THE EFFECTS OF TIME OF DAY AND LABEL OF EXPERIMENT ON VOLUNTEERING BEHAVIOR

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Thesis Abstract

The purpose of this study was to investigate the effects of time of day and label of experiment on volunteering behavior.

The 80 subjects of the study were enrolled in undergraduate psychology classes at Appalachian State University spring semester 1976.

The volunteers were recruited to volunteer for an experiment at 8:00 a.m. or 4:00 p.m. labeled (1) emotional stability, (2) sex role identification, (3) objectivity - subjectivity, and (4) shyness - social interest. These were the six independent variables of the study.

Volunteers were administered the Guilford-Zimmerman Temperament Survey (G.Z.T.S.) in the group in which they volunteered. The ten attributes measured by the G.Z.T.S. served as the dependent variables of the study.

The data collected on the G.Z.T.S. were subjected to statistical treatment (univariate F tests) to test the major subhypothesis at the .05 level of significance or better.

Students who volunteered for a study labeled sex role identification showed significantly higher general activity, lower restraint, higher social interest and higher personal relation.

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Chapter I

Introduction

Persons involved in psychological research must constantly be aware of the contaminating effects of extraneous variables. These extraneous variables make it impossible to effectively measure the effects of independent variables on dependent variables. Some extraneous variables such as experimenter biases and subject biases as a general rule are strictly controlled for. The contaminating effects of some other possibly extraneous variables, such as time of day and labeling of experiment, have received extremely sparse attention in the literature.

The personalities of subjects or their reasons for volunteering can be important determinants of responses given in experimental situations. (Lasagna and Felsinger, 1957.) Personality attributes such as high intellectual ability, high motivation, low authoritarianism, high need for social approval, and higher social ability have been shown to be associated with high rates of volunteering. (Rosenthal, 1965.)

Jung (1971), after reviewing research on volunteering behavior, concluded that students who sign up for one type of experiment differ from students who sign up for another type of experiment. Newman (1957) showed that volunteers who sign up for an experiment labeled "perception"

show higher scores on autonomy than non-volunteers. Volunteers who sign up for an experiment labeled "personality" show variability of autonomy on EPPS profiles from those who sign up for an experiment labeled "perception".

The purpose of the present study is to determine variability in personality traits among subjects who volunteer early in the day as opposed to late in the day, and among subjects who volunteer for an "emotional stability" experiment as opposed to a "sex-role identification" experiment, an "objectivity-subjectivity" experiment, or a "shyness/social-interest" experiment.

Statement of the Problem

The purpose of this study was to determine if any significant differences existed among students who volunteered for an experiment early in the day versus one late in the day, and among students who volunteered for experiments labeled A) emotional stability, B) sex-role identification, C) objectivity/subjectivity, and D) shyness/social-interest.

Significance of the Problem

The personalities of subjects or their reasons for volunteering can be important determinants of responses given in experimental situations. (Lasagna and Felsinger, 1957.) Personality attributes such as high intellectual ability, high motivation, low authoritarianism, high need for social approval, and higher social ability have been shown to be associated with high rates of volunteering. (Rosenthal, 1965.)

June (1971), after reviewing research on volunteering behavior, concluded that students who sign up for one type of experiment differed from students who sign up for another type of experiment. Newman (1957) showed that volunteers who signed up for an experiment labeled "perception" showed higher scores on autonomy on EPPS profiles. Volunteers who signed up for an experiment labeled "personality" showed variability of autonomy of EPPS profiles from those who signed up for an experiment labeled "perception". (Newman, 1957.)

Ellis (1975) found no statistically significant differences on EPPS profiles between volunteers who signed up for an experiment labeled "psychological" and an experiment labeled "personality".

In the same study, Ellis (1975) found that students who volunteered for an experiment scheduled in the late afternoon scored significantly higher on endurance and nurturance than those who volunteered for an experiment scheduled early in the morning, as measured by the EPPS. Effects of time of day on volunteering behavior have received so little attention in the literature that it is felt further investigation is warranted.

It is the purpose of the present investigation to measure what effect, if any, time of day and label of experiment have on the selection of a population of subjects who volunteer for psychological research.

Researchers aware of the possible biases created by labels of their experiments and time of day subjects are required to volunteer their time can account for these variables and develop more reliable research designs.

Hypotheses

To facilitate the treatment of this data, the hypotheses are stated in the null form.

Major Null Hypothesis

Personality profiles of volunteering students enrolled in psychology classes at Appalachian State University, spring semester, 1976, do not differ significantly as a result of choice of labels of experiment or choice of time of day.

