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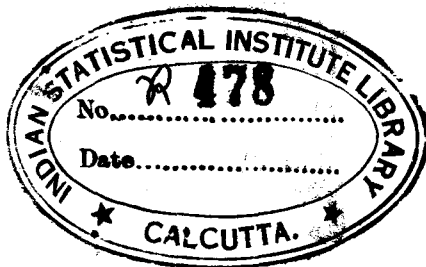
PREFERENCE STUDIES

IN

DEPARTMENT 1300

by

Walter A. Shewhart.



Conference to be held in 1E-355 or  
June 17, 1948 at 9:30 A.M.

W. A. SHEWHART'S COLLECT

## I - BELL SYSTEM OBJECTIVES

To provide  
SADE-Q  
to the ultimate user.

BTL objective:

Exploring, inventing, devising,  
and perfecting continued im-  
provements and economies in Tele-  
phone Service.

~~over~~ →

## II - THE PRESENT SITUATION

~~\*~~ Outside Bell System

National Associations

American Marketing Association  
Trade Associations  
CIO  
AFL

over. →

Universities 1946-48 ?

Princeton Michigan (Columbia) ?  
Harvard Chicago

Armed Forces

Psychophysical Systems Research, Johns Hopkins  
Navy Advisory Panel on Psychophysiology  
Hearing: Weaver, Princeton  
Guild, Johns Hopkins  
H. Davis, Harvard  
Vision: Hartline, U. of Pennsylvania  
Graham, Columbia  
Quartermasters Corps on Food and Clothing

Evaluational Groups

Gallup Consumer Research  
Crossley Consumers Union  
Hooper Producers-Consumers Council

Industry

Consumer Research  
Swift and Company - meat for import.  
General Motors  
Proctor and Gamble  
Sears Roebuck

Government

U. S. Dept. of Commerce U.S. Bureau of Census  
U. S. Dept. of Agriculture *US Food and Drug.*  
U. S. Dept. of Labor  
State Depts. of Agriculture FCC ICC, etc.

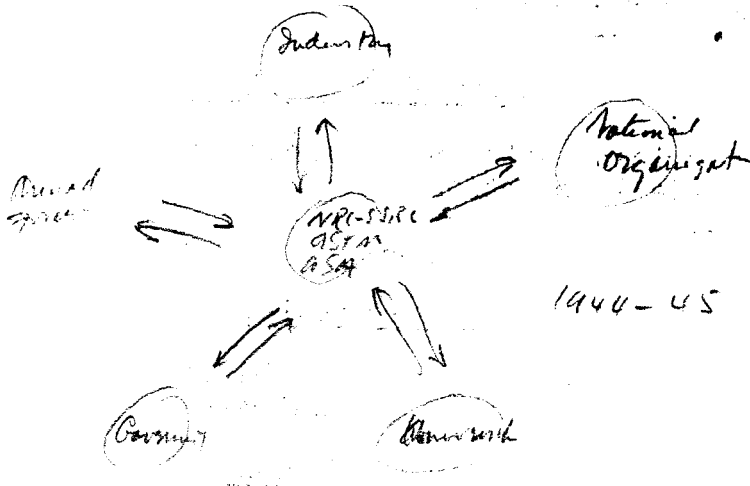


Chart 4

Work outside well organized.

CONFIDENTIAL  
NRC-SSRC Committee (1945)

Object

1. Objective appraisal of current methods of measuring attitudes and opinion.
2. To sponsor fundamental research on the technical or methodological aspects of such measurements.
3. To provide improved communication among persons engaged in the development and application of these methods in
  - 3.1 Governmental bodies.
  - 3.2 Industrial organizations.
  - 3.3 Academic and nonprofit institutions.

Projects under way

1. Sampling
  - 1.1 Analysis of the principles underlying sampling methods.
  - 1.2 Comparison of effectiveness of sampling methods in current use.
  - 1.3 Collection of data on the variability of factors of importance in planning sampling surveys.
2. Isolation, measurement, and control of interviewer effect in attitude and opinion studies.
3. Coordination of studies on panel methods of interviewing.

## American Standards Association

Resolution of Board of Directors, May 19, 1944

"Resolved, That in the opinion of the Board, because of the growing importance of standards for consumer goods, the scope and work of the ASA be broadened and clarified by removing the present restrictions which limit the work of the ASA to the engineering field; and that the ASA should be so organized that it can handle any standard or standardization project which deserves national recognition, whether in the field of engineering, accounting, business practice, or consumer goods."

## American Society for Testing Materials

Report of Special Committee on Ultimate Consumer Goods, January 9, 1945.

