood, "Using the Philosophy of GST to Integrate the Data on Carbon-Dioxide Buildup Impact on Glaciation," 6 pages, copyright 1983 by Society for General Systems Research, reprinted by permission.

Parts of Title Page:

Formerly "COMMUNICATION THEORY in the CAUSE of MAN." The word "MAN" changed to "MANKIND" to make it obvious that we are referring to both men and women.

FEBRUARY 1, 1984

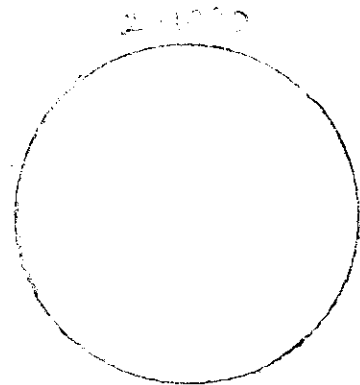
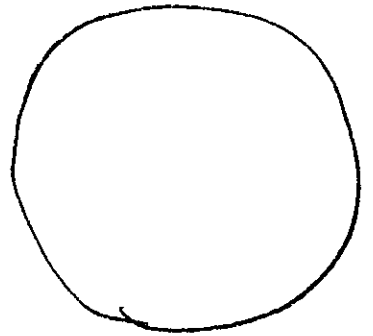
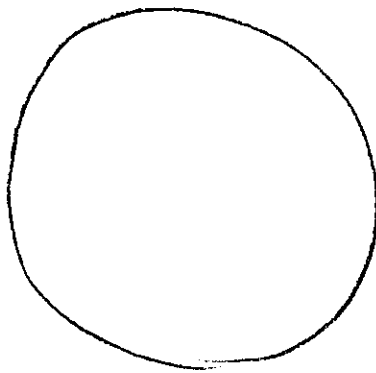
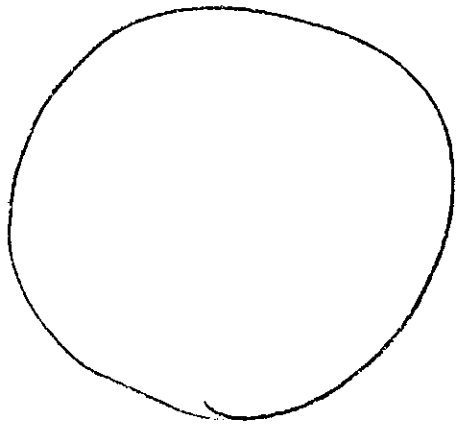
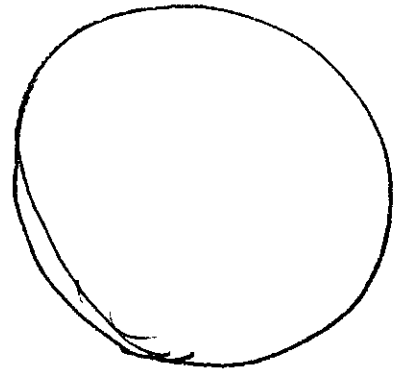
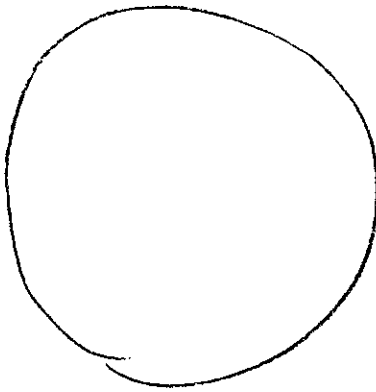
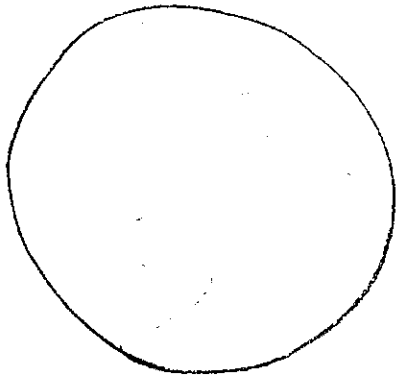
Notes on the application of Computer Science, General Systems Theory, Cybernetics, Information Theory and related fields of Communication Theory to the strengthening of democratic institutions on our planet.

LEVELS OF PLANETARY CONSCIOUSNESS FROM ONE-TO-ONE TO SIX-TO-4,600,000,000
OR
FROM A JUNGLE CLEARING TO THE TECTONIC/OCEANIC/ATMOSPHERIC GLOBAL SYSTEM

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glaciation have not been proved. Our approach in general systems theory is to try to find or develop a thesis or thematic-hypothesis that encompasses the total phenomena and then search for what experimental facts agree or disagree with the thesis.

In physics none of the basic theories have been proved. For example, Einstein's special theory of relativity relating electromagnetic theory to mechanics is accepted, because all competing theses (theories) have inconsistencies with known experiments.

In the table above, we have established five columns of categories to help us develop an overview of the problems of planet earth, in a way that helps us do as complete as possible coverage of all the phenomena involved.

In (1) MODES OF OPERATION we list three modes that must be coordinated in the analysis of a complex problem: Use of the intuitive -artistic -poetic functions of the right hemisphere of the brain in a relatively unconscious mode to develop thematic hypotheses; the observation and measurement of physical phenomena in Empirical Science to test both intuitive concepts from the right brain and abstract -logical hypotheses from the left brain; use of the abstract -logical features of the left hemisphere of brain to develop more conscious mathematically computable hypotheses. For a brief discussion of the functioning of right and left hemispheres of the brain see Bowler (ref b, pp. 97-99).

In (2) LEVELS OF PHENOMENA (Universe) we have listed a hierarchy of levels of mass/energy in the universe. The lower part of the column lists the hierarchy of energy/particles of chemistry and physics. In the upper part the different levels of objects in the universe ranging from planets to galaxies to black holes. Indented under sun are three levels of energy from the sun that may occur.

In (3) LEVELS OF PHENOMENA (Planet) the upper hierarchy is the levels of living systems on our planet, and the lower hierarchy represents the layers of systems of the planet from the core out to the atmosphere. Under geoids are listed possible catastrophes described by Asimov (ref g). Under tectonic systems the hydraulic pressure of the fluids in the mantle are noted. In addition to the hydraulic pressure there is energy from radioactive decay of atoms and also the possibility of natural nuclear reactors where a critical mass of U-235 accumulates. Naturally occurring nuclear fission reactors of 1.8 billion years ago are identified by the Sourcebook Project (ref. f).

In (4) EVOLUTIONARY SUB-SYSTEMS we start from the bottom with Cosmological Evolution and move up through Physical-Chemical, Biological, Technological, and Cultural Evolution. Technological Evolution is divided into three stages: force era, power era, and communication era. The Communication Era brought us the electronic computer-communications tools just in time for use in diverting the coming transition from an interglacial period to a glacial period.

In (5) CYCLICAL SUB-SYSTEMS we find sociological cycles in the philosophy of Hindus in India and the Hopi Indians in North America. The Hindu yugas have cycle period times that bear some resemblance to the time cycles of the glacial periods. The GAIA HYPOTHESIS states that the conditions of the earth's surface, oceans, and atmosphere will adjust to conditions for the maintenance of life on our planet. Hamaker's thesis is consistent with this in that over each 100,000 year cycle the amount of carbon dioxide in the atmosphere and the amount of ice in the glaciers adjust to replenish the soil so that plants can again grow on this planet after the topsoil is demineralized and otherwise dissipated. In order for the glaciers to grind and distribute gravel to make the new topsoil, a large part of the plants, animals, and humans may die as the glaciers advance, leaving a smaller population of living matter

in the tropics. By Hamaker's thesis the increasing carbon dioxide from our industrial society is accelerating the coming of the next glacial period.