Null Subhypotheses

The major null hypothesis is outlined in the following null subhypotheses:

1) There is no statistically significant difference in Guilford-Zimmerman Temperament Survey profiles of students who volunteered for an experiment at 8:00 a.m. versus an experiment at 4:00 p.m.
2) There is no statistically significant difference in Guilford-Zimmerman Temperament Survey profiles of students who volunteered to participate in experiments labeled A) emotional stability, B) sex-role identification, C) shyness/social-interest, and d) objectivity/subjectivity.

Assumptions and Limitations of the Study

For the purpose of this study, the following assumptions and limitations are given:

Assumptions

1) That the instrument used in this investigation was adequate to determine the personality traits of student volunteers.
2) That the student volunteers answered the questions on the instrument candidly.

Limitations

1) The study was limited to 80 student volunteers who were enrolled in undergraduate psychology classes at Appalachian State University, spring semester, 1976. Forty students who originally signed up to volunteer did not show up at the time and place of the experiment. They were thus excluded from the study.
2) The data-gathering procedures of the instrument used are limited in their sensitivity and ability to ascertain the facts.
3) The conclusions of the investigation are based on the data collected in the study and are limited to populations similar to the population from which the volunteers for this study were drawn.

Chapter II

Review of Literature

One essential aspect of the research process is the nature of the person who supplies data: the human subject. The common conception of the human subject seems to be that he functions as "a stimulus-response machine: you put a stimulus in one of the slots and out comes a packet of reactions." (Burt, 1962, p. 232.)

However extreme this example may seem, it reflects a concern researchers have raised about the nature of the volunteer subject in psychological research. Much has been written about the subject's changing role in psychology's history and the subject in contemporary psychology. The literature was reviewed under the following headings:

1) Historical Perspective of the Human Subject in Psychological Research
2) The Subject in Contemporary Psychology

Historical Perspective of the Human Subject in Psychological Research

The subjects (or, more properly, observers) who served in the laboratories of Wundt and Titchener bear little resemblance to today's subjects. First, they were either psychologists themselves or psychologists in training (graduate students). As such, they were probably highly motivated in their roles as observers; surely, one would have had to be to perform the complex and time-consuming introspections

required in that era. They were well trained for their task, having undergone long apprenticeships, and they knew exactly what to look for and what errors to avoid. Boring (1953) noted that observers in the Leipzig reaction experiments were required to perform some 10,000 introspective reactions before they were considered capable of providing data worthy of publication. Thus, the early subjects were highly skilled and motivated to pursue what Titchener called the "hard introspective labor". (Schultz, 1968.)

Binet (1894) noted that "the aptitude for introspection is not given to everyone; some possess it in high degree; these are the born psychologists (p. 18)."

It was thought then that there was a disposition for psychological research. Precisely what constituted this disposition was never made explicit beyond describing it as specific habits, attitudes, and characteristics of mind. Presumably, however, a master introspectionist would recognize this ability. (Schultz, 1968.)

By 1912, perhaps because of a shortage of "born psychologists," Titchener modified the requirement of a disposition for introspection, noting that "any normal person, coming to the task with good will and application, may understand and acquire (it) (p. 446.)." Thus, a person could be trained to be properly introspective. This training, Titchener argued, was similar to the kind of training required for reliable observation in biology or physics.

One of Titchener's contemporaries, James Mark Baldwin, pioneered the use of untrained and unpracticed subjects. In contrast to Titchener's

structuralist position, Baldwin advocated the new American spirit of functionalism.

This functionalist spirit or attitude was able to accommodate the notion of individual differences; indeed it fostered an active psychology of individual differences under the leadership of James McKeen Cattell. Where the structuralists Wundt and Titchener searched for general laws of the human mind, the functionalists were interested in studying the minds of untrained observers. Thus they could turn to naive subjects from the college and general populations. Earlier, a precursor of functional psychology, Sir Francis Galton, used naive subjects from the general population in his famous anthropometric laboratory. These subjects even paid for the privilege of being tested.

The functionalists' concern for individual differences brought about a change in the kind of human subject studied from the trained, well-practiced professional of Titchener to the untrained and naive amateur of Cattell and other functionalists.

There was another change taking place also, and that had to do with the decline of introspection with an attendant demotion in status of the human subject from the observer to the one being observed. In the early years of this century, dissatisfaction was being expressed over introspection in this country. For example, G. Stanley Hall in 1910 said that "formerly everyone supposed that the self observation was the oracle and muse of philosophic studies. Now, however, it is coming to be seen that this method gives us access to a very small part of the soul (p. 612.) Hall urged the use of natural-history methods

involving careful observation and descriptions of the actions of other people.

