

Stage I  
of I to T.

A Working Paper Draft  
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SOCIO-ENGINEERING PROBLEMS REPORT No. 19-C Reprinted 08/27/83

Supplement to a paper delivered at the Annual Meeting of the Society for General Systems Research affiliated with Section L, History and Philosophy of Science, of the American Association for the Advancement of Science, Cleveland, Ohio, December 27, 1963, "Negentropy and the Concepts of Freedom, Democracy and Justice."

"HISTORICAL NOTES ON NEGENTROPY AND POLITICAL SYSTEMS"

by

Frederick B. Wood

Socio-Engineering Problems Reports are a series of manuscripts on the social relations of engineering and related philosophical questions dealing with the interaction of science and society. Distribution is limited to reviewers and discussion groups for criticism prior to consideration for possible publication. The historical trail of stages of development of this particular study are listed in this manuscript. This series is produced as a hobby by the author independent of the organization for which he principally works. The research plan for a book including the material of this paper was developed while on a leave of absence from the corporation for which the author currently is working.

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"Historical Notes on Negentropy and Political Systems"  
 (Supplement to the paper, "Negentropy and the  
 Concepts of Freedom, Democracy and Justice.")

The stages in the evolution of my studies are numbered approximately in accordance with a listing made in 1945 of the stages each part of the study would have to go through. These stages are listed below:

- A-Searching for background reference material.
- B-Brief reading of background material.
- C-Study of background material.
- D-Summarizing of previous research workers' results.
- E-Definition of immediate problem.
- F-Tabulation of references for specific problem.
- G-Brief study of the problem.
- H-Formulation of preliminary hypotheses.
- I-Checking of preliminary hypotheses for agreement with known data.
- J-Collection of new data.
- K-Checking of hypotheses with cultural values in art, music, poetry, etc....
- L-Critical testing and revision of hypotheses.
- M-Preliminary report writing.
- N-Circulation of preliminary reports to others for criticism.
- O-Revision of reports.
- P-Publication.
- Q-Experimental use with small groups.
- R-Review of value of hypotheses as tried in practice.
- S-Preparation of popularized versions for public use.

<u>Stage</u>	<u>Date</u>	<u>Document No.</u>	<u>Abridged Title (Notes)</u>
A	2/11/37- (11/22/61)	SEP 52*	Why Electrical Engineering? (Engineering plus quest for understanding of politics, economics, and thermodynamic equivalent of human values.)
B	5/19/42	SEP 37-A	Correlation chart of philosophical ideas.
C	10/24/45	SEP 41	Proposal for pilot study of some invention.
D1	1/10/47	SEP 11-A	History of Electromagnetic Theory
D2	5/21/47	SEP 14-A	Historical Perspective
D3	5/21/47	SEP 15-A	Electric Power & Atomic Energy

Academic cooperation on interdisciplinary studies, such as the above were leading to, was destroyed by loyalty investigations and the Regent's loyalty oath (Berkeley 1949). Some further progress was made through non-academic groups such as small artist and professional discussion groups, but these were soon destroyed by fears of participants that there might be communists in the groups.#

\*These numbers are a mixture of file numbers and chronological report numbers which no longer fit either subject file class or time order.

#In the event of alleged communist infiltration, I made it known that I was interested in understanding the sociological processes which were going on, and did not wish to know who the alleged or real communists were.

Stage      Date      Document No.      Abridged Title (Notes)

By 1952 the loyalty investigation hysteria reached a point where the people of California voted a State Constitutional amendment to throw away part of their hard-earned religious liberty and freedom of speech. The loyalty oath for tax exemption of religious, charitable and educational organizations in California led to church boards of trustees eliminating discussion groups in their organizations for fear that communists might walk into a meeting and cause the church to thereby violate unintentionally the oath to prevent communists from using the church facilities. As Treasurer of the San Jose Unitarian Church as authorized by a vote of the congregation, I paid the tax under protest and crossed out the oath, and then arranged for the filing of a suit to recover the tax money. As the crisis in religious freedom and freedom of speech settled down to long months of waiting between each legal step in the long push up to the United States Supreme Court, I began to look again at the philosophical problems and found that the attacks on academic and religious freedom had locally eclipsed the impact of Cybernetics and Information Theory.