Research Project on Consumer Wants: Since the Committee is convinced that successful development of standards in the consumer goods field will require more factual knowledge concerning the wants of consumers and more basic data on use values than are now available, the Committee recommends that:

ASTM shall consider the establishment of a research project for the development of techniques for obtaining knowledge of consumer wants and for accumulating data on which to base specifications and methods of test for ultimate consumer goods. It is contemplated that this project should utilize social, statistical, psychological, engineering, and economic approaches.

### III INSIDE BELL SYSTEM

BTC

ATTCo

TEL.  
Co.

WECCo

No systematic tie in with outside companies.

No systematic attempts to do things  
outside companies are doing.

## IV - TENTATIVE PROGRAM FOR 1300

0730 >

1. Crystallization of all available information.
  - 1.1 Sampling methods - Comparison of advantages of random, stratified, and systematic sampling procedures.
    - 1.1.2 Development of criteria for determining adequacy of sampling procedure - size of sample, etc.
  - 1.2 Methods of measuring preferences.
    - 1.2.1 Questionnaire methods
    - 1.2.2 Panel methods
    - 1.2.3 Other psychophysical methods

Of particular importance here is the study of the interaction between observer and subject.
2. Development of improved methods of measuring user preferences.
  - 2.1 Verbal techniques such as polling
  - 2.2 Techniques involving the measurement of observable reactions of the subject. For example, one might film, unknown to the subject, his reaction to a particular feature of the telephone system.
  - 2.3 Techniques involving the measurement of some physiological variable such as skin resistance, muscle potential, brain waves, and the like.
  - 2.4 Techniques involving the measurement of liminal units.



Power System  
Equipment

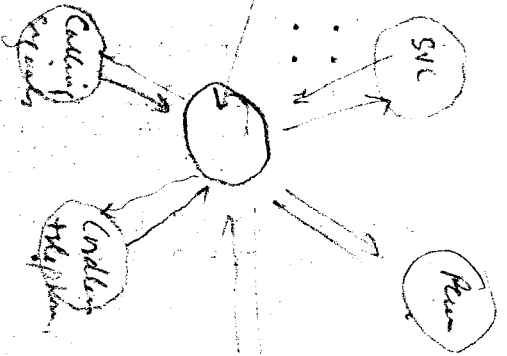
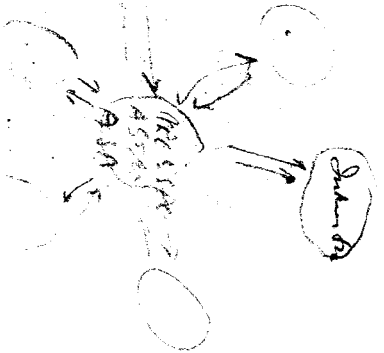


Chart 5



3. Study of individual motivation and preference systems. over →

3.1 How is given user preference or want related to his other preferences or wants?

3.2 How can a user want or preference be changed by influence that involves other wants?

3.3 How stable is a user preference system?

3.4 How effectively does a user preference system determine the user's behavior?

3.5 How can one predict future user behavior from a knowledge of his present preferences?

3.6 How does a user's preference system depend upon

3.6.1 That which is immediately experienceable?

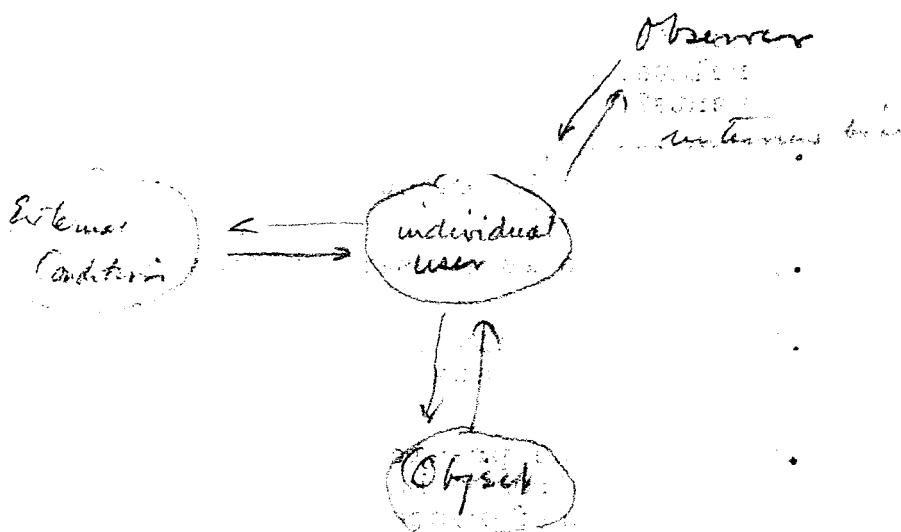
3.6.2 His cognitive processes?