Even before John B. Watson and his behaviorist manifest of 1913, there was a decided tendency of many American psychologists toward greater objectivity. Schultz (1968) reports that much research was conducted in the early 1900's without recourse to introspection. Many of the subjects used in these studies were those most readily available--the undergraduate and graduate students.

Schultz (1968) further reports completing with a sharp finality the move away from classical introspection and toward the more exclusive use of the experimental observation of a behavior was behaviorism. And it was this that brought about the total change of role of the human subject. With behaviorism, the true observer is the experimenter who observes the responses of the subject to the conditions the experimenter has set up. Thus the human subject was demoted in status--he no longer observed; he merely behaved and became the object of observation.

The Subject in Contemporary Psychology

In reading the journals, one receives the distinct impression that the only kind of people of interest to psychologists are college students. If college students were truly representative of the population at large, there would be no problem in generalizing with the results of our studies.

The fact that college students are our primary focus of research has a number of important and sobering consequences. For example,

approximately 80% of our research is performed on the 3% of our population currently enrolled in college (The United States Department of Commerce, 1967). Regardless of how much our college enrollment may increase, college students most likely will never be really representative of the total adult population in terms of level of intelligence alone. Further, this pronounced emphasis on college students means that most of our research is conducted with a very young group, primarily of the ages 18 to 24.

There is also the problem of social class representation, for, as Smart noted, the college student population contains mostly the upper and middle class people and fewer lower class people than the general population.

There is a further biasing effect in much of our psychological research that further limits the degree of generalizability of our findings. While some students are acqired to serve a subjects as part of their course work, others voluntarily agree to serve. Those who do volunteer to serve as subjects do so for a variety of reasons. (Orne, 1962), Reicken (1962), and Rosenthal and Rosnow (1969) suggested several reasons such as pay, course credit, the opportunity to learn something about oneself, and a desire to contribute to science. Among volunteers for a sensory-deprivation experiment, Jackson and Pollard (1966) reported that 50% of the subjects said they volunteered out of curiosity, 21% for the money (1.25 per hour), and only 7% to help science. Rosenthal and Rosnow noted that psychology majors appear to have a higher volunteer rate than non-psychology majors.

Differences in actual past performance as a result of function of the reason of volunteering, remain to be determined. It seems plausible to suggest that a subject volunteering in the hope of learning something about himself might perform differently from one volunteering for a course credit.

Rosenthal found that certain personal attributes were likely to be associated with a higher level of volunteering. He concluded that volunteers tend to have a greater intellectual ability, interest, and motivation; greater unconventionality; lower age; less authoritarianism; greater need for social approval; and greater sociability (1965, pp. 403-404).

Thus, there is strong reason to suspect that in studies using only volunteer subjects, these subjects probably differ in various ways from those who do not volunteer. At the very least, this seems to violate the requirement of random sampling and thus places limitations on the statistical procedures used to analyze the data.

It might also be suggested that volunteers perform in the experimental situation in different ways than non-volunteers as a function of their different personality characteristics. For example, Rosnow and Rosenthal (1966) reported exploratory research which suggested that volunteers, because of their greater need for social approval, were more highly motivated than non-volunteers to verify the experimenter's hypothesis (or at least their interpretation of the hypothesis).

Offering one's services as a subject in a psychological experiment is not a random event. Volunteering is not, of course, independent

of either the task for which volunteering is solicited or the situation in which the request is made. Staples and Walters (1961) found that subjects who had been threatened with electric shocks were less willing to volunteer for subsequent experiments involving the use of shock. Nor was it too surprising to find that rates of volunteering might be increased by making the alternative to volunteering rather unattractive. Conversely, rates of volunteering could be decreased by making the alternative to volunteering more attractive (Blake, Berkowitz, Bellamy, and Mouton, 1956). Rates of volunteering could also be manipulated by varying the intensity of the request to participate as well as the perception of the likelihood that others in a similar situation did or would volunteer (Rosenbaum and Blake, 1955; Rosenbaum, 1956; Schachter and Hall, 1952).

