

"Historical Notes, VI: World War II Reconversion,
Obstacles to Interdisciplinary Studies and
Other Factors."

by

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The following notes refer to the figures in
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The Three-Dimensional Chart. (Figures 1-3)

As World War II appeared to be nearing an end in 1945 I became concerned over whether we had the understanding and techniques to obtain satisfactory international cooperation after the war. I felt that a more powerful philosophical approach was needed. It became apparent that an important factor in our inability to handle easily the problems of our complex society was the lack of overall perspective in our society where people specialize in narrow fields.

I experimented with trying different ways of representing the relationships of the different fields of science as a possible aid to establishing better contact between specialists. The diagram of Figure 1,2,3, were developed in the latter part of 1945. Professor Carl Zimmerman of the Sociology Department, Harvard University, pointed out the close correspondence of the vertical levels of my charts with the classification table of August Comte.

In attempting to find a practical way to develop these ideas for promoting better communication between specialists I found a range of responses mostly negative such as "why don't you take up some non-controversial hobby such as stamp collecting." I found sociologists were searching for

non-controversial problems in which they could make sociology more "scientific." I did not fare well in an attempt to communicate these ideas to psychology professors. A social psychologist told me that there wasn't much point in me an engineer discussing these things with him and he recommended that if there was anything in common between engineering and psychology it would be with some industrial psychologist. I looked up some references on industrial psychology and was repulsed by a feeling that industrial psychologists were helping in the exploitation of workers to maximize short-run efficiency.¹ I felt that such work was inconsistent with the ethics of Christianity - "thou shalt love thy neighbor as thyself" which is supposed to be a dominant theme in our civilization.

My contacts with some personnel recruiters for industry after World War II helped create an impression of greed and disregard of the best interests of the American people, particularly comments like "It's time to make a killing: Our lawyers have found a loophole in the anti-trust law."

¹Many years later I found that there are psychologists and psychiatrists whose objective is to help people understand themselves and to help them solve problems instead of trying to force them to conform to rigid patterns specified by employers, government agencies, etc. For example the following comment from a recent book on industrial mental health illustrates a neutral role for the industrial doctor and psychologist:

"The members of such a medical department are effective only if they have been able to achieve a neutrality in the minds of the employees and management." - - - from:
Alan A. McLean and Graham C. Taylor Mental Health in Industry
N.Y.: McGraw-Hill Book Co. (1958).

I interpreted the sending of "canned" sermon material to ministers of religion by some industrial groups as an attempt to disable the role of the churches in our society to act as a conscience to ask questions which might help the people of our country be prepared to face the problems of the world after World War II. My attempts to discuss the role of the Hebrew-Christian of our culture in determining business policy with industrial representatives such as The National Association of Manufacturers and some local business organizations were very disappointing and perhaps pushed me to consider how the engineers and scientists who make possible the rapid changes in technology could find some reasonable way to insure that the people of the United States of America could have the understanding to make reasonable decisions in our increasingly complex society.

It was particularly disturbing to have people say it sounded like I had been reading Communist literature to have such ideas about the inter-relationship of engineering and sociology. Since I hadn't been reading such literature, I became curious after a few comments like the above. I tried reading some communist leaflets, but found them hard to comprehend. Later I found some of the classical writings of Marx and Engels quite logical in terms of the state of science of their time, but it was difficult to determine whether their philosophy had kept pace with the subsequent advances of science.

Checking Chart (figure 4).

I had given up finding satisfactory ways of developing my ideas on the establishing better contact between separate fields of knowledge when I found an inter disciplinary graduate seminar on international economic problems was being set up for the Spring 1947 semester at the University of California. I participated in this seminar and developed the checking chart of Figure 4 as a way to illustrate the incompleteness of the work of an individual specialist so that the superposition of these checking charts for the analyses of different specialist would give an indication of the "completeness" of coverage of the combined work.

