

Part Two: A Review of Developments Since the Publication of  
The Social Responsibility Paper(1963)

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P.O. Box 85, Campbell  
California 95008, U.S.A.  
July 30, 1963

Mr. Ch. Heranger  
6, Rue Laurent-Pichat  
PARIS (16<sup>e</sup>), France

Dear Mr. Heranger:

In my letter of July 24th, I left some questions from your letter of July 18th unanswered. Regarding your question as to whether my plan has been used, I have the following to report:

(1) There is some concern on the part of engineering managers that the use of my plan would distract engineers from completing their technical work, as fast as possible. I disagree with this argument. From experience I had at the M.I.T. Radiation Laboratory during World War II developing radar, I feel that faster progress can be made on engineering projects where the engineers discuss the social consequences or intended applications of their work.

(2) There is also concern that the discussion of these questions with consultants outside the industrial research laboratory might lead to premature release of information on new products thus jeopardizing patent rights or proprietary information. I foresaw this problem in my 1959 WJCC paper, when I stated, "In some cases an engineering research organization, in order to protect its proprietary interests, may prefer to hire social science consultants instead of releasing technological data to outside institutions."

(3) The above considerations reduce the chance that I would know of particular applications of my concepts. I have received numerous requests for reprints and also for permission to reproduce the 1959 WJCC paper. However I have received no direct report of the explicit use of my ideas. In two cases I know that corporations making devices in the automation field have made grants of money to research foundations for independent studies similar to my figure 2 (checking chart) with the change that the engineers designing the equipment are not directly consulted. Higher level management people determine what the 'new knowledge and devices' of stage 2 are, and request the separate research foundation to take care of stages 3 and 4. This procedure is a step forward, in that social consequences of new technology are investigated, where formerly practically no consideration was given to such problems. The disadvantage of this procedure is that the engineer is isolated from proceeding to take appropriate action in step 5. This limits the professional status of the engineer. To some extent it is a way to keep the engineer at the level of a technician, not having professional responsibility.

(4) The discussion of the social consequences of engineering work by engineers is inhibited to some extent by the fear of industrial management that what an individual engineer says will be interpreted by the public, government officials, and competitors as policies of the corporation for which the engineer works instead of being interpreted as the statement of an individual engineer.

In my original paper, I intended to handle this problem by the statement, "At this stage, they represent my own personal views and are not to be construed as representing a policy of my employer." At the oral presentation of the paper at the 1959 WJCC, I augmented this statement by projecting a slide on the screen with a cartoon like that of Figure 1 in Socio-Engineering Problems No. 20-B, copy enclosed.

As to your second question, i.e., whether my ideas have undergone any changes, I have the following to report:

(1) My original paper did not show how the "checking chart" was developed. The understanding of how it was developed is helpful in understanding changes in direction since then. The checking chart superimposed upon a classification system for the sciences and the humanities in Fig. 2 of SEP No. 20-B will give you clues as to the derivation of the checking chart. If you examine the position of the different boxes in the checking chart, you will find that the different boxes fit approximately the correct coordinates in the levels of phenomena versus classes of activity columns. My first draft of the 1959 WJCC paper had these coordinates in the figure, but reviewers advised me to simplify the material for the engineering audience. Perhaps you can recognize the influence of the founder of Sociology, Auguste Comte. Sociologists advised me to forget about the earlier sociologists such as August Comte, Herbert Spencer, and Lester Ward, and urged me to pay more attention to modern sociologists who are supposed to be more scientific. However I have found some of the ideas of the earlier sociologists are very useful in developing a perspective of the problems of our civilization.

(2) Since publishing the 1959 WJCC paper, I have slowly continued further studies as a hobby outside of my regular engineering work. My later studies have been directed toward determining whether we have the necessary science advisors and the means of communication to carry out the four levels of action, 'inform/discuss/propose/campaign,' as they are required.

(a) I conducted some discussions with social scientists, but found that we didn't have a large enough common vocabulary. Also I found that social scientists were more interested in small, less-controversial problems.

(b) I then considered how well are we prepared to communicate with educated community leaders in the event that some engineer has to carry some problem on to the campaign stage in step 5. My technique was to obtain a list of potentially interested local community leaders from the American Friends Service Committee. SEP No. 28-A is a reprint of the notice I sent out to about sixty-five people. An average of ten people came to the six evening discussion meetings. These discussion meetings were

very valuable. I learned that some concepts from mathematics and physical sciences are difficult for even college graduates outside of the sciences. I also learned that some concepts from Cybernetics and Information Theory have potential value for use in explaining many complicated processes to the layman.