Rosenthal points out that very few studies have employed more than one task for which to solicit volunteers, so that little is known about the effects of the specific task either on the rate of volunteering to undertake it or on the nature of the relationship between the volunteering and the personal characteristics of the volunteers. Newman (1957) did employ more than one task in a study. His subjects were asked to volunteer for both the personality and perception experiments, but he found no systematic effects of the two tasks on the relationship between the variables he investigated and the act of volunteering. Martin and Marcross (1958) employed four tasks in which the volunteering was requested. They found greater differences between volunteers and non-volunteers for their hypnosis experiments than were found between

the two groups for experiments in learning attitudes to sex and personalities. These findings should serve as a warning, however, that any of the characteristics of volunteers may be a function of a particular situation for which volunteering was requested (Rosenthal, 1968).

Since it would be desirable to be able to speak about the characteristics of volunteers for a generalized psychological experiment, a special effort was made to find studies wherein the request for volunteers was quite non-specific. Several of the studies discussed met the specifications. In these studies, requests were simply for participation in an unspecified psychological experiment. Composition of these characteristics of volunteers for the more general situation were differentiating characteristics obtained for other task requests again revealed no systematic differences (Rosenthal, 1968).

Summary

A review of literature concerning the subject both in the history of psychological research and in contemporary studies has been examined. Beginning in the laboratories of Wundt in 1879, volunteer subjects were extensively trained to participate in experiments. This tradition continued with Titchener but changed to a certain degree with the Titchener-Baldwin debates. Baldwin favored the use of untrained and unpracticed observers.

Baldwin's fundamentalist spirit was to motivate an active psychology of individual differences under the leadership of James McKeen Cattell. Cattell, taking the lead from Baldwin and from Sir

Francis Galton, brought about a change in the kind of human subject studied. With John B. Watson and the birth of behaviorism, psychological investigation made the full turn to objective measures of behavior as the criteria for experimentation.

Studies of significant contributions in research on volunteering behavior were reported. It became necessary after a review of literature that a design for the study of effects of often-overlooked variables be made and tried.

Chapter III

Procedures

In this chapter the subjects of the study are defined, the procedures are presented, the instruments used in the study are described and the statistical techniques employed to treat the data are explained.

Subjects of the Study

The subjects were eighty male and female students enrolled in undergraduate psychology classes at Appalachian State University, spring semester, 1976. All subjects received academic credit for participating in the study in accordance with department policy.

Instruments used in the Study

The instrument used in the study was The Guilford-Zimmerman Temperament Survey. The following information on reliability, norm data, validity, and attribute definitions is abstracted, and/or paraphrased from the publisher's manual.

Introduction

The Guilford-Zimmerman Temperament Survey was constructed with the following objectives in mind: (1) a single booklet of items; (2) a single answer sheet; (3) an efficient scoring method; (4) a coverage

of the traits proven to have the greatest utility and uniqueness; and (5) condensations and omissions of trait scores where intercorrelations are sufficiently high.

Reliability

Estimates of the total score reliabilities were made in various ways, based upon samples of 523 college men and 389 college women. Kuder-Richardson formulas were applied to the data for men and women separately and combined. Odd-even and split half correlations were obtained for a random sample of 100 men. Results obtained yielded an average reliability coefficient for the traits of .81 and a standard error of 2.5 units from the obtained score.

Norm Data

The scores upon which the norms are based were obtained from 523 college men and 389 college women in one Southern California University and two junior colleges for all except trait T, which was introduced into the survey later. The male sample included many veterans; consequently the age range for them was from 18-30, with a mean of about 23. The survey was administered as a class exercise for which the incentive was that each student would later be told his scores. The final form of the Survey was administered, with the T items included to a group of seniors in a Southern California high school and to their parents. It was found that there was no significant differences in mean scores of

parents and their high school offspring; so they were combined for norm purposes.

Validity

The internal validity or factorial validity of the scores is fairly well assured by the foundations of factor-analysis studies plus the successive item analyses directed toward internal consistency and uniqueness. It is believed that what each score measures is fairly well defined and that the score represents a conformed dimension of personality and a dependable descriptive category.

Attribute Definitions

G - GENERAL ACTIVITY. A high score indicates strong drive, energy, and activity. Low scores indicate less drive, energy and activity.

R - RESTRAINT. Low scores indicate a happy-go-lucky, carefree, impulsive individual. High scores indicate an over-restrained, over-serious individual.

A - ASCENDANCE. High scores indicate a need to dominate or direct the actions of others while lower scores indicate a need on the part of the individual to be dominated or to have his/her actions directed by others.

S - SOCIABILITY. High and low scores indicate the contrast between the person who is at ease with others, enjoys their company and readily establishes intimate rapport, versus the withdrawn, reserved person who is hard to get to know.