E1	8/13/56	SEP 16-A	Problems of Rigidity of Specialization
E2	2/18/57	SEP 19-A	Religion & Communication Theory
E3/Q	7/7/57	SEP 18-B	Lost Symbols & Noosphere
F1	12/13/57	SEP 5	United Nations & Information Theory

In the fall of 1957 the U.S. Supreme Court agreed to accept an amicus curiae brief from the San Jose Unitarian Church in connection with the consolidated church loyalty oath cases from California. In June 1958 the U.S. Supreme Court rendered a decision invalidating the California loyalty oath for church tax exemption.

G1/P	8/30/58	SEP 1	Social Responsibility
G2	8/11/59	SEP 7	Problems for SGSR.
G3/Q	6/29/60	SEP 28-A	Experimental Seminar
F2	11/12/61	SEP 65, Ch.10	Research Plan for "Communication Theory in the Cause of Man." (Maximizing Negentropy)
H	5/17/62	SEP 83	Seminar (Illustrations)
F3	10/28/62	SEP 65-D	Detailed Work Plan for Book.
L	5/22/63	SEP 65-E	Abstract with illustrated objectives.
J/M	9/5/63	SEPR 88	"Negentropy and Concepts of Freedom, Democracy and Justice."
N	11/18/63		Revisions
O	12/23/63	SEPR 88-A	Additional material added.
J/M	11/12/63	SEPR 91	Four Philosophical "Tools" Including 'Dynamic-Justice' concept.

Stage J A Working Paper Draft SEPWP No. 19-D  
of A to T Not to be Reproduced Without Permission Sept 14, 1983  
File No. A-485-AE  
SOCIO-ENGINEERING PROBLEMS WORKING PAPER No. 19-D

A series of manuscripts on the social relations of engineering and related philosophical questions dealing with the interaction of science and society. Distribution is limited to reviewers and discussion groups for criticism prior to consideration for possible publication.

The Application of Entropy to the Measurement of  
Social and Economic Freedom.

(Supplement to "Historical Notes on Negentropy and  
Political Systems")

While studying electrical engineering in 1937 I conceived of the concept that there could be a thermodynamic equivalent of human values. It was twenty years later in 1957 that I wrote some notes on religion and communication theory utilizing the concept of entropy from thermodynamics. In 1963 I presented a paper on "Negentropy and Concepts of Freedom, Democracy and Justice," at the A.A.A.S. meeting in Cleveland. More notes on the steps in the development can be found in SEpR No. 19-C, 12/23/63.

I never did figure out why I got such violent opposition in the computer industry to my concept of their being a relationship between human freedom and entropy.

On 07/25/80 I was running a bibliographical search from my home computer terminal over the telephone system to the Lockheed DIALOG system and found a number of papers on the application of "Entropy" to social systems. One reference by Dennis Gabor, the inventor of the hologram as of particular interest.

Gabor, Dennis and Gabor, Andre; "Application of Entropy to the Measurement of Social and Economic - Freedom" International Journal of Social Economics, N. 5, pp. 415-428, 1979.

I then ordered a full copy of the article from my computer terminal, and got a reply on my terminal that the system couldn't find the full article and that they would try other libraries until they found a copy for me. In a few days a photocopy of the article came in the mail.

From the article, I learned that it was a translation from an article in French published in 1958, which was a development of an article published in England in 1954:

Gabor, D. "Essay on the Mathematical Theory of Freedom," Journal of the Royal Statistical Society (Series A), Vol. 117 Part 1, 1954, pp. 31-72 (including the discussion).

Now I have the task of integrating my train of thought on entropy of social systems with the approach used by Gabor and Gabor.

Fred Bernard Wood

File:Prog6-sepr-19-d  
A-485- , A, -AA, -AB, -AC

*Recap of signature part of past <sup>mem</sup> work  
current & future work.*