Complications arose which prevented the publication of the report of the above seminar. However there is a footnote in a published article which refers to:

2. Walter Isard "Some Economic Implications of Atomic Energy" Quart. Jour. Economics vol. 62 (1948), pp. 202-228. Note on page 223: See also in this connection an unpublished paper, "Preliminary Estimate on Location of Atomic Energy Piles for Generation of Electricity and Plutonium" by Frederick B. Wood (University of California at Berkeley)

Social Obstructions to the Development of
Contacts Needed to Fill In Checking Charts (Figure 6)

The extended investigations of the House Un-American Activities Committee, extension of loyalty investigations to all Federal employees, the Regents Oath at the University of California, and the requirement of loyalty oaths of all public employees, and the adoption of loyalty investigation in many industries even where no military contracts were in effect all contributed to a climate which made the communication between different specialists and organization very difficult. When I found groups of people who showed an interest in these ideas for establishing communication across the established diving lines of the special fields, I found that there were troubles about people worrying about the possible association with communists. After a while I gave up on actively pursuing my hobby of trying to develop a way of better understanding the problem of our complex society. It still was puzzling to me that many people who considered themselves Christians responded with hostility to questions and ideas which I thought would help people find ways of advancing our civilization toward a closer realization of the ideas of Christianity. I concentrated more on my engineering work leaving the problems of society to drift on. I missed the two fluries of inter-disciplinary conferences and

projects centered around (1) cybernetics, and (2) information theory which showed hope of accomplishing links between the various special fields.

In about 1950 I became slightly aware of the work of Sigmund Freud, the founder of psychoanalysis. Up until that time if someone had mentioned his name I would have identified him as some doctor from Vienna who experimented with transplanting monkey glands to humans for sexual rejuvenation. It wasn't until 1956 that I bothered to read books by Freud to find out what he really said.

In 1952 I became more active in a church. I thought that there would be more opportunity in the church to talk about the problems of our society, but I found the drive to conformity and the atmosphere of loyalty investigations caused people in the church to be afraid of discussing important issues. The last straw in a series of frustrations came when the "loyalty oath" for church tax exemptions took effect in California. I am proud to have contributed in a small way to the legal fight over the constitutionality of the loyalty oath for church tax exemption which finally ended with the U.S. Supreme Court decision invalidating the California oath requirement in 1958.

Conditions Leading to a Reevaluation of
My Earlier Ideas on Social Responsibility

After reading Freud's lectures¹ in about 1956 I could see that many aspects of human behavior that had been perplexing to me were understandable in terms of psychoanalytic theory. I learned that people do not act upon strict logic, but their actions are based upon a complexity of feelings, ideas, and past experiences. I began to realize that I had not been aware of knowledge of human behavior that already existed. I had been persistent enough in discussing ideas with people to get enough clues as to how people really felt. I came to expect that people would resist new ideas even though the logic might be beautiful.

The concepts of Freud helped understand individualism in our society, but there seemed to be something still perplexing about the functioning of businessmen who were active in churches. I have evolved a principle that if one is to criticize someone, one should first understand the person's objectives and ideals, so that the criticism can be in terms of the person's achievement in respect to his own ideals. If one examines the "common ideals" in the quotation from THINK

¹S. Freud, Note: Insignificance of Freud in Psychology, Textbooks; My best references to Freud came from browsing in books in San Francisco, New York, and Syracuse, N.Y.

Magazine,¹ one can see that the major religions of the world have much in common. I have found that this principle didn't always work. It seemed to work in dealing with political groups, but seemed to fail particularly with people who were active both in church activities and in business administration. I just recently read an article by Professor Boulding¹ which shed some light on this problem.

The most important I have learned from Dr. Boulding is that it was not my principle of criticizing people only on the basis of their own ideals, but that there are two ethics within Protestant Christianity--the ethic of the new testament and the "Protestant Ethic" derived from it. Knowing about this double set of ethics permits us to understand our society better and to avoid unnecessarily disturbing our economic system.

I am also pleased to find someone else independently has discussed the possible situation "in which loyalty investigation corrupts the system of communications." I have experienced this corruption of the system of communications in my earlier attempts to use the "checking chart" to develop a way of meeting our social responsibility in a complex society.

¹See page 15 of Socio-Engineering Problems No. 1

Reasons for Writing This Material at This Time in This Form.

The simultaneous convergence of several factors at this time led me to review my previous ideas:

- (1) Disruption of communication channels in our society that existed during the McCarthy Era has partially abated.
- (2) The panel on Social Problems of Automation at the 1958 Western Joint Computer Conference brought my attention to the potential interest of engineers in the question of the social responsibility of engineers.
- (3) My discovery that Sigmund Freud had initiated a great advance in the understanding of human nature, had led to a better understanding of myself and my fellow human beings.
- (4) The concept of Dr. Boulding of a basic ethic and a derived ethic existing side by side in human society helped me understand previous difficulties in discussing my ideas.
- (5) The call for papers for the Western Joint Computer Conference for March 1959 inspired a burst of speed in writing up my ideas.
- (6) My low percentage of success in getting articles accepted by existing journals has led to my considering a means of exchanging ideas with selected people who might be interested enough to comment on the validity and usefulness of my thoughts.

