

# Socio-Engineering Problems

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## SOME VITAL QUESTIONS

A list of vital questions about our civilizations in respect to: "individual worth," "appreciation for the universe," "cultivation of values," "understanding continuity of history," and "development of individual responsibility and accountability."

Source material and references are included as follows:

References on "engineering ethics"

Interaction of Social Science and Engineering, also p.167

Quotations from Anthony Stardon Science

Is A Sacred Cow

Miscellaneous References, see especially:

p.7 Sir Henry Self Some Implications of Modern Science: Privately printed (1958)

p.9 history and methods of science (references)

p.10 Information Theory in Biology

pp.12-16 engineering, ethics and social responsibility in engineering journals. "④" indicates listed in SEP No. 4

p.15 ★ "Engineers Need a Hobby"

Frederick B. Wood

"Some Vital Questions"

by

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The following are a list of questions about our civilization, which I wrote down sometime in 1950. There are reproduced now to assist in evaluating to what extent we can give better answers to the questions fifteen years later in 1965. These questions relate to "individual worth," "appreciation for the universe," "cultivation of values," "understanding the continuity of history," and the "development of individual responsibility and accountability."

A. Do we develop a sense of individual worth?

The importance of each individual is inherent in the religious base of our Western Civilization, and particularly emphasized in the United States Constitution and Bill of Rights. However the drive toward conformity in the U.S.A. in the fifties tended to restrict freedom of individual expression on a level approaching that of the totalitarian societies we were supposed to oppose. The concept of the "thermodynamic imperative" and the "maximizing the negative entropy" offer the proposal of better implimenting the protection fo the sense of individual worth in our civilization.

B. Do we develop an appreciation for the universe?

C. Do we provide for the cultivation of values?

D. Do we develop in our people an understanding of the continuity of history? Do we understand the transition from feudalism to capitalism? Do we understand the role in history of the philosophies of Locke, Hume, and Marx?

Notes on D: Since the structure of feudalism gave way to capitalism, what can be expected as the next transition? Will it be a transition to socialism or will there be a technological change that will change the conditions which generated socialism so that a new set of conflicts will be relevant?

At the present stage of technology (1950) in the tools of production, what system would most likely provide for peaceful use of science for the good of the people? The unregulated processes of capitalism or the regulated processes of socialism? At that time there was not available data on competitive systems at equivalent stages of development to get a definitive answer. Now (1965) the development of computer based data processing systems has put effective feedback loops into individual business firms such that the individual firm is strengthened by use of the concepts of cybernetics. The existence of the computer industry has eliminated one of the prime arguments for socialism.

This in turn has led to another change. The feedback mechanism of the material balances methods of economic planning have turned out to be too slow for the complex soviet system. The Russians are now having to use computer based input-output tables to make their socialist system work properly. However the Russians predict that they can make more effective use of the concepts of cybernetics than capitalist systems.

E. Do we provide for the development of individual responsibility and accountability?

- 1) See Archibald MacLeish, The Irresponsibles(1940)
- 2) See the Society for Social Responsibility in Science.
- 3) See Code of Ethics of National Society of Professional Engineers.

The following book by Anthony Standen has some very important statements relative to the misuse of science and misapplication of the scientific method. (For comments by Standen on Lindsay's "thermodynamic Imperative" see American Scientist, 47, 398A(1959). Copies filed with File 86-A)

Anthony Standen, Science is a Sacred Cow, N.Y.: E. P. Dutton(1950)

"One of the great Sophistries of the world is the over-extension of the scientific method into realms where it does not belong. To expose Sophistry is the aim of my book but it is a tricky business (author's statement)

Ch VIII Watch These Scientists pp 201-221.

p216 "...and the new science loves it as admirably to organized snooping under the impressive names of 'social engineering' or 'biotechnology'. There is a real and dreadful prospect that social scientists will find well-heeled sponsors for work on 'the problems of employees.' They will make every employee not exactly happy, but happy in his job. He will be permitted to stay happy as long as he stays in his job but woe betide him if he betrays a trace of that old-fashioned feeling, a longing for independence"

"...dangers. Mr Aldous Huxley has seen them very clearly. 'The most important Manhattan projects of the future,' he prophesied, 'will be vast government-sponsored inquiries into what the politicians and the participating Scientists will call 'the problem of happiness.' - in other words, the problem of making people love their servitude."

social scientists see things differently from Mr. Huxley, and are not much concerned about freedom or servitude. In Survey of Social Science, by Marion B. Smith, Professor of Sociology at Louisiana State University, it is interesting to note the "Freedom" does not appear in the index. Neither does "Liberty", although "Libraries" is there. .... Melton wrote the Areopagitica, a defense of freedom of speech, John Stuart Mill wrote his famous essay On Liberty, to mention only two illustrious authors who have contributed to this ancient subject, but were pre-scientific.

T.D. Perry "Engineers Need a Hobby"  
 Ann Soc Tech Engng. - Paper m54 - A-177  
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