

SOCIO-ENGINEERING PROBLEMS REPORT No. 82-01

Major World Problems Classified by Grade and  
Time to Go Critical

by

Fred Bernard Wood, Ph.D.

Abstract

The philosophy of General Systems Theory and Cybernetics is applied to the analysis and classification of the major world problems. The format developed by Dr. John Platt is used to arrange the major world problems in which the rows of the table correspond to the grade of the problem and the columns correspond to the time to go critical. Grade 1 is defined as having an intensity of ten billion or higher, where the intensity is calculated by multiplying the number of people affected by the problem by the degree of the affect of the problem. The degree of the problem is in range of 0 to 1. The problems are then further weighted qualitatively by guesses as to the amount of work being done on the problems. This analysis for the SGSR Special Interest Group on Philosophy/Theory gives the major top problems as follows:

- \* Nuclear or RCBW Escalation.
- \* Carbon Dioxide, Glaciation, Deforestation, Food Shortage.
- \* Computerized Destruction of Western Civilization.
  
- \* Need for better protection of political and economic rights of Women.
- \* Need for General Systems Learning on All Levels.
- \* Ocean Floor Mining under United Nations Law of the Sea.

The table is available on a computer diskette for displaying on an Apple IIe Computer (with 80-column line display) under Apple Writer word processor.

Word processing service for this report using the Apple Writer text editing system on an Apple II Computer with an AJ841 printer was contributed to SIG P/T by the Computer Social Impact Research Institute, P.O. Box 5583, San Jose,

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.

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Grade	Estimated crisis intensity: Numerical & Descriptive (number (word affected description) times degree of effect)		Estimated time to crisis		
			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
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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
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TABLE 1-B: MAJOR WORLD PROBLEMS (Grades 4-8 ).

Classification of problems and crises by estimated time and intensity.

Grade		Numerical & Descriptive (number (word affected description) times degree of effect)		Estimated crisis in- tensity: Estimated time to crisis	
				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 organ- ization Water supplies OCEAN FLOOR MINING UNDER UNITED NA- TIONS LAW OF THE SEA		
6.		Other problems-- important, but adequately researched	Technical dev- ment design Intelligent monetary de- sign		
7.		Exaggerated dangers and hopes		Eugenics Melting of ice caps	
8.		Noncrisis pro- blems 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. 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

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 I. 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. Nositer, "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 CO<sub>2</sub> 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 Emcalorie 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

T. Downing Bowler, President, SGSR SIG P/T, 25 Russell St., Plymouth, NH 03264  
 Tel: 603/536-3383 (home), 603/536-4163 (office)

Charles Francois, First Vice-President SGSR SIG P/T, Belgian Embassy, Defensa 113 - 8<sup>th</sup> P., 1065 Buenos Aires, Argentina

E. A. Lowe, Second Vice-President, SGSR SIG P/T, Division of Economic Studies, The University, Sheffield S10 2TN, England

Fred Bernard Wood, Executive Secretary, SGSR SIG PT, 2346 Lansford Ave., San Jose, CA 95125 tel: 408/269-9327