In our review of the literature on agriculture-weather-carbon dioxide, none show explicit use of general systems theory. However the thesis of John Hamaker on carbon dioxide and glaciation shows the most complete coverage of the sub-systems that would be considered from a general systems point of view. John Hamaker's thesis comes close to satisfying the General Systems Approach of relating to the known facts in all the related fields of phenomena.

This general systems approach does have an element of incompleteness by reason of the analysis starting from the more general (or top-down) and going down into the more specific details. To make this analysis more complete, the next step is to get the experts in the approximately twenty fields of science involved to cooperate with each other to fill in the missing gaps in the research on carbon dioxide, weather, soil demineralization, and glaciation.

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- (g) Isaac Asimov, A Choice of Catastrophes - The Disasters That Threaten Our World, New York: Fawcett Columbine (1981).
- (h) J. E. Lovelock, GAIA A new look at life on Earth, Oxford: Oxford University Press (1979) p. 152, definition: Gaia Hypothesis: This postulates that the physical and chemical condition of the surface of the Earth, of the atmosphere, and of the oceans has been and is actively made fit and comfortable by the presence of life itself. This is in contrast to the conventional wisdom which held that life adapted to the planetary conditions as it and they evolved their separate ways.
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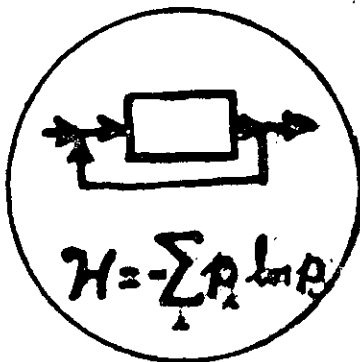
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(k) Peter Russell, The Global Brain - Speculations on the Evolutionary Leap to Planetary Consciousness. Los Angeles: J. P. Tarcher, Inc. (1983) 251 pp. "The Gaia Hypothesis" pp. 21-26; "General Living Systems Theory" pp. 27-31; "Humanity in Gaia" pp. 31-33.

TGS.ERS.1B

COMPUTER SOCIAL IMPACT RESEARCH INSTITUTE, INC.

A non-profit organization
conducting research on
the social impact of
computer technology.



CSIRI

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when unattended for short time
intervals.

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PURPOSES:

The specific and primary purposes are the carrying out of fundamental research on the interaction of engineering concepts and technology with sociological systems, the results of which will be freely available at nominal cost to the general public;

The development of computer systems for educational purposes, and to assist non-profit community organizations in the development of software suitable to their needs;

And the gathering and dissemination to the public of information on the above subjects.

A list of the major questions on our list of proposed research projects is included in this brochure.

Will you join us by making an annual contribution to our research program?

Each person who becomes an associate member or regular member of CSIRI will receive reports at irregular intervals on the progress of our research.

A membership application form is included at the back of this brochure for your convenience.

COMPUTER SOCIAL IMPACT RESEARCH INSTITUTE

List of Proposed Research Questions as of August 1980

1. How thoroughly are the problems of the social impact of computers being studied?

What is the history of the consideration of the problems?
Are there adequate bibliographies on the social impact of computers?

Plan to review what has been accomplished by organizations such as: ACM SIGCAS(Computers and Society); IEEE Committee on Technology and Society; Society for Social Responsibility in Science; Science for the People. Also review what was accomplished by NSF sponsored studies and conferences of a few years ago. Also review how this area of study is now being examined by the Office of Technology Assessment of U.S. Congress.

2. What are the qualifications needed for people to investigate the social impact of computer technology and theory?

Does it require academic computer scientists and sociologists?

Or does it require computer scientists and engineers who are deeply involved with the reduction to practice of computer science?

Or does it require a combination of the two groups?

And does it require people from church and environmental and civil liberties groups?

If the second and/or third categories apply, how do we deal with the alleged principle of "conflict of interest" and/or the problem of "proprietary information" in such studies?

3. What are the potential theoretical spin-offs from the underlying areas of computer science such as Information Theory, Cybernetics, and General Systems Theory?

Does the concept of "entropy" help us understand sociological systems?

We have started on this project by running an information retrieval search by computer using the Lockheed DIALOG system on some social science data bases. The first pass yielded 183 citations to the use of the concept of "entropy" in the social sciences, which we are now evaluating.

Do negative feedback loops of cybernetics help us understand social and political systems?

Does general systems theory give us an economy of understanding through the discovery and use of concepts common to several fields?

4. What impact does computer technology have on the ability of small organizations, church groups, civil liberties organizations, and environmental groups to evaluate the ethical implications of alternative decisions in our society?

5. Is there an imbalance between the development of software and hardware in the computer industry that makes it more difficult for community groups to obtain the computer services that they need?

6. What combinations of computer science and technology are necessary for small organizations to achieve the ability to simulate world economic and political systems?

7. What is a plausible development path for the realization of Lasswell's concept of the "Social Planetarium" (Proc. of the Western Joint Computer Conference, Los Angeles, 1958). ?

8. What kind of a matrix best displays the levels of computer hardware and levels of computer software and their interaction needed to make the optimum use of computers fully realizable for small groups?

9. Would a reversal of the sequence of developing hardware first then software make powerful computer programs for the analysis of social issues more accessible to public interest groups such as the Sierra Club?

10. Are the recent advances in computer assisted design graphics putting the social scientists further behind the the engineers designing new control systems?

Identification of Officers of the Computer Social Impact Research Institute

Fred Bernard Wood, B.S., Electrical Engineering, University of California, Berkeley, 1941; Staff Member, M.I.T. Radiation Laboratory, Cambridge, Mass, 1941-1946; M.S., 1948 and Ph.D., 1953, Electrical Engineering, U.C. Berkeley; Staff Engineer --- Advisory Engineer, I.B.M. Corp., San Jose and Los Gatos, Calif., 1952-1980; Eta Kappa Nu, Tau Beta Pi, Phi Beta Kappa, Sigma Xi; I.E.E.E., A.A.A.S., Society for General Systems Research, American Society for Cybernetics.

Bob Richardson, B.S., Chemistry, Stanford University, 1949; Instructor, Chemistry, U.C.L.A., 1953-1955; Associate Professor, Chemistry, San Jose State University, 1955-....; Phi Lambda Upsilon, Tau Beta Pi, Sigma Xi; American Chemical Society, A.A.A.S.

Byron Hale, B.A., Mathematics, University of California, Berkeley, 1970; M.S., Cybernetic Systems, San Jose State University, 1977; Computer systems and software consultant, 1975-....; I.E.E.E., FORTH Interest Group.

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Dues and additional contributions are deductible for U.S. income tax purposes.

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(signature) _____ Date _____

Name: _____

Telephones:

Address: _____

Business: ()-____-____

City: _____ State: _____ Zip: _____

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If applying for REGULAR MEMBERSHIP, print the name of the Regular Member of CSIRI who is sponsoring your application: _____ and send this application to your sponsor for his signature.

I recommend the above applicant for membership in the Computer Social Impact Research Institute.

(signed) _____ Date _____

OR

If you do not know a regular member, attach a resume of your work to this application and send to CSIRI business office.

Please make checks out to: Computer Social Impact Research Institute, or abbreviate " CSIRI "

Freedom joint to Progress can only be possible if Democracy operates. Democracy can only live if a general participation of individuals can be ensured to Forecasting and Decision-Making in the social problems. Forecasting means Understanding and Decision-Making means Managing solutions.