E - EMOTIONAL STABILITY. A high score indicates optimism and cheerfulness, on the one hand, and emotional stability on the other. A score here that is very high, however, if coupled with a low G score, may indicate a sluggish, phlegmatic, or lazy individual. A very low score is a sign of poor mental health in general; in other words, a neurotic tendency.

O - OBJECTIVITY. High scores mean less egoism; low scores mean touchiness or hypersensitivity. A too high score might mean that the person is so insensitive himself that he cannot appreciate the other fellow's possible sensitiveness. He may, consequently, hurt the other fellow unwittingly.

F - FRIENDLINESS. A high score may mean lack of fighting tendencies to the point of pacifism, or it may mean a healthy, realistic handling of frustrations and injuries. It may also mean an urge to please others, a desire to be liked. A low score means hostility in one form or another. At best, it means a fighting attitude. If kept under good control, in many situations this can be a favorable quality. Among the low-scoring individuals on F are those who like to dominate for the satisfaction it gives or for its compensatory value. In positions of authority, these persons are likely to stimulate friction, fear, and low morale in their associates and among their supervisors.

T - THOUGHTFULNESS.

P - PERSONAL RELATIONS. Of all the scores, this one has consistently correlated highest with all criteria involving human relations. It seems to represent the core of "getting along with others" whether on

the same or on a different level of organizational hierarchy. A high score means tolerance and understanding of other people and their human weaknesses. A low score indicates fault-finding and criticalness of other people and of institutions generally. The low-scoring person is not likely to "get along with others."

M - MASCULINITY. On the positive side, a high raw score in this trait means that the person behaves in ways characteristic of men and that he is likely therefore to be better understood by men and to be more acceptable to them. If the M score is very high, it may mean that the person is somewhat unsympathetic and callous. He may, on the other hand, be attempting to compensate for some feminine tendencies or for feelings of weakness in traits other than M. Women who score toward the masculine end of this dimension may have had masculinizing experiences through long association with the opposite sex or they may be rebelling against the female role and attempting to play the male role.

This score shows a very high discriminatory index for sex membership. Its point biserial correlation with sex membership is estimated to be .75, based upon the sample of 912. This information is offered not because an index is needed to distinguish between the sexes, but as evidence of internal validity for the score.

Procedures for Recruiting Subjects

Subjects were drawn from the population of students who were enrolled in undergraduate psychology classes spring semester, 1976.

All members of the faculty of the Department of Psychology received a written notice of the nature of and times student volunteers were needed. Instructors were encouraged to inform interested students to see the bulletin board titled "Experiments" located on the third floor of Edwin Duncan Hall. The notices were distributed to the instructors fourteen days prior to the running of the first cell. Instructors were requested to award any credit they felt warranted for their students' participation in the study, in accordance with department policy.

Instructors were notified when their students volunteered time by way of the Department of Psychology's "Receipts for Volunteered Time."

The "Experiments" bulletin board was the only place where students could sign up for participation in the study.

Independent and Dependent Variables

The independent variables were of two types: "label" variables and "time" variables. There were four levels of "label" variables. They were (1) emotional stability study, (2) sex role identification study, (3) shyness - social interest study, and (4) objectivity-subjectivity study. There were two levels of "time" variables. They were (1) 8:00 a.m. and (2) 4:00 p.m.

Time and label variables were randomly paired, one time variable and one label variable. The pairs were presented on a plain white 8½ x 11" sheet of paper. The sheets of paper were used as the sign-up sheets. All sheets contained the following information:

Volunteers are needed for:
(label of experiment)
(day), (date), (time)
at
316 Edwin Duncan Hall
appropriate credit for participation in experimental research will be given for your psychology class upon request
Please sign up here:
1-16
The study will require about 45-50 min.

All sign-up sheets were uniform with regard to information given, color of ink and handwriting. All sheets were posted 48-76 hours prior to the scheduled time.

The cells were run every Tuesday and Thursday to eliminate the effects of early in the week and end of the week recruitment. Two cells were run each Tuesday - Thursday until all time and label variables were presented. Then the study was replicated using a latin square design. Thus for the replication all pairs and days were reversed to insure randomization.

When a student would walk up to the experiments board, he/she would have a multiple option decision. The student volunteer would choose from four labels and two times of day at all times. It is the basic assumption of the study that some measurable personality attribute would influence the type (or label) of experiment and the time of day of experiment chosen. Table One presents distribution of subjects by time of day. Table Two presents distribution of subjects by label of experiment. Table Three presents distribution by time of day and label of experiment.