I believe that the feedback system of cybernetics and the concept of maximizing negative entropy in information theory both have important values in the Social Sciences which have not been well utilized to date. Although the new journal Behavioral Science has made important contributions, I feel that the potentials of cybernetics and information theory have

not been realized yet in the Social Sciences. The significance of my previous memoranda on social responsibility of engineers is that it indicates a way by which the necessary communication channels in our complex industrial society can be checked for completeness. By analogy with the feedback circuits of cybernetics it should be possible to develop an analysis of the functioning of these feedback loops in maintaining a dynamic (or growing) equilibrium in a changing society. I expect that the contribution of information theory to the Social Sciences will be the development of a measure of the negative entropy of messages coming from different sources in society which provide the feedback signals. Analogies derived from statistical decision theory give promise of alerting us to over simplification of our sociological problems which might lead to erroneous decisions based on inadequate data.

3. Sigmund Freud The Interpretation of Dreams Trans. by Dr. A. A. Brill, trans, first published in 1913. N.Y.: Modern Library (1950).

Sigmund Freud A General Introduction to Psychoanalysis Trans. of the Revised Edition by Joan Riviere. Boni and Liveright edition (1924). N.Y.: Permabooks Division of Doubleday and Co. (1963).

Rachel Baker Sigmund Freud for Everybody N.Y.: Popular Library (1955).

Robert Lindner Must You Conform? N.Y.: Rinehart and Co. (1956).

Erich Fromm The Art of Loving N.Y.: Harper and Bros. (1956) Vol. IX of World Perspectives edited by Ruth Nanda Anshen "This Series is committed to a re-examination of all those sides of human endeavor which the specialist was taught to believe he could safely leave aside. It interprets present and past events impinging on human life in our growing World Age and envisages what man may yet attain when summoned by an unbending inner necessity to the quest of what is most exalted in him. Its purpose while refusing to betray the intimate correlation between universality and individuality, dynamics and form, freedom and destiny. Each author treats his subject from the broad perspective of the world community, not from the Judaeo-Christian, Western or Eastern viewpoint alone." -- from p. ix.

5. Kenneth E. Boulding "Religious Foundations of Economic Progress" Harvard Business Review May-June 1952.

Dr. Boulding states⁵:

"The past three centuries have witnessed a rate of economic development in the "western world" which, measured by any standard we choose, almost certainly exceeds the achievement of any other period of equal length in human history. We are so much accustomed to this rapid progress, both in techniques and in general levels of income, that we are likely to take it for granted
. The history of civilizations reveals that it is perfectly possible, indeed easy, to dry up the springs of progress in a society, and that virtually all past civilizations have eventually done so. Therefore, unless we are

aware of the nature of those elements in our total pattern of life which are responsible for this rapid rate of development, we may run into grave danger of changing that pattern, without knowing it, in a way that destroys those peculiar elements in the culture from which development springs.

"Important among the elements in our complex culture having favorable influence on the rate of economic development are certain religious ideas and practices which comprise the so-called "Protestant ethic."

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..... "The stimulus to economic progress, therefore, is not in the ethic of the New Testament itself; rather it is in the "Puritan" substitute-ethic, the product of the impact of the ethic of love on the iron laws of the world.

"The substitute-ethic, however, is itself somewhat unstable, because it is always subject to criticism by the pure ethic which generates it. Hybrids are vigorous but can generally only be reproduced from pure stock! Thus when the New Testament makes a fresh impact on a sensitive and vigorous mind - as it is likely to at least once in a generation - the gospel of "be righteous and grow rich," for all its truth and practicality, looks cheap and pharisacal beside the poetic vision of "sell all thou hast and give to the poor"; and radical forms of Christianity tend to appear. There is something in Toynbee's suggestion that Communism is a Christian heresy!

"A world of unseen dictatorship is conceivable, still using the forms of democratic government, in which education has been replaced by training, in which government creates artificially the public opinion which keeps it in power, in which "loyalty" investigations corrupt the whole system of communications, in which only "safe" ideas are expressed, in which love of country is corroded by conscription and integrity is swallowed up in expediency, and in which the springs of technical, as well as of moral, progress are eventually dried up. The cleverer we are and the more we know, the more thoroughly we may damn ourselves.

Dr. Boulding (cont.)

. All past civilizations, however, have proved to be unstable; the "iron laws" of social dynamics have eventually caught up with them and destroyed them. It is by no means improbable that our own civilization will suffer the same fate.

END