The Learning Process allowing a general participation of individuals to Understand and to Control their problems can save Democracy only if it results practicable by everybody disregarding his or her skills or human profile.

Self-Managed education is a concept applicable to scholar education and to permanent professional education.

It can consist of well designed Group-Dynamical procedures guiding small teams of individuals of a very wide spread of personal profiles and educational origins to : mutually stimulate (in the Debate Sessions) and to individually revise their perception of the problems (in the Personal Study Sessions).

A repetitive pattern of Debate and of Study Sessions may help namely both : individuals to broaden their Intelligence and the team to attain a more appropriate Global Perception of the problems.

Solutions and the very consistence of Problems very much depends namely by the "appropriateness" of their Perception and Placement within the Globality of the surrounding.

The Procedures for an appropriately guided Group Dynamics should leave space to the diverse roles generally possessed by the individual actors in the game of interpersonal interactions.

"Doers" pulling the items and pushing ideas; "Specialists" analyzing and caring for the reductionist tasks of knowledge; "Generalists" synthesizing and caring for the holistic tasks of knowledge; "Opinioners" supporting with criticism on the basis of good-sense.

Not only should space be left to those Diversities but their original contributions should be amplified and stimulated (if Intelligence shall Grow). Conflictuality inbuilt in Diversity should however be damped and channeled into Integration (if Growth shall be Synthropic)

The concept of Self-managed education requires being adequately supported by appropriate tools : for investigating items of information; for expressing synthetically diverse hypotheses; for comprehensible interdisciplinary reporting; for hierarchically structuring levels of meaningfulness; etc..

Such a concept of Self-managed education could also be applicable to Management Patterns and Procedures (in the productive life) and to Forecasting and Decision-Making Patterns and Procedures (in the service of the teams composed by the political leaders and by their technical supportive equipes).

At any echelon of Decision-Making in the public life such self learning methodologies could improve the quality of Decision-Making and the reliability of the subsequent management and control of operation

A more satisfactory Intelligence of the Problems could improve the quality of Communications and therefore the credibility of the political leadership by the men-in-the-street and by the bureaucratic structures.

Higher credibility could improve Consensus and Participation to the

most critical social choices.

System Sciences and Informatics could supply the methodological tools for analyzing the Patterns of Group Dynamical interactions as to consolidate them into regularly applicable Procedures and Information flows.

Once designed these Procedures could be studied by Computer Sciences as to support with automation the fluxes of Information necessary to ensure their operation and convergence into useful outputs (i.e. into products credible and reproducible).

Information Sciences and the Social Communications could improve finally the average capacity of Specialists to communicate between them and toward the non-experts.

Democracy could be facilitated in its life because of the higher transparency of Forecasting and of Decision Making and because of the higher consensus by bureaucracy (the State) and by the men-in-the-street (the Public Opinion) resulting from the higher transparency and the better Social Communications concerning the Forecasting and the Decision-Making on the most appealing Social Issues.

The Consistency between the short-term and "local" interests and the Inter-national, the Inter-generational, the Inter-sectorial ones will be left as a challenge to the creativity of the Political Leaders. There will be more space in Politics for Statesmanship and less for Porkbarrelhood.

Cybernetic Systems Background.

Ross Ashby defined three eras in the development of technology.

Force Era: 7000 years span: force amplifying devices such as levers, pulleys, bows and arrows. (FORCE)

Transition: First Industrial revolution. 1660- steam engines

Power Era: 300 years span: power amplifying devices such as steam engine, electric motor, gasoline engine, diesel engine, atomic fission bomb, nuclear power generators, and hydrogen fusion bomb (POWER)

Transition: Second Industrial revolution. 1960- electronic systems

Communication Era: 24 years (from electronic computers, 1960) c 42 years (from RADAR, 1942) Intelligence amplifying devices such as RADAR, SONAR, electronic computers, television, automated factories and chemical refineries, and communication satellites (ENTROPY)

Some examples leading to intelligence amplification. (Adapted from Stuart Umpleby):

- 1/1: One-to-one regulation of variety in football games and infantry warfare.
- 2/1000: Regulation of civil disturbances by two policeman per thousand population. Assumes cooperation most of the time. This also applies to management by exception in large organizations.
- 1/640,000: Regulation of pollutants in atmosphere or control of advanced technical information. This ratio level applies to setting an organization such as the EPA to monitor ecologic pollutants, and organizations like the CIA and KGB to control technical information.
- 4/4,000,000,000: Epistemological regulation: changing the game from nation-state view of the world to a population and resource view of the world. Four key people developed the World computer simulation model in 1972 that triggered the use of computer simulation by all major countries in the world
- 5/4,300,000,000: Epistemological regulation: expanding the game from a world resources and population viewpoint to add the behavior of the atmosphere to our consciousness -- leading the TTAPS Report on the Nuclear Winter, in which the dust thrown up into the atmosphere by nuclear bombs blocks the sunlight coming to the earth for up to a year after the nuclear warfare.
- 6/4,600,000,000: Epistemological regulation: changing the game by a quasi-completeness theorem in general systems theory to include the earth's mantle (tectonic activity) and the whole biosphere in analyzing the habitability of the planet earth

rational analysis of the rising carbon dioxide in the atmosphere. A cornerstone in the development is the construction of a valid computer simulation of the significant processes in the biosphere and the earth's mantle capable of testing Hamaker's thesis on the glacial cycle.

Plans:

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URGENT ANNOUNCEMENT

EARTH REGENERATION SOCIETY
470 Vassar Ave., Berkeley, CA 94708

The Earth Regeneration Society was formed July 12, 1982, to act as a catalyst to encourage action about the buildup in the earth's atmosphere of carbon dioxide and the relationship of the latter to food shortages, deforestation and accelerated glaciation.

The loss and depletion of trace minerals in the soil hastens crop and forest decline, which in turn causes a buildup of CO₂ in the atmosphere. The CO₂ buildup traps the sun's energy and the resultant warmer air masses carry more moisture out to meet the colder air masses in the polar areas, forming more cloud coverage and dropping more moisture in the form of snowpack. The "cold" is building up and moving from both poles toward the temperate zones. We are coming to the end of a 10,000-12,000 year interglacial period, and now glaciation is accelerating. While the recent changes in weather patterns have been very dramatic, the most immediately harmful impact of mineral depletion is the rapid decrease in the U.S. and world food supplies. This is occurring despite the geometrically increased use of fertilizers and pesticides. The solution lies in a crash program of soil improvement, re-forestation, conservation of the great forests and swamps, and alternative energy technology replacement of fossil fuels.

Numerous science organizations, and citizen groups dealing with science/social matters, are pointing to dangers in the buildup of CO₂. One of the strong writers in this area is John Hamaker, who has identified five major processes: (1) CO₂ buildup in the atmosphere, (2) related weather changes, (3) destruction of our food supply from drought, freezing weather, storms, (4) reduction of forest areas and poorer growth of existing forests, and (5) depletion of the basic minerals in the soil necessary for the organic growth processes. Hamaker's analysis indicates that we have about ten years remaining to stop the CO₂ buildup or we will reach a point of no return in the destruction of our food supply and resulting starvation and the breakdown of world society.

Whether or not Hamaker is correct in his time prediction, the logic is clear: These issues must be placed in front of the people of the United States and all other countries. World-wide cooperation is required as never before in order to bring about (1) a change in energy technology from coal/oil/gasoline/nuclear to alternative energy forms, (2) an international re-forestation program, and (3) the same for re-mineralization of the earth (grinding rock and gravel and spreading the material as needed). It is now up to the people of each country to call for and to carry out massive new investment and employment programs.