3.6.3 His emotive processes?

4. Study of the relation of individual preferences to the inherent physical and chemical properties of telephone equipment and service.

4.1 How sensitive are preferences to the physical and chemical properties of the product or system?

4.2 What qualities or properties of a product or system, apart from those actually possessed by the product, influence the user's preference?



errors in perception  
 errors in interpretation  
 degree of awareness

Chart 6

5. Study of group preference systems.
  - 5.1 How does a user's preference system change in the light of fashion trends, fads, panics, depressions, and the like?
6. Cooperation with other groups in 1300 on problems involving the measurement of preferences.
7. Organization of procedures for measuring preference; isolation and classification of user communication preference; and development of basic framework of a theory of user preference.

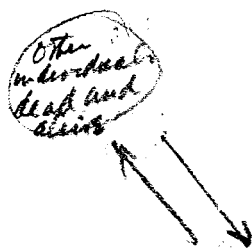


Chart 7 Same as to plus  
what is indicated above

## V - SOME COMMENTS ON THEORETICAL FRAMEWORK

### 1. Fundamental Problem is that of valuing.

(Figure showing act of valuation)

#### 1.1 Dimensions of value

- 1.1.1 Intensity
- 1.1.2 Duration
- 1.1.3 Inclusiveness
- 1.1.4 Preference

### 2. Choice of theory of value

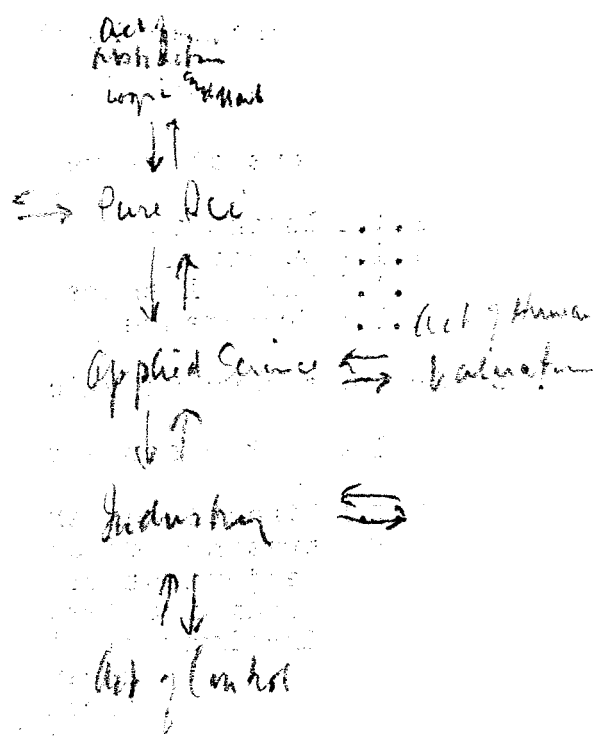
#### 2.1 Value in the sense of interest

- 2.1.1 Directly experienceable in presence of object or thing (enjoyment of music and food)
- 2.1.2 Cognitive (means to end) involves, prediction,
  - uncertainty
  - 3 incompleteness of meaning
- 2.1.3 Emotive

#### 2.2 Concept of value as something independent of interest.

The question here involved is: "Do values come into existence apart from and prior to anything whatever in the way of evaluating condition?"

Measurement  
in terms of  
Practical Value



Carry over to act of evaluation the techniques of

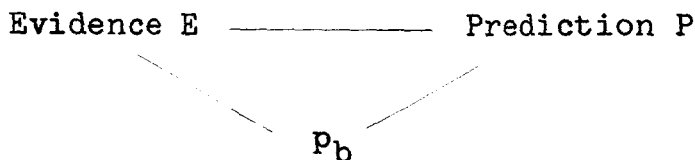
- 1) Detecting assignable causes
- 2) Operational meaning & theory of inference

3. Choice of terminology.

Value	opinion	desires
preference	attitude	wishes
want	likes	feelings
quality	needs	interest

Need for operational meaning of each.

4. Choice of theory of the cognitive act of going from evidence E to expectation (prediction or meaning) P with assurance  $p_b$ .



4.1 Types of cognitive act

- 4.1.1 Rational
- 4.1.2 Intuitional
- 4.1.3 Irrational

4.2 Types of evidence.

- 4.2.1 Observed data
  - 4.2.1.1 Considered as distribution
  - 4.4.1.2 Considered as ordered
- 4.2.2 Authority

Point out importance of accepted theory of cognition on questionnaire method.

Need for knowing what the subject expects and what he uses as evidence.

5. Choice of sampling plan

Without use of correct sampling plan, rational interpretation is impossible.