

"General Plan of Graduate Study(1946-1950)"

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The following is a copy of my 1948 statement on my graduate study plans:

GENERAL PLAN OF GRADUATE STUDY (1946-1950)

My objective in undertaking graduate study is to prepare myself for the application of our knowledge of electromagnetic phenomena to the meeting of human needs. This program consists of three parts.

Formal study program leading to Ph.D. degree:

- (1) Study of existing knowledge of physics and mathematics.
- (2) Study of engineering techniques and research on a specific problem.

Informal liaison with social scientists:

- (3) Study of how human needs are determined.

Mention of "human needs" is made by the Engineers' Joint Council for Professional Development in their pamphlet, Engineering As A Career, (1942), page 8, where engineering is defined as follows: "The engineer may be regarded, therefore, as an interpreter of science in terms of human needs and a manager of men, money, and materials in satisfying these needs."

I have found that parts (1) and (2) are essential to part (3). When conferring with social scientists, the questions most frequently asked of me relate to the techniques, concepts, and philosophic implications of physical science and mathematics. This situation leads me to conclude that the most efficient way for me to assist in the study of human needs, is for me to be prepared to help social scientists on questions involving physics and mathematics. This would leave the direct study of the determination of human needs to the social scientists.

February 9, 1948

Frederick B. Wood

SOCIO-ENGINEERING PROBLEMS REPORT NO. 73-A

Date: 2/9/48 2/7/67

Stage: Memo SEPR 73-A

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CITIZEN'S  
HAT



SCIENTIST'S  
HAT

History of water of a Cal. Yucca 6170

p 639-640, 641  
"Wood Peckers" through "F. solitarius"  
Change 6173

pp 642-3 Vermilion Noddy 6175  
also pp 644-645

pp 648 -- N. C. G. Cape 6177

pp 662-668 -- Math 4 1 mi - Se Sa 6178

pp Atlantic Isles

6179

An Abstract of an Unwritten Paper on the Application  
of the Theory of Functions of a Real Variable to  
Electrical Engineering.

The analysis of the coupling of resonant circuits such as microwave resonant cavities utilizes the Stieltjes integral. When electrical engineering is redefined as the application of our knowledge of electromagnetic phenomena to the meeting of human needs, other possible applications of the theory of functions are foreseen.

These other possible applications lie in the field of a possible theory of social integration which might take ten or twenty years of intermittent research to establish. Although no evidence has yet come to my attention that any parts of the theory of Riemann integration can be directly applied to social theory, it seems possible that certain theorems of mathematics, when generalized in the form of logic, may prove useful in the field of sociology. It is possible that when these (unwritten) ideas are examined by experts in the fields involved that this may turn out to be naive imagination without much basis for logical analysis.

Table of Contents (Proposed)

1. A Discussion of the scope of electrical engineering.
2. An example of the use of the Stieltjes integral in computing the mutual inductance of a loop in a resonant cavity.
3. A discussion of a proposed investigation of a theory of social integration.
  - a. Is there a social analogue to the existence theorem for the solution of a differential equation?
  - b. Can the solution of differential equations by methods of successive approximations be of assistance in setting up procedures for verifying social hypotheses?
  - c. What is the covering theorem of applied sociology (i.e. engineering application of social psychology and social theory) corresponding to the Heine-Borel-Lebesgue covering theorem?
  - d. What form might a theory of social integration take?
  - e. Of what assistance might the analysis of convergent series contribute to a sequence of converging social hypotheses?

10/2-1072

study differential equations with...  
study classical theory of electricity and magnetism  
(Physics 210-2104)  
prepare for qualitative exercises for...  
electric circuits.

PHYSICS 210-2104 (1916-1940)

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February 5, 1948

Frederick P. Good