The solution to our survival must be a program involving all organized labor, currently unorganized groups, corporate ownership organizations, and governments from the local level, to national and international levels. This program is to reduce the CO₂ concentration back to 290 parts per million (from over 335 ppm now), by re-mineralization of the earth, where needed, in order to allow for proper forest and food growth, by re-forestation, and by changeover of energy source technology. Striving for survival with the anti-nuclear movement we will be transforming the control and use of all available resources to regenerate the earth - maintain the food supply and forestation, thereby stabilizing the weather and thereby moving to prevent increased glaciation.

Our call to you is to concentrate on (1) reaching citizen/political groups, (2) national/state legislation, U.N. parallel action (3) working with the media, with publications, (4) developing and carrying out economic plans for changes in investment, resource use, labor training and employment, and (5) in general move towards total awareness for all people of a precarious position.

Never has human society faced such a creative challenge -- to maintain our food supply, to replace many economic and social relationships, and to achieve a wholeness in awareness, analysis, organization and human concern. We are entering a new, a conscious, era of regeneration of the earth. Our reason for being must be to transform the whole of our society to more appropriate relations and a balance with the earth and the atmosphere.

The Earth Regeneration Society recommends this new essential systems approach:

THE SURVIVAL OF CIVILIZATION

In their 218 page book, published in April 1982, John Hamaker and Donald Weaver trace the relationship of the earth's soil, climate and tectonic system. They examine the true "greenhouse effect" of excess carbon in the atmosphere, and the disastrous role being played by our degenerating, eroding soil and plant life. They take a hard look at present human malnutrition approaching worldwide starvation, and the inability of chemical-dependent, exploitative agriculture to prevent the crises. The authors are concerned with the need to act immediately to prevent further glaciation.

For a copy, send \$8 (postage paid) by check or money order to:
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EARTH REGENERATION SOCIETY, INC.

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The Earth Regeneration Society, Inc. is a non-profit corporation formed as a catalyst to encourage action in response to the buildup in the earth's atmosphere of carbon dioxide, and the relationship of increased CO₂ to worsening weather extremes and unpredictability, demineralization and degradation of soils, food shortages, deforestation and accelerated glaciation.

The imposition of human technologies has created profound and permanent effects upon the state of Nature. Some of these effects are immaterial. Others are reversible. Yet others are irreversible. It is the objective of the Earth Regeneration Society, Inc., to:

1. strive for a global effort to stop all effects which are known to have irreversible outcomes;
2. impose upon new technologies moral and technical standards by which reversible and irreversible damages are minimized;
3. find ways to assist the Earth in regenerating itself.

The Earth has natural processes whereby regeneration occurs. The primary ones are greatly increased glaciation and volcanism. In a sense these are cleansing cycles. The atmosphere changes and then changes back. The surface of the earth is reground and remineralized, allowing top soils to be replenished. When the glaciation and volcanism period is over, microorganisms, plants, animals, and other life forms spread from survival "islands" to repopulate the greater portions of the Earth. (In recent geologic time, glacial periods have lasted approximately 90,000 years; interglacials have lasted about 10,000.)

Presently, we are entering a glacial period. As this occurs, most temperate latitudes, including North America and Europe, will become uninhabitable. The ramifications for life on Earth are daunting. Notably, life as we now live it will be devastated.

The Earth Regeneration Society believes that this oncoming glaciation period can be averted. First the worldwide community must stop doing those things which accelerate glaciation. Secondly, if we, as a worldwide community, artificially accomplish what glaciation will do naturally, we can eliminate its natural necessity.

The means are to redirect our massive technological capabilities from their presently destructive ends. We must conserve, remineralize, and re-forest, using our technological capabilities before we pass the eleventh hour. We must also stop spreading complex toxic molecules through the biosphere.

The loss and depletion of minerals in the soil hastens crop and forest decline, which in turn causes a buildup of CO₂ in the atmosphere. [Recall that trees and plants extract CO₂ from the atmosphere and return oxygen to it.] The CO₂ buildup traps the sun's energy and the resultant warmer air masses carry more moisture out to meet the colder air masses descending from the polar areas, forming more cloud cover and dropping more moisture in the form of snowpack. The "cold" is building up and moving from both poles toward the temperate zones. While the recent changes in weather patterns have been very dramatic, the most immediately harmful impact of mineral depletion is the rapid decrease in U.S. and world food supplies and the mineral quality of this food. This is occurring despite the geometrically increased use of fertilizers and pesticides.

Numerous science organizations and citizen groups dealing with science/social matters, are pointing to dangers in the buildup of CO₂. One of the strong writers in this area is John Hamaker, who has identified six major processes: (1) depletion of the minerals in the soil necessary for the organic growth processes, (2) CO₂ buildup in the atmosphere, (3) related weather and climate changes, (4) reduction of forest areas and poorer growth of existing forests, (5) destruction of our food production and supply from drought, freezing weather, storms and impoverished soils, resulting in degenerative diseases, and (6) increased volcanic and seismic activity. Hamaker's projection, based on his analysis of the work of respectable scientists worldwide and interpreted through his own experience and incisive thinking, indicates that we need to start major physical work this year, and to initiate a full program to stop and reverse the CO₂ buildup, or we will reach a point of no return [in 5 to 10 years] in the destruction of our food and forest-growing soils, and any semblance of predictable weather and a reliable food supply. This will result in starvation and breakdown of world society.

Regardless of one's view of the rapidity of oncoming glaciation, there can be no dispute that the issues of soil mineral depletion, deforestation, and severe climate changes must be placed in front of the people of the United States and all other countries. Nature is determining the course of events and how human beings must respond to survive. World-wide cooperation is required as never before in order to bring about (1) a change in energy technology from coal, oil, and nuclear generated energy to alternative energy forms, including biomass, solar, wind, geothermal, tidal and wave generated energy, (2) an international re-forestation program, and (3) re-mineralization of the earth (grinding gravel from natural deposits and spreading the material as needed). It is up to the people of each country to call for and to carry out massive new investment and employment programs. An integrated response to these problems would involve, for example, remineralizing large areas for fast growing tree plantations, thus reducing the CO₂ problem and providing our primary source of fuel.

The solution to our survival must be a program involving all organized labor, currently unorganized people, corporate ownership organizations, and governments from the local to national and international levels. This program must reduce the atmospheric CO₂ concentration to 290 ppm from 344 now by remineralization of the Earth where needed to allow regeneration of soils, by re-forestation and speedy transition into new energy source technologies. Striving for survival, we will work with all groups and individuals to transform the control and use of all available resources to regenerate the earth -- to maintain food supplies and forestation, to stabilize weather and to move to prevent increased glaciation.

Our call to you is to (1) reach citizen/political groups, (2) influence national and state legislation and U.N. parallel action (3) work with written, broadcast and video media, (4) develop and carry out economic plans for changes in investment, resource use, labor training and employment, and (5) in general move toward making all people aware of the planet's precarious condition.

Never has human society faced such a creative challenge -- to maintain our food supply, to replace many economic and social relationships, and to achieve a wholeness in awareness, analysis, organization and human concern. We are entering a new, a conscious, era of regeneration of the Earth. Our reason for being must be to transform the whole of our society to more appropriate relations and a balance with the Earth and its atmosphere. Will nature impose devastating effects upon us or will we respond to its challenge and assist and direct the course of its regeneration?

Alden Bryant, President	Douglas Fryday, Secretary
Fred Bernard Wood, Treasurer	Kathleen Clement, Administrator

Further information available. Contributions needed (tax deductible).