The Experimental Environment

On the day and time each cell was run, the experimenter and volunteer subjects gathered in room 316 Edwin Duncan Hall. Subjects sat around tables and were given slips for receipt of volunteered time and were requested to fill out the required information. The information requested included name, age, sex, type and time of experiment, instructor's name, course for which they wished to receive credit, and date. These slips were gathered and distributed in the appropriate instructors' mail boxes.

G.Z.T.S. answer sheets were then distributed to the subjects. They were requested to furnish the following information to be written on the answer sheet: name, age, sex, date, time of day and label of experiment for which they signed up, and the name of the instructor who referred them to the sign-up sheets.

Test booklets were then distributed. Subjects were told that the G.Z.T.S. was a research instrument and was considered to be a personality inventory for "normal" people. The subjects were told that their profiles would be treated in a most confidential manner and they were asked to reply as candidly as possible. Subjects were given the opportunity to have their individual profiles discussed in small group sessions if they desired. If they wished their profile to be interpreted, they were told to include their mailing address on the answer sheet.

Subjects were then requested to read the instructions on the test booklet and begin. They were told they might leave whenver they completed the test.

Statistical Procedures

The answer sheets were hand scored, and raw scores were coded and transcribed onto computer cards. The levels of independent variables were also coded and punched on computer cards. The data were then subjected to a multivariate analysis of variance (MANOVA) using the MANOVA computer program developed by the Clyde Computing Service, Miami, Florida. The analysis of the data was done at the Appalachian State University Computer Center.

A minimum alpha level of .05 was established as levels of significance and were employed in the rejection or acceptance of the null hypothesis.

Summary of Procedures

Subjects were drawn from the population of students enrolled in undergraduate psychology courses at Appalachian State University, spring semester, 1976. Subjects were recruited by standard 8½ by 11 inch sign-up sheets. Subjects were administered the G.Z.T.S. Results of the survey were treated on CLYDE program performing a multivariate test significance using Wilks Lambda Criterion.

Table I

Distribution of subjects by time of day and label of experiment.

Time of day	Label of Experiment				
	Emotional Stability	Sex Role Identification	Objectivity-Subjectivity	Shyness-Social Interest	Total
8:00 a.m.	8	3	4	6	21
4:00 p.m.	24	10	6	19	59
TOTAL	32	13	10	25	80

Chapter 4

Analysis of Results

The purpose of this study was to determine if any significant difference in personality attribute existed among volunteer subjects who volunteered to participate in experiments with various labels at various times of the day. The labels were: (1) emotional stability study; (2) sex role identification study; (3) objectivity-subjectivity study; and (4) shyness-social interest study. The times of day were (1) 8:00 a.m. and (2) 4:00 p.m.

The label of experiment variables and time of day variables were considered the independent variables and subjects' performance represented as means and standard deviations on the 10 scales of the Guilford-Zimmerman Temperament Survey to be the dependent variables.

For the purpose of treating the data statistically, the null hypothesis was employed. The major null hypothesis is outlined in the following null subhypotheses:

(1) There is no significant difference in Guilford-Zimmerman Temperament Survey profiles of students who volunteered for an experiment at 8:00 a.m. versus an experiment at 4:00 p.m. (2) There is no significant difference in Guilford-Zimmerman Temperament Survey profiles of students who volunteered to participate in experiments labeled (a) emotional stability study, (b) sex role identification, (c) shyness/social-interest, and (c) objectivity/subjectivity.

The Guilford-Zimmerman Temperament Survey (G.Z.T.S.) was employed to ascertain a measure of student volunteers' personality traits.

The raw scores were treated by univariate tests to determine variability within each of the major subhypotheses and both subhypotheses taken together. The results of these univariate F tests are displayed on Table 4 (time of day variables) Table 5 (label of experiment variables) and Table 6 (time of day and label of experiment variables collectively).

Criteria for significance on the univariate F tests was predetermined to be .05 or better.

Analysis of Table 2 showed that no G.Z.T.S. attribute fell into the range of significance on time of day variables.

Observation of Table 3 showed that four G.Z.T.S. attributes fell into the range of significance on label of experiment variables. Significance appeared on the General Activity, restraint, social interest and personal relations attributes of the G.Z.T.S.

Observation of Table 4 showed significance on one attribute of the time of day and label of experiment variables considered collectively. This attribute was restraint.