(c) Then I found that the Society for General Systems Research was developing some systems concepts which were improving the communication between social and physical scientists. A copy of Bulletin of the Bay Area Systems Group, No. 2, March 1962, is enclosed. I have been presenting my ideas to General Systems groups for discussion.

(d) Groups like the Society for General Systems Research are performing a useful service, but are not growing as fast as the problems of automation are growing more serious. A social psychologist on a grant from the Ford Foundation, Dr. Donald M. Michael, while at the Center for the Study of Democratic Institutions, made a study of the problems of automation during the period 1960-1961. His report was published in January 1962 as "Cybernation: The Silent Conquest." Dr. Michael said in his report (page 44):

"In twenty years, other things being equal..  
.....the research realm of the scientists,  
the problems of government, and the interplay  
between them will be beyond the ken even of  
our college graduates.....There will be a  
small, almost separate, society of people in  
rapport with the advanced computers. These  
cyberneticians will have established a  
relationship with their machines that cannot  
be shared with the average man any more than  
the average man today can understand the problems  
of molecular biology, nuclear physics, or neuro-  
psychiatry. Indeed many scholars will not have  
the capacity to share their knowledge of feeling  
about this new man-machine relationship....."

I have given considerable thought to what must be done to prevent Dr. Michael's predictions from coming true.

(e) In October 1962 I submitted a research proposal to the National Institutes of Health of the U.S. Department of Health, Education and Welfare. This proposal on a research project to investigate the value of potential analogies of Cybernetics and Information Theory in solving the problems of our civilization. I shall not take time to go into details at this time. The National Institutes of Health did not take favorable action on the proposal, but another agency in Washington, D.C., the Office of Science and Technology is now reviewing the proposal.

(3) From the above developments, you can see that I am basically following the same process as proposed in my 1959 WJCC paper. The variations in my research come from looking for defects in the procedure and alternate ways to get around them. The general direction of these variations can be summarized by the following two points:

- (a) I am attempting to deal with more general problems such as automation in general, instead of specific devices such as computer-data communication systems. The intent of this modification is to reduce the possible conflict with security problems on specific weapons development and conflict with the need to keep proprietary information confidential on commercial equipment development. Of course I still recommend that individual engineers and research and development laboratories make such studies along the lines of my 1959 paper.
- (b) I am directing considerable attention to the limitation on carrying out the four levels of action. The principal obstacles are the different vocabularies of different fields of science, and the lack of something in the social sciences equivalent to the planetarium of the astronomer. After viewing a show at a planetarium, the educated layman acquires a reasonable confidence in the competence and basic understanding of the work of the astronomer, even he does not comprehend the mathematics used by the astronomer. We need something equivalent to tell the layman what the social scientist and economist are doing---what Dr. Lasswell of Yale University calls a "social planetarium."

The Society for Social Responsibility in Science has reprinted my 1959 WJCC paper in their pamphlet series. If you are interested in what else they have published, their present publication chairman is:

Mr. Alfred Schroeder  
1545 Winding Road  
Southampton, Pennsylvania, U.S.A.

In February 1961 the Data Processing Digest published a report on the technical feasibility of an automatic credit system plus a summary and review of my 1959 WJCC paper. Data Processing Digest is published by:

Canning, Sisson and Associates, Inc.  
1140 South Robertson Blvd.  
Los Angeles 35, California, U.S.A.

Now to return to your plan to prepare a summary of concepts of the social responsibility of engineers and scientists for the bulletin of the C.N.O.F. You have my permission to use any of the material in SEP No. 20-B, if you think that it would help bring the ideas of the original paper up to date. I can supply you with

larger size copies of the figures that would be easier to type over with the French translations of the labels.

Please let me know if I can be of further assistance in supplying more information for your use in preparing the summary for the C.N.O.F. bulletin. If there is a limit to the number of pages for the summary of my article that makes it difficult to condense the material, please let me know, so I can assist in working out the most useful condensation.

I am pleased that my ideas have been of interest to you.

Sincerely yours,

*Frederick B. Wood*  
Frederick B. Wood

enc.: SEP No. 20-B  
59 WJCC(27-A)  
SEP No. 28-A  
BASG 2, Mar 62

Part Three: Further Developments Relative to the Social  
Responsibility of Engineers(L 1966)

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Engineering Office)  
Philosophy Project) See attachment.  
mont.