SPECIAL INTEREST GROUP

PHILOSOPHY/THEORY

REPORT NO. 7

SPRING-SUMMER 1982

PLANS FOR 1983 MEETING

We are behind schedule on developing plans for the May 1983 Meeting in Detroit. Our sig p/t president has been swamped with work in connection with his new computer store. Our executive secretary has been overloaded with problems related to the terminal illness of his wife, who became seriously ill in March and died in July. We missed the original deadlines for developing sessions and papers for May 1983. Since the due dates have been extended in the Second Announcement of the Detroit Meeting, we have a chance to complete some of the unfinished plans.

The theme of the meeting is "The Relationship Between Major World Problems and Systems Learning." We are following the plan outlined in Report No. 6 in vol. XIII, No. 1 of the BULLETIN. Table 1 at the end of this report represents one of the three kinds of charts proposed in this study. In due course of time we expect to get to the other two types described in Report No. 6. When a few more members subscribe at \$3.00 per person to the interim newsletter, we will resume mailing interim reports to members in between issues of the BULLETIN.

Following the general plans outlined in SIG P/T Report No. 6 we have updated Dr. John Platt's table of world problems (XDE018A) in Table 1 of this report. The problems shown in full capitals are ones we have revised or added. Table 1 is constructed in accordance with the scales developed by Dr. Platt. The vertical scale is the grade of the problem based upon the estimated crisis intensity. This is a product of the number of people affected times the degree of the affect. A word description of the grade of the problem is also used in the table. The horizontal scale is the estimated time to crisis. For more information on the problems in Dr. Platt's original table see reference XDE018A in Appendix B. The problems that we have revised or added to the table are discussed in the next paragraphs. We have found that people want more information than that available in Table 1 when they try to set their own priorities. The next thing they want is some measure of how many people are working on or how much money

is allocated to the different problems. Reference XDE018B has some estimates of how money is allocated to a number of the problems. The problems below with two asterisks in front of the title are ones our special interest group is attempting to deal with. One asterisk indicates a problem on our priority list for which we think many other people and groups are tackling.

* NUCLEAR OR RCBW ESCALATION Grade 1, 5-20 years.

The one crisis that must be ranked at the top in total danger and imminence is, of course the danger of large-scale or total annihilation by nuclear escalation or by radiological-chemical-biological-warfare (RCBW). The next question is how much effort is already going into this problem. The fact that large political demonstrations have occurred this year in Europe and the U.S.A. indicates that millions of people are thinking or reacting to this problem. Can the diffusion of general systems learning help these protesters be more effective through use of a general systems perspective? Can the establishment leaders through systems learning develop a more comprehensive and humanistic approach to the problems of nuclear warfare?

** CARBON DIOXIDE, GLACIATION, DEFORESTATION, FOOD SHORTAGE -- Grade 2, 5 - 20 years.

Physical disruption of civilization by loss of food supply from advancing ice age glaciation. It is generally recognized that the planet earth has a 100,000 year major weather cycle, in which there is a 90,000 year ice age period consisting of many sub-cycles of glaciation and a 10,000 year warm period. John Hamaker's analysis indicates that we are at the end of a 10,000 year warm cycle with an ice age imminent. The difficulty in checking Hamaker's analysis is that it requires correlation of material in about five different fields of science where there is not much inter-communication. If using the philosophy of a general systems approach to the problems can improve communication between the specialists in the various fields involved, some progress could be made in determining whether this is really an

SIG-P/T-7-p. 2

urgent problem. John Hamaker thinks the time to go critical is 10 years. Can a general systems approach help the experts in the different fields cooperate so that we can obtain a better estimate of the time to go critical?

Hamaker's analysis is now available in book form. See reference XDE017C for details. A compilation of events relevant to the Hamaker hypothesis has been prepared by Donald A. Weaver (XDE017E).

** COMPUTERIZED DESTRUCTION OF WESTERN CIVILIZATION -- Grade 3, 20 to 50 years.

Sociological disruption of civilization by misapplication of the use of computers as projected in an article by R. D. Parslow, Department of Computer Sciences, Brunel University, Uxbridge, Middlesex, England. Parslow points out that the present trends in the use of computers is generating a large class of unemployed with ethnic minorities having very high unemployment rates. He sees this rising unemployment leading to more crime and vandalism. He feels that our governments will move to assume totalitarian powers. This problem came to our attention through Prof. Parslow's papers at Association for Computing Machinery meetings. Parslow thinks there is not time enough to re-educate the working population. Can a general systems philosophy show the people how systems learning can give the citizens a sufficiently better grasp of the situation to arrive at a solution?

Will the widespread availability of microcomputers to the public help the public and responsible computer scientists change the trends observed by Parslow?

WOMEN'S RIGHTS -- Grade 4, 1 to 5 years.

Can women and other groups that are struggling for equal rights learn to use general systems concepts to improve their analysis of the social struggles they are involved in?

** NEED FOR GENERAL SYSTEMS LEARNING ON ALL LEVELS -- Grade 4, 5 to 20 years.

This problem interacts with many problems at higher grades in Table 1. Scientists may have to develop more facility for systems learning in order to cooperate in a useful way with their colleagues in other fields. To develop solutions having democratic support of the people it may be necessary for the public to learn more about systems analysis. Political leaders will have to understand more about systems

analysis to be able to make viable decisions on critical problems.

OCEAN FLOOR MINING UNDER UNITED NATIONS LAW OF THE SEA -- Grade 5, 1 to 5 years.

A United Nations commission has worked for ten years to develop an extension of international law dealing with mining rights to the floors of the oceans on our planet. The "Law of the Sea" is scheduled for ratification by U. N. members in December 1982. However the United States present policy is to not ratify the U. N. Law of the Sea. This impending conflict will put the U. S. A. in conflict with the United Nations in this area. The importance of this problem may well be not so much in the specific subject matter, but in the potential loss of a precedent setting opportunity for a test case of resolving problems by United Nations discussion. Ref.: Daniel D. Noslter, "Underwater Treaty: The Fascinating Story of How the Law of the Sea was Sunk," BARRON'S, July 26, 1982, p. 10-12.

APPENDIX A: ADDITIONS TO SGSR SIG P/T BIBLIOGRAPHY

Richard L. Gregory, Mind in Science: A History of Explanation in Psychology & Physics, Cambridge University Press (1981).

APPENDIX B: ADDITIONS TO SGSR SIG P/T WORKING PAPER DEPOSITORY

XDE004A Louise Klein-Hilderbrand see revised listings in XDE004B-XDE004F on TELEOLOGIC -- a new supplementary language for the humanistic sciences.

XDE004B Issue One of Nov. 18, 1978, 37 pages.
XDE004C Issue Two, 22 pages.

XDE004D Issue Three 92 pages, September 1979.
XDE004E Issue Four, 1979-1980, 67 pages.

XDE004F Issue Five, Summer 1981, 36 pages.

XDE012L Charles Francois, Newsletter No. 1 - April 1982, "Some Commentaries on the Working Program of the Special Interest Group - Philosophy and Theory of the S.G.S.R.", 7 pages. (Plans are being developed to distribute this item by mail to U.S. SIG P/T members.)
CONTENTS:

1. The "WARFIELD Program"
2. The third selected by the "Special Interest Group - Philosophy and Theory" world problem. Sociological disruption of civilization by misapplication of the use of computers.
3. Different viewpoints on General Systems Theory.

4. Ethical systems and human values.

XDE013C Newsletter of the American Society for Cybernetics, No. 17, Sept. 12, 1982, and supplement on ASC Annual Conference on "Cybernetics and Education," Columbus, Ohio, October 18-21, 1982. Includes a one page abstract of the Symposium held at Cerisy la Salle, France, June 11-17, 1980, on "Autonomy, from Physics to Political Science," pages.