Table 5 presents the means and standard deviations for time of day variables. It is from this table that the specific attributes that affected significance can be observed. J. P. Guilford (1965) has written that significance of this nature may be inferred from F tests and observation of tabular results as accurately as from further statistical treatment.

TABLE 2

UNIVARIATE F TESTS ON

TIME OF DAY VARIABLE

Variable	UNIVARIATE F TESTS F value	Probability Less Than
General Activity	0.002	0.96
Restraint	0.538	0.51
Ascendance	0.531	0.46
Social Interest	2.664	0.12
Emotional Stability	0.046	0.82
Objectivity	1.321	0.25
Friendliness	0.468	0.50
Thoughtfulness	3.587	0.06
Personal Relations	1.946	0.20
Masculinity - Femininity	0.292	0.59

* p .05
** p .01

TABLE 3

UNIVARIATE F TESTS OF LABEL OF

EXPERIMENT VARIABLES

Variable	UNIVARIATE F TESTS F value	Probability Less Than
General Activity	3.418	0.022 *
Restraint	3.892	0.012 *
Ascendance	0.875	0.458
Social Interest	3.325	0.024 *
Emotional Stability	0.228	0.877
Objectivity	0.205	0.893
Friendliness	1.386	0.254
Thoughtfulness	1.030	0.384
Personal Relations	4.339	0.007 **
Masculinity - Femininity	0.966	0.414

* p. .05
** p. .01

TABLE 4

UNIVARIATE F TESTS OF TIME OF DAY

AND LABEL OF EXPERIMENT VARIABLES

Variables	UNIVARIATE F TESTS F value	Probability Less Than
General Activity	1.729	0.169
Restraint	4.830	0.004 **
Ascendance	0.312	0.817
Social Interest	1.306	0.279
Emotional Stability	0.633	0.596
Objectivity	1.723	0.170
Friendliness	0.688	0.562
Thoughtfulness	0.501	0.683
Personal Relations	0.781	0.508
Masculinity - Femininity	0.654	0.583

* p. .05
** p. .01

Table 5

MEANS AND STANDARD DEVIATIONS

Factors	No. of Subjects		VARIABLES: Gen. Activity	Restraint	Ascendance	Social Interest	Emot. Stability	Objectivity	Friendliness	Thoughtfulness	Per. Relations	Masc. - Fem.
8:00 A.M. Emotional Stability Study	8	Mean	18.375	13.500	14.500	22.000	15.000	16.250	16.250	17.125	11.250	14.000
		S.D.	6.140	3.742	6.525	4.440	4.504	4.743	4.301	3.523	3.615	6.503
8:00 A.M. Sex Role Identification Study	3	Mean	17.000	18.33	14.333	21.000	14.000	9.333	13.000	21.000	10.000	10.667
		S.D.	9.644	3.786	10.693	7.550	6.245	5.508	4.583	1.000	2.646	3.786
8:00 A.M. Objectivity-Subjectivity Study	4	Mean	13.500	15.000	13.500	19.000	14.000	10.750	16.000	18.250	14.000	8.250
		S.D.	3.000	2.828	7.937	4.967	5.888	4.717	6.377	4.924	4.082	6.397
8:00 A.M. Shyness Social Interest Study	7	Mean	18.000	14.286	15.714	21.143	16.429	12.000	12.286	15.286	10.571	9.571
		S.D.	3.512	3.302	3.302	4.140	5.912	7.394	6.651	7.387	4.995	6.321
4:00 P.M. Emotional Stability Study	24	Mean	15.250	16.375	12.833	15.792	15.125	14.042	15.417	19.083	11.167	12.125
		S.D.	4.504	3.797	5.932	6.613	4.100	4.841	4.403	4.159	4.622	5.416
4:00 P.M. Sex Role Identification Study	10	Mean	21.700	10.000	16.500	23.200	16.300	14.400	13.000	20.400	13.200	13.300
		S.D.	3.743	4.422	5.642	5.073	4.773	3.777	3.651	3.978	2.860	5.143
4:00 P.M. Objectivity-Subjectivity Study	6	Mean	16.167	18.500	12.167	15.833	15.500	16.333	18.000	20.167	18.333	11.333
		S.D.	6.113	7.007	4.021	7.653	8.044	7.005	6.132	4.215	2.422	6.346
4:00 P.M. Shyness Social Interest Study	18	Mean	17.778	16.167	13.500	20.444	13.389	14.722	15.889	19.000	13.167	10.889
		S.D.	5.001	3.666	5.732	6.845	7.625	6.378	6.579	4.379	5.182	5.614

Guilford's (1965) procedure of F test and observation of tabulated means and standard deviations was employed. Four statistically significant attributes high general activity, low restraint, high social interest, and high personal relations were found on the label of experiment variable sex role identification.

