"Social Engineering"

For a first approximation in our analysis of the problems facing civilization today, let us first assume a naive attitude, while at the same time let us set up a procedure to catch errors that this attitude causes us to make at this stage.

First let us consider the hypothesis that basically we have a situation where great progress has been made in the engineering application of physical and chemical science, and to a certain extent in biological science, while little apparent progress has been made in the engineering application of psychological and social science. It is suggested that engineering application of the social sciences needs to be carefully examined to see what has been accumulated in a field which we might call "social engineering". We must keep in mind that the knowledge to be applied may not necessarily all be found within the formal social sciences, as some appear in part in the humanities, arts, religion, and other fields.

To develop an initial body of data, concepts, and principles of social engineering let us set up a series of steps analogous to the steps in the solution of a problem of physical science. For this purpose the following table has been prepared.

Stages of Development of Social Engineering Techniques

Stage Description

A - Searching for background reference material.

B - Brief reading of background material.

C - Study of background material.

D - Summarizing of previous research workers' work.

E - Definition of immediate problem.

F - Tabulation of references for specific problem.

G - Brief study of problem.

H - Formulation of preliminary hypothesis.

I - Checking of preliminary hypothesis for agreement with known data.

J - Collection of new data.

K - Checking of hypothesis with cultural values in art, music, poetry, scenic beauties of nature, etc.

L - Critical testing and revision of hypothesis.

M - Preliminary report writing.

N - Circulation of preliminary report to critics for pre-issuance criticism.

O - Revision of reports.

P - Publication.

Q - Experimental use with small groups.

R - Review of value as tried in practice.

S - Preparation of popularized versions for public use such as advertisements, moving pictures, etc.

For comparison we can refer to the following summary of the general procedure in theoretical mechanics.

(1) A physical system is an object of curiosity; we wish to predict its behavior under various circumstances. The system in question might be a pendulum, or a pair of stars attracting one another.

(2) An ideal or mathematical model of the physical system is constructed mentally. (The pendulum is regarded as a rigid straight line, and the stars are regarded as two particles.)

(3) Mathematical reasoning is applied to the mathematical model. (This means that differential or finite equations are set up and solved. Formulas are developed to give answers to interesting questions, such as those concerning the periodic time of the pendulum or the orbit of one star relative to the other.

(4) The mathematical results are interpreted physically in terms of the physical problem.

(5) The results are compared with the results of observation, if possible.[1]

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[1] Synge and Griffith, Principles of Mechanics, N.Y. McGraw-Hill Book Co., 1942, p. 6.

The following from J. Neyman may be of assistance:

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.... two different ways of treating economic problems by means of statistical methods. One could be called empirical, another a priori....(empirical) is very popular... (a priori) is much less popular and so far has not proved very efficient. Still, I shall rather condemn the empirical.. and praise...a priori.... (instances in Astonomy showing failure of empirical and success of a priori).[2]

The social engineer is preliminarily regarded as an interpreter of science in terms of human needs, whose function is to advise the people so that they may make more fruitful use of the discoveries of science, the wisdom of the great philosophers, and the teachings of the great religious leaders in their solution of problems through democratic procedures.

In this first approximation it seems best to examine the situation quite independently of any particular philosophy such as those characterised by "science is communism" and "Marxism is science." However, the comments of Von Mises[3] regarding Werner Sombart's definition of socialism should not be overlooked.

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[2] J. Neyman, Lectures and Conferences on Mathematical Statistics, 1938, p. 10. (....) indicates insertion of abridged phrases by abstractor.

[3] Richard von Mises, Probability, Statistics and Truth, 1939, p. 4.

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