XDE017C John Hamaker and Donald A. Weaver, "The Survival of Civilization," 218 pages, paperback available for \$8.00 postage paid from Hamaker-Weaver Publishers, P.O. Box 1961, Burlingame, California 94010; or P.O. Box 457, Pottersville, Michigan 48876. (April 1982) Contents:
 Ch.1: Our 100 Percent Junk Food Supply Is Destroying Us
 Ch.2: Food, Energy and Survival
 Ch.3: Worldwide Starvation by 1990
 Ch.4: The Role of CO₂ in the Process of Glaciation
 Ch.5: The Subsoil Drainage System and our Vanishing Food Supply
 Ch.6: The Glacial Process and the End of the Food Supply
 Ch.7: Taxes, Freedom and the Constitution
 Postscript
 Bibliography

XDE017D Earth Regeneration Society, 470 Vassar Ave., Berkeley, California, 94708, "Urgent Announcement," July 15, 1982, 2 pages. A summary of Hamaker's theory on carbon dioxide in atmosphere, glaciation, and food supply.

XDE017E Donald A. Weaver, Supplementary Perspectives to THE SURVIVAL OF CIVILIZATION 37 pages, available for \$2.00 from Hamaker-Weaver Publishers, P.O. Box 1961, Burlingame, CA 94010.

XDE018A John Platt, "What We Must Do?" reprint of 1969 paper on problems and crises by estimated time and intensity (7 pages).

XDE018B Richard Cellarius and John Platt, "Councils of Urgent Studies," SCIENCE, vol. 177, pp. 670-676, 25 AUG 1972. Contents:
 Need for Councils of Urgent Studies
 Mapping the Fronts
 State of the Art and Plan of Attack
 Catalog of Resources
 Legitimization
 Marketing
 University Councils of Urgent studies
 National Councils of Urgent Studies
 International Councils of Urgent Studies
 Funding
 Relation to Present Institutions
 Conclusion
 Appendix (list of 25 project areas)

XDE019B Society for General Systems Research, "1983 Call for Papers -- Second Announcement," deadlines have been changed, 2 pages.

XDE020A R. D. Parslow, "Computerized Destruction of Western Civilization," 6 pages. Reprinted from 1980 ACM Annual Conference Proceedings in COMPUTERS & SOCIETY (a publication of the ACM Special Interest Group on Computers & Society), Vol. 11, No. 2, Spring 1981, pp. 16-21.

XDE021A David M. Scienceman and Florence Caldwell, "A Policy for a Scientific Party," 36 pages. Abstract: Because our world is already dominated by scientific achievements and problems, an attempt has been made to prepare a policy for a Scientific Party, at both national and international levels. Energy is proposed as the primary entity for determining public policies, in contrast to money. At the international level, a World Parliament is forecast, comprising a House of Nation States and a House of World Representatives, and an International Scientific Party and an International People's Party. In order to satisfy religious emotions, at least partially, somewhere near Jerusalem is proposed as the best location for World Parliament.

XDE021B David Scienceman, University of Florida, Department of Environmental Engineering Sciences, A.P. Black Hall, Gainesville, Florida 32611. "David Scienceman's Newsletter," Experimental Number 1, July 1, 1982, 4 pages
 Contents:
 Energy Systems Analysis Newsletter.
 Energy systems Analysis of Australia.
 The Emcaorie and the Odum.
 A Policy For A Scientific Party.

Copies of the above depository papers can be obtained from the executive secretary for 7 cents per page, unless otherwise priced.

APPENDIX C: OFFICERS OF SGSR SIG P/T

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California 95150.

This report prepared September 20, 1982, by Fred Bernard Wood, Executive Secretary SGSR SIG P/T

TABLE I-A: MAJOR WORLD PROBLEMS (Grades 1 - 3).

Classification of problems and crises by estimated time and intensity.

		Estimated crisis intensity: Numerical & Descriptive Grade (number affected times degree of effect)		Estimated time to crisis	
		Grade (number affected times degree of effect)		1 to 5 years.... 5 to 20 years... 20 to 50 years.	
1.	10	Total annihilation	Nuclear or RCBW escalation	NUCLEAR OR RCBW ESCALATION	*(solved or dead)
2.	10	Great destruction or change (physical, biological, or political)		Famines Ecological balance Development failures Local wars Rich-poor gap CARBON DIOXIDE, GLACIATION, DEFORESTATION, FOOD SHORTAGE	Economic structure and political theory Population and ecological balance Patterns of living Universal education Communications Integration Management of world Integrative philosophy
3.	10	Widespread almost unbearable tension	Administrative management Need for participation Group & racial conflict Poverty-rising expectations Environmental degradation	Poverty Pollution Racial wars Political rigidity Strong dictatorships	COMPUTERIZED DESTRUCTION OF WESTERN CIVILIZATION

TABLE 1-8: MAJOR WORLD PROBLEMS (Grades 4-8).

Classification of problems and crises by estimated time and intensity.

Estimated crisis intensity:		Estimated time to crisis	
Grade	Numerical & Descriptive		times
	(number affected)	(word description)	
	times	degree of effect)	1 to 5 years.... 5 to 20 years... 20 to 50 years.
4.	10	Large scale distress	Transportation Diseases Loss of old cultures WOMEN'S RIGHTS Housing Education Independence of big powers Communications gap NEED FOR GENERAL SYSTEMS LEARNING AT ALL LEVELS
5.	10	Tension producing responsive change	Regional organization Water supplies OCEAN FLOOR MINING UNDER UNITED NATIONS LAW OF THE SEA
6.		Other problems-- important, but adequately researched	Technical development design Intelligent monetary design
7.		Exaggerated dangers and hopes	Eugenics Melting of ice caps
8.		Noncrisis problems being "overstudied"	Man in space Most basic science

Table adapted from John Platt, "What We Must Do," SCIENCE, 28 Nov 1969, pp. 1115-1121.

SPECIAL INTEREST GROUP

PHILOSOPHY/THEORY

REPORT NO. 8

SPRING 1983

STATUS OF QUESTIONS PREVIOUSLY LISTED

QUESTION (a): How can we increase the frequency of communication between members?

We first tried mailing a separate SIG P/T Newsletter to members, and then tried including the SIG P/T material in the three issues a year of the BULLETIN. We proposed continuing the separate newsletter in addition to the material in the BULLETIN, to those who paid for the postage. Not enough people paid to support the separate newsletter. Then the BULLETIN was cut to two issues a year, so our two reports in the BULLETIN constitute our present communication system.

Dr. Charles Francois in Argentina and Dr. David Scienceman in Australia both came up with the idea of individuals generating their own newsletters to be mailed to those on the mailing list, put in the depository, and/or printed in the BULLETIN. We wish to encourage people to generate their own newsletters.

QUESTION (b): How can we improve communication between those who have computers and those who use pencil and paper?

We tried using the EIES Computer-Conferencing system as a base for generating SIG P/T reports. There were insufficient number of members with access to computer terminals to justify continuing the computer conferencing arrangements. I now use my Apple II Computer as a word processor to prepare camera ready pages for the BULLETIN.

We cooperated locally with the Santa Cruz Chapter of Planetary Citizens on an experimental use of computer-communications. Ms. Jacquy Griffith of Planetary Citizens made her Apple II computer available for about 20 hours a day as a computer bulletin board. The CommuniTree Group provided the software so that anyone with a home computer with telephone modem could dial up the computer and read the questions and comments already in the system, and then add their comments. For people who didn't have computers time was scheduled in Santa Cruz on certain days of the week when anyone could go to designated

places and use computer terminals to make their inquiries and comments. People actually responded and used the computer bulletin board system, particularly in preparation for conference on Global Issues at Cabrillo College, Aptos, California.