The low restraint attribute which appeared on the time of day and label of experiment variables taken collectively is attributable to the sex role identification label variable. The results of this study indicate that null subhypothesis was accepted.

There is no statistically significant difference in G.Z.T.S. profiles of students who volunteered for an experiment at 8:00 a.m. versus at 4:00 p.m.

Null subhypothesis 2: This subhypothis was rejected at the .05 level. That is: There is no statistically significant difference in G.Z.T.S. profiles of students who volunteered to participate in experiments labeled (a) emotional stability, (b) sex role identification, (c) shyness/social-interest, and (d) objectivity/subjectivity. Students who volunteered for a sex role identification study showed significantly higher general activity, lower restraint, higher social interest and higher personal relations on G.Z.T.S. profiles than those who volunteered for other labels of experiments.

Chapter 5

Summary, Conclusions and Recommendations

Chapter 5 presents a summary of the study, conclusions drawn for the analysis of the data and recommendations based on the results of the statistical analysis of the data and overall findings of the data.

Summary

The purpose of this study was to determine what effect label of experiment and time of day had on volunteering behavior.

Time of day was broken down into early in the day 8:00 a.m. and late in the day 4:00 p.m.

Label of experiment was broken down into (1) emotional stability, (2) sex role identification, (3) shyness/social-interest, and (4) objectivity/subjectivity.

The 80 volunteers were recruited by 8½ x 11" sign-up sheets that were identical in every way except time and label variables posted on a bulletin board on third floor, Duncan Hall, Appalachian State University, spring semester, 1976.

The G.Z.T.S. was group administered to all volunteers to measure personality attributes.

Data collected on the G.Z.T.S. was treated statistically by a univariate analysis of variance (F tests) and subjected to observation by Guilford's (1965) criteria.

Conclusions

1) Persons involved in experimental research using volunteer subjects drawn from the population of undergraduates enrolled in psychology classes should be aware that when subjects have a choice of various labels of experiments, certain subject personality attributes may influence them to select one label of experiment over another.

2) Persons involved in experimental research using volunteer subjects drawn from the population of undergraduate students enrolled in psychology classes should be aware that no literature reviewed or data collected in this study suggests that subject personality attributes influence choice of time of day when offered several times of day to participate in experiments.

When both null subhypotheses were considered together, the sex role identification volunteers showed significantly lower restraint on G.Z.T.S. profiles.

Rosenthal (1965) concluded that personality attributes such as higher sociability, high social interest, and personal relations were associated with high rates of volunteering. This study contributes to Rosenthal's hypothesis by showing that volunteers with these attributes not only volunteer frequently but are likely to choose one type of experiment over another.

Newman's 1957 study only offered two choices of experiment, those being perception study and psychological investigation.

This writer feels that he has only scratched the surface of a

new area of social psychology in natural settings. This natural setting is the environment surrounding a psychology department of a major state supported university.

This writer felt at the onset the most accurate method to use in determining personality attributes of students who volunteer for various labels of experiments was to take labels of attributes directly from the instrument used. This writer felt that this method would eliminate possible extraneous variables that could account for differences in personality attributes.

The subjects of Fichner and Wuant were highly trained and sophisticated. This writer feels that today nearly one hundred years after Fichner and Wuant that scientific investigations look at the volunteer who contributes to his/her findings in psychology. The volunteer subject, after all is considered as the primary resource that psychological investigators depend on.

Recommendations

Based upon the results of this study the following recommendations are made:

(1) That a replication of this study be conducted at a future date with refinement of labels of experiment and another personality inventory in the hope of identifying other personality attributes that may affect volunteering behavior.

(2) That future research should be planned to: 1) increase the number of subjects in each of the eight cells; 2) eliminate the

possible extraneous variable that could have arisen in this study where volunteers may have chosen one label of experiment or time of day over the others because the alternative choices conflicted with a scheduled class; 3) find another instrument that would be more sensitive to personality attributes that could affect experimental performance behavior; 4) determine time during a particular semester (first week of a semester, week before mid term or final exams) that a different population would be most likely to volunteer; 5) determine if the results of this study are specific to undergraduates enrolled in psychology classes or are generalizable to undergraduates enrolled in classes in other departments; 6) determine if the place on campus where volunteers sign up affects the population sampled.

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