Residence:

2346 Lansford Ave.  
San Jose, Calif. 95125

May 31, 1966

Mr. Alfred Schroeder  
1945 Winding Road  
Southampton, Pennsylvania

Dear Mr. Schroeder:

I forget whether I ever sent you a copy of the French translation of SRSB Pamphlet No. 6. I enclose a copy for you files.

How is the supply of Pamphlet No. 6? A few years ago I remember the supply was down to about 50 copies. If you can spare ten copies, please send me ten, and I will reimburse you for them.

During the last few years I have had a number of arguments with IBM management, legal department, and public relations department over my participation in meetings, speaking on, and publishing papers on the social responsibility of engineers. Also the Federal Income Tax people have investigated my travel expense deductions for attending scientific society meetings where I gave papers bearing on sociological problems. At present I have received a ruling in my favor on my 1964 Federal Income Tax deductions for travel to scientific meetings and publication expenses.

The three addresses I am using have evolved, first from a separation between my work for IBM and my outside activities to avoid identification with IBM for non-IBM sponsored activities and publications. Second a separation further developed between philosophical studies examining certain problems and proposals as to what should be done about problems, on the basis that the philosophical studies could qualify as scholarly or educational research, while the advocacy of solutions would not be tax-deductible by reason of being political activity.

One IBM Divisional General Manager, now a Vice-President, has warned me that he has been concerned that my activities might interest other IBM engineers in the social consequences of their work. He felt that it is improper for engineers to speak on the social consequences of their work. He said that investigation of the social impact of technology should be left to qualified specialists in the social sciences. Others in IBM imply that the financing of research at Harvard on the impact of automation fulfills the obligation of the computer industry to do something about the social consequences of computer technology.

As a result of further pressures, I have been experimenting with writing under a pseudonym. I enclose a copy of a short letter to the editor I wrote under the pseudonym "Joaquin E. Murrieta."



I also enclose a copy of a paper I recently gave at the American Humanist Association meeting at Asilomar, California.

I am sending the enclosed material to you for information only. Please do not consider it as submitted for publication. Also I request that no action, such as writing to IBV, be undertaken. The hostility to engineers and scientists showing an interest in the social consequences of their work, with the exception of spectacularly new things such as atomic energy, come from a much broader problem than that of the computer industry. There is really a crisis in the application of social science compatible with democracy that is disturbing our social system. Thomas S. Kuhn's book The Structure of Scientific Revolutions (Univ. Chicago Press, 1962) describes the corresponding processes in the physical sciences.

In Kuhn's terminology, I consider Robert B. Lindsay's "Thermodynamic Imperative" when coupled with the appropriate model of a communication channel from Information Theory is a candidate for a "paradigm" in applied sociology. This "paradigm" has potentials for measuring a number of presently controversial parameters in our sociological system. It may be eventually used to combat Herman Kahn's "escalation of power theory" which appears to be at the base of the escalation of activity in Viet Nam in recent years.

From my humanist paper, you can see some connection with the student protest movement at University of California. I feel that the empirical method of application of social science used in Clark Kerr's book Industrialism and Industrial Man sabotages the great tradition of humanistic concern for man that has been present in our Western Civilization until recently. I consider that social scientists who allege that fascism and nazism were unpredictable aberrations are failing to see the full picture. Jack London perceived the potential development of fascism as far back as 1907 in his book The Iron Heel.

Another thing for which I consider social scientist irresponsible is the prevailing opinion in social science that the common people cannot be trusted, i.e., it is thought that the common people vote in fascism, elect demagogues, etc. When one examines the control of the newspapers, the millions of dollars spent by the NAM and other business organizations to defeat congressmen and members of state legislatures who are responsive to the needs and wishes of the people, I am pleased that a few people manage to see through the propaganda.

I am considering more publication of material under a pseudonym. If you have any comments, I would appreciate hearing from you.

Sincerely yours,

*Frederick B. Wood*

Frederick B. Wood

enc: Memo (form)  
SEPR 20-D, File 27-D  
SEPR 56-B, File 99-A & B.

cc: Victor Paschke

SOCIO-ENGINEERING PROBLEMS REPORT NO. 27-E

Date:	1/23/59	March 1959	7/30/63	May 1964	5/31/66	1/16/67
Stage:	Outline of Concepts	Paper at WJCC (File 27-A)	Review Letter	L. French Translation	Review letter	Consoloda File

Frederick B. Wood, Ph.D., P.O. Box 5095, San Jose, Calif. 95150, U.S.A.