The Computer Social Impact Research Institute is considering a plan to provide such a computer bulletin board system that could be dialed-up by U.S.A. members of SIG P/T during the night low rate period.

QUESTION (c): How do we relate our work to the 1979 General Systems Task Force Report?

We now have generated enough material in pursuit of the question on quasi-completeness to come back to this question. I suggest that members re-read the material by Archie Bahm, T. Downing Bowler, and Mario Bunge in section III.3.2 of Systems Research Movement, GENERAL SYSTEMS BULLETIN, Special Issue - Summer 1979, v. IX, n. 3, pp. 75-80. Then I would appreciate receiving comments for our discussions on how clarifying the philosophical questions can help focus our attention on the solving of major world problems.

QUESTION (d): Can we develop a quasi-completeness test?

We have been approaching the concept of a quasi-completeness test from the top-down. Our updating of Platt's table of major world problems in our last report was on the first level to reduce the chance that some major problem might sneak upon our civilization without advance warning. The problem listed below from an analysis of the updated Platt table is a potential "sleeper" in that the knowledge in the separate related branches of science don't indicate the potential severity of the problem of the high level of CO₂ in the atmosphere causing an early arrival of the next ice age. When engineers like Hamaker try a systems approach crossing all boundaries of special fields necessary to see the whole problem, the possibility of a 90,000 year ice age starting soon has a much higher probability. Therefore the problem of general systems education becomes more important.

** CARBON DIOXIDE, GLACIATION, DEFORESTATION, FOOD SHORTAGE -- Grade 2, 5 - 20 years.

Physical disruption of civilization by loss of food supply from advancing ice age glaciation. It is generally recognized that the planet earth has a 100,000 year major weather cycle, in which there is a 90,000 year ice age period consisting of many sub-cycles of glaciation and a 10,000 year warm period. John Hamaker's analysis indicates that we are at the end of a 10,000 year warm cycle with an ice age imminent. The difficulty in checking Hamaker's analysis is that it requires correlation of material in about five different fields of science where there is not much inter-communication. If using the philosophy of a general systems approach to the problems can improve communication between the specialists in the various fields involved, some progress could be made in determining whether this is really an urgent problem. John Hamaker thinks the time to go critical is 10 years. Can a general systems approach help the experts in the different fields cooperate so that we can obtain a better estimate of the time to go critical?

Hamaker's analysis is now available in book form. A compilation of events relevant to the Hamaker hypothesis has been prepared by Donald A. Weaver (XDE017E).

** NEED FOR GENERAL SYSTEMS LEARNING ON ALL LEVELS -- Grade 4, 5 to 20 years.

This problem interacts with many problems at higher grades in the table in Report No. 7. Scientists may have to develop more facility for systems learning in order to cooperate in a useful way with their colleagues in other fields. To develop solutions having democratic support of the people it may be necessary for the public to learn more about systems analysis. Political leaders will have to understand more about system analysis to be able to make viable decisions on critical problems.

SECOND LEVEL SEARCH FOR QUASI-COMPLETENESS

For the search for quasi-completeness on the second level, we examine a particular problem and list the hypotheses as rows and set up columns for "humanities," "computer models," and "empirical science" with science broken up into sub-columns for the particular fields of science relevant to the problems being studied. Such a table is shown as Table 1 in this report.

In Table 1 the symbol in the squares indicate the state of our review of the material. For Hamaker's analysis of the immanence of the next glacial age, we have an asterisk(*) in the computer model column, because there is insufficient data for some of the links in the simulation model. For most of the special fields of science involved Hamaker's analysis rates "A" for showing that most of the significant literature in the appropriate fields has been considered in the analysis.

The analysis by Mitchell only refers to the narrow field of climatology.

Lovins analysis and proposal for action omits many relevant fields on the assumption that his plan will reduce the CO₂ level in time so that we don't have to understand the effect of CO₂ on the climate. Examining the material studied by Hamaker indicates that Lovins' time table for reduction of CO₂ levels may be too late to stop the next glacial age from coming early.

Vogt and Sultan have an underlying assumption on the relationship between energy and information that is at odds with accepted science and engineering. They also assume that our Sun goes through a series of nova states that we haven't found confirmed in the astronomy literature. They rely in large part upon interpretation of the mythology of many early peoples on our planet. Also their timing of events doesn't fit the accepted science data. On this basis it is difficult to accept their theory that glacial ages are started by the sun going into a nova state which causes a major trauma to the planet earth, reversing the earth's rotation and magnetic field, and evaporating the oceans on one side of the earth and redepositing the water on earth as snow to form glaciers.

The Milankovitch theory is that glacial ages are caused by changes in the earth's orbit around the sun. This theory holds that the earth's orbit changes from almost a circle to elliptical in a period of from 90,000 to 100,000 years. The supporters of the Milankovitch theory have computer models of the earth's orbit that are consistent. We need more research on whether this orbital changing is sufficient or is just one of several factors needed to bring on an ice age.

QUESTION (f): How does ethics relate to general systems research?

I suggest that people comment on the proposal by Archie Bahm (XDE003A in depository, 1 page) in which he proposes

recognition of ethics as a science.

APPENDIX A: ADDITIONS TO
SGSR SIG P/T BIBLIOGRAPHY

HAMAKER: John Hamaker and Donald A. Weaver, "The Survival of Civilization," 218 pages, paperback available for \$8.00 postage paid from Hamaker-Weaver Publishers, P.O. Box 1961, Burlingame, California 94010; or P.O. Box 457, Pottersville, Michigan 48876. (April 1982) Contents:
Ch.1: Our 100 Percent Junk Food Supply Is Destroying Us

Ch.2: Food, Energy and Survival
Ch.3: Worldwide Starvation by 1990
Ch.4: The Role of CO/2 in the Process of Glaciation
Ch.5: The Subsoil Drainage System and our Vanishing Food Supply
Ch.6: The Glacial Process and the End of the Food Supply
Ch.7: Taxes, Freedom and the Constitution
Postscript
Bibliography

Table 1 - Testing of Systems Hypotheses relating to the Carbon Dioxide Problem and Glaciation.

	HUMANITIES	COMPUTER MODELS	Agriculture & Soils	Forestry	Glaciology	Energy	Climate & Atmos CO/2	Economics & Planning
1								
2	Hypotheses	Abstract Philosophical						
3	GLOBAL SYSTEMS							
4	Demineralization of Soil -> deforestation -> high atmos CO/2 -> wind changes -> Glacial Age (HAMAKER)	* (more data needed for simulation)	A	A	A	B	A	B
5	Carbon dioxide & volcanic dust cancel out in greenhouse eff. (MITCHELL)						A	
6	Skip Climatology and Use Renewable energy & conservation to reduce atmos CO/2. (LOVINS)					A	B	B
7	Sun Nova --> Magnetic reversal --> glaciation (VOGT/SULTAN)					B		
8	Earth Orbital changes --> glaciation (MILANKOVITCH)		BB				B	

Key to symbols:

A, B, C is rating for degree to which proponents of theory show evidence of having consulted the scientific literature of the respective fields.
AA, BB, CC is rating given by reviewers in the specified field, if available.

LOVINS: Amory B. Lovins, L. Hunter Lovins, Florentin Krause, & Wilfrid Bach. Least-Cost Energy - Solving the CO/2 Problem. Andover, Mass: Brick House Publishing Co.(1982).

MITCHELL: Chart of CO/2 warming effect and (volcanic ash) particle cooling effect produced by Murray Mitchell in Forecasts, Famines, and Freezes by John Gribbin. New York: Walker and Co. (1976), p. 89.

MILANKOVITCH: (a) Description of Milankovitch theory regarding earth's orbit in Forecasts, Famines, and Freezes by John Gribbin, pp. 94-97.

(b) "Orbital Variation -- Ice Age Link Strengthened," Report by Richard A. Kerr on the Conference: Milankovitch and Climate: Understanding the Respose to Orbital Forcing, Science, 219 (21 Jan 83), pp. 272-274.

APPENDIX B: ADDITIONS AND REISSUES IN
SGSR
SIG P/T WORKING PAPER DEPOSITORY

XDE003A Archie J. Bahm, proposal "I propose recognition of ethics as a science," (1 page).

XDE003C Archie J. Bahm, "Five Types of Systems Philosophy," (13 pages)

XDE012M Charles Francois, "Learning, knowledge and wisdom for a new Age. June 28, 1982. 11 pages.

1. The problem we are facing
2. Future unbounded
3. Our future problems
4. Values for the future
5. The roots and aims of education
6. Tentative orientatons
 - 6.1 Concepts
 - 6.2 Goals
 - 6.3 Ways
 - 6.4 Possible means and methods
7. Coda: Responsibility on higher level

XDE017E Donald A. Weaver, Supplementary Perspectives to THE SURVIVAL OF CIVILIZATION 37 pages, available for \$2.00 from Hamaker-Weaver Publishers, P.O. Box 1961, Burlingame, CA 94010.

XDE021C David Scienceman, University of Florida, Gainesville, Florida 32611 U.S.A. "David Scienceman's Newsletter," Number 2, October 1, 1982, 10 pages.

XDE021D David Scienceman, University of Florida, Gainesville, Florida 32611 U.S.A. "David Scienceman's Newsletter," Number 3, January 1, 1983, 10 pages. (Note: David Scienceman has returned to: c/o University and Sschools Club, 70 Phillips Street, Sydney, 2000, Australia)

Copies of the above depository papers can be obtained from the executive secretary for 7 cents per page, unless otherwise priced.

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This report prepared February 20, 1983, by Fred Bernard Wood, Executive Secretary SGSR SIG P/T

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The diagrams entitled "Ecological Diagram of Current Conditions" and "Ecological Diagram of the Solar Age" have been expanded from a diagram developed by Dr. Charles Francois of Buenos Aires, Argentina. They explain John Hamaker's thesis about the process by which the rising percentage of atmospheric carbon dioxide leads to extreme weather changes and accelerates the coming of the next glacial period on our planet. (See John D. Hamaker and Donald A. Weaver, The Survival of Civilization, Hamaker & Weaver Publishers, Box 1961, Burlingame, CA 94010.)

The "Ecological Diagram of Current Conditions" is described first.

The contributing factors in blocks are shown influencing the three major phenomena in heavy circles. Each factor is numbered. PLUMMETING FOREST AND PLANT LIFE VITALITY (3), SKYROCKETING ATMOSPHERIC CO₂ (2), and ACCELERATING ONSET OF GLACIAL PERIOD (1) are shown near the center. An arrow with a plus (+) sign indicates the source factor for that arrow increases the factor being pointed to. A minus sign (-) indicates the source factor decreases the destination factor. Double pointed arrows indicate bidirectional feedback.

The SOIL DEMINERALIZATION PROCESS (9) causes the LOSS OF SOIL ORGANISMS (8) which leads to a multiple feedback effect whereby FOREST & PLANT LIFE becomes vulnerable to INSECTS & DISEASE (10) and FIRE (15). Plant life no longer is able to hold carbon in organic molecules, and huge quantities of carbon dioxide are put into the atmosphere. CONVENTIONAL CROP CULTIVATION (16), which relies on CHEMICAL FERTILIZERS (13) and BIOCIDES (11), promotes the SOIL DEMINERALIZATION PROCESS (9), LOSS OF SOIL ORGANISMS (8), TOPSOIL EROSION (14), and impairs the FRESHWATER LIFE-SUPPORT CAPACITY (4).

We are vastly ACCELERATING THE ONSET OF THE GLACIAL PERIOD (1) with FOSSIL FUEL BURNING (20), (which creates ACID RAIN (5)), TIMBER CUTTING (7) and SLASH & BURN AGRICULTURE (6). These are causing an exponential increase in atmospheric CO₂.

The SKYROCKETING ATMOSPHERIC CO₂ (2) traps infrared energy in the troposphere, especially at equatorial and lower latitudes, so that ATMOSPHERIC HEATING (21) occurs. This leads to INCREASED EVAPORATION OF TROPICAL WATER (22), which produces more clouds. The DIFFERENTIAL GREENHOUSE EFFECT (26) between higher and lower latitude air accelerates the movement of CLOUDS TO POLES (23) where a BUILDUP OF POLAR ICE & SNOW (24) occurs. The increased snow increases the ALBEDO (25) which increases the Earth's reflectivity. (This process will result in a return to a GLACIAL PERIOD (1) and GLACIERS will cover a large part of the Earth for approximately 90,000 years.

CO₂ that is dissolved in the oceans starts the growth of MARINE ORGANISMS (30). RISING OCEAN TEMP. (31) results in DECREASING DISSOLVED CO₂ (29).

The second source of energy in addition to the sun is the Earth's naturally occurring nuclear reactors which Hamaker calls CONTINENTAL HEATERS (35). These power the Earth's tectonic system. The TECTONIC PRESSURE AND VOLUME (34) cause RISING OCEAN TEMPERATURE (31) from feeding ocean floor ridges and fractures. Movement of tectonic plates results in VOLCANIC ACTIVITY (37). Volcanoes add ash,

CO₂, and sulfur dioxide to the atmosphere. The volcanic ash suspended in the air reduces the atmosphere's absorption of energy from the sun contributing to the BUILDUP OF POLAR ICE & SNOW (24). Heavy snow and ice cover at the poles presses on tectonic plates and changes the pressure and volume with which molten silicates flow through a system of channels in the semi-solid mantle. Sea levels fluctuate according to the amount of water frozen into glaciers, and the amount of rise that occurs in the ocean floors themselves in response to variable pressure of hydraulic fluid below.

Explanation of the "Ecological Diagram of the Solar Age" follows:

A GLOBAL REMINERALIZATION PROGRAM (65) will contribute to IMPROVED TOPSOIL CONDITION (66), make possible the rapid growth of trees on WOOD PLANTATIONS (50), and sustainable POLYCULTURAL FARMING APPROACHES (56), and increase and improve FOREST & PLANT LIFE (57) & ANIMAL ORGANISMS (59). RECYCLING OF ASHES & ORGANIC MATTER (53) will help support WOOD PLANTATIONS (50) AND IMPROVED TOPSOIL CONDITION (66). REPLANTING (54) trees is necessary to fix carbon into organic form, resulting in a NET DECREASE OF ATMOSPHERIC CO₂ (58).

WOOD PLANTATIONS (50) for ALCOHOL PRODUCTION BIOMASS (51) and BIOMASS FUEL (52) and coupled with ALTERNATIVE ENERGY PRODUCTION (55) will lead to a net decrease in ATMOSPHERIC CO₂ (58). This results in REDUCING WEIGHT OF GLACIERS (61) which in turn reduces the tectonic pressures, lessens volcanic activity and further reduces ATMOSPHERIC CO₂ (58).

CONTROLLED RELEASE OF ICEBERGS TO HALF COOL OCEAN (63) would cause a NET INCREASE IN DISSOLVED OCEAN CO₂ (60). The REMINERALIZATION OF INLAND AND COASTAL WATERS (62) will increase marine life's fixing of CO₂ and increase CARBONATE DEPOSITS (64).

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