

INCREASING PERSONAL RELEVANCE
AS A MEANS OF ENHANCING
ACADEMIC PERFORMANCE;
AN EMPIRICAL STUDY

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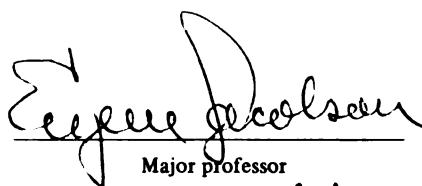
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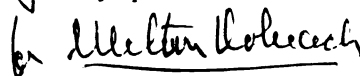
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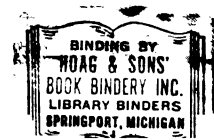
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ABSTRACT

INCREASING PERSONAL RELEVANCE AS A MEANS OF ENHANCING ACADEMIC PERFORMANCE: AN EMPIRICAL STUDY

By

James Ruskin Lundy

In this research, Rokeach's (1968) theory of the structure and dynamics of beliefs, attitudes and values was used to formulate an investigation of the relationship between increased personal relevance and academic performance. Personal relevance was operationally defined as the characteristic taken on by information given to a student when this information concerned variables about which he already possessed knowledge concerning himself. Given this definition of personal relevance, Rokeach's (1968) theory was used to generate a general hypothesis that students exposed to information about their standing on variables to be covered in an undergraduate course in social psychology would exhibit enhanced academic performance to a greater degree than would students not so exposed.

This general hypothesis was tested in four specific

ways: students who are exposed to information about their standing on particular variables that will be covered in the content of an undergraduate course in social psychology will (I) report the content of the course as being more personally relevant than will students not so exposed, (II) achieve higher scores on an objective final examination than will students not so exposed, (III) perform more satisfactorily on certain unobtrusive measures--days missed, questions asked in class discussion, number of reserve books checked out, and number of tutorials attended--than will students not so exposed, and (IV) achieve higher scores on an essay-type examination given six months after the finish of the course than will students not so exposed.

In order to test these hypotheses, two investigations were conducted. The first study was a pilot carried out in order to determine the feasibility of the experimental procedures for use in a small college setting and to uncover data confounding sources of bias. An analysis of the data from this study supported the predictions contained in hypotheses I and II; no attempt was made to test hypotheses III and IV in Study Number One.

Study Number Two dealt with thirty-six students enrolled for the first time in an undergraduate course in social psychology. These subjects were randomly selected and randomly partitioned into three equal groups: experimental group 1, experimental group 2, and a control group.

Experimental group 1 was exposed to information about their standing on variables that would be covered during the course of the term. Experimental group 2 was allowed to respond to the instruments used to measure the variables but they did not have their tests scored. The control group received neither of these treatments. The influence of the experimental treatment was determined by comparing the subjects' responses to an end-of-course questionnaire (to test hypothesis I), their scores on a one hundred item multiple choice examination (to test hypothesis II), their performance on the four unobtrusive measures (to test hypothesis III), and their scores on an essay-type examination administered approximately six months after the end of the course (to test hypothesis IV).

Analysis of the data from Study Number Two clearly supported the assertions contained in hypotheses I, II, and IV. Hypothesis III was partially confirmed: students who were in experimental group 1 did ask more questions during class discussion. There were no significant differences between the groups as to days missed from class, number of reserve books checked out, or number of tutorials attended; however, the obtained differences were in the directions predicted.

On the basis of the findings from these two investigations, it was suggested that academic performance in undergraduate courses in social psychology can be enhanced

by increasing the personal relevance of the content of the course. One way that can be used to increase personal relevance is to expose students to information about their standing on variables that will be covered during the progress of the course. It was further suggested that increased personal relevance enhances achievement on examinations over a longer time span than is typically measured and that increased personal relevance tends to enhance academic performance in areas other than those measured by achievement test scores.

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AN EMPIRICAL STUDY

By

James Ruskin Lundy

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TABLE OF CONTENTS

	Page
LIST OF APPENDICES	iv
LIST OF TABLES	v
Chapter	
I. INTRODUCTION	1
Theoretical Basis of Research	2
Review of Literature	9
Hypotheses	15
II. METHOD	16
Overview	16
Study Number One	18
Subjects	18
Instruments Used	19
Procedure	22
Analysis Technique	25
Study Number Two	25
Subjects	27
Instruments Used	28
Procedure	30
Analysis Technique	36
III. RESULTS	39
Study Number One	40
Hypothesis I	40
Hypothesis II	42
Study Number Two	43
Hypothesis I	44
Hypothesis II	47
Hypothesis III	54
Hypothesis IV	61

Chapter	Page
IV. DISCUSSION	63
Summary	63
Study Number One	67
Study Number Two	70
Conclusions	75
Implications	79
REFERENCES	83
APPENDICES	88
A. The one hundred item multiple choice examination used in both Study Number One and Study Number Two	88
B. Essay examination administered as part of Study Number Two	101
C. Script used during experimental treat- ment sessions in Study Number One and Study Number Two	103
D. Assignment sheet used in both Study Number One and Study Number Two	114
E. Comparison of means of experimental group and control group in Study Number One	116

LIST OF TABLES

Table	Page
1. Means, variances and standard deviations of the experimental and control groups' responses to the "personal relevance" item--Study Number One	41
2. Means, variances, and standard deviations of the experimental and control groups' scores on a 100 item multiple choice final examination--Study Number One	43
3. Means, variances and standard deviations of the two experimental groups' and the control group's responses to the "personal relevance" item--Study Number Two	45
4. Summary of analysis of variance of responses made to the personal relevance item by experimental group 1, experimental group 2 and the control group--Study Number Two . . .	45
5. Means, variances and standard deviations of the two experimental groups' and the control group's scores on the 100 item multiple choice final examination--Study Number Two . .	49
6. Summary of analysis of variance of scores achieved on the 100 item multiple choice examination by experimental group 1, experimental group 2 and the control group--Study Number Two	50
7. Means, variances and standard deviations of the two experimental groups' and the control group's scores on the objective final examination with the loaded items disregarded--Study Number Two	52

Table	Page
8. Summary of analysis of variance of scores achieved on the multiple choice examination, with the loaded items disregarded, by experimental group 1, experimental group 2 and the control group--Study Number Two	52
9. Summary of means of the two experimental groups' and the control group's scores on the objective final examination, the objective final examination with the loaded items disregarded, and the loaded items scored independently--Study Number Two	53
10. Means, variances and standard deviations of the two experimental groups' and the control group's number of days missed with the summary of analysis of variance performed on this data--Study Number Two	56
11. Means, variances and standard deviations of the two experimental groups' and the control group's number of questions asked in class discussion with the summary of analysis of variance performed on this data--Study Number Two	57
12. Means, variances and standard deviations of the two experimental groups' and the control group's number of reserve books checked out with the summary of analysis of variance performed on this data--Study Number Two . . .	58
13. Means, variances and standard deviations of the two experimental groups' and the control group's number of tutorials attended with the summary of analysis of variance performed on this data--Study Number Two	59
14. Means, variances and standard deviations of the two experimental groups' and the control group's scores on an essay type examination administered six months after the end of the course with the summary of analysis of variance performed on this data--Study Number Two	62

CHAPTER I

INTRODUCTION

One of the major complaints during recent campus protests has been the irrelevance of the college curriculum to the needs and wants of the student (Blackburn, 1969; MacLeish, 1969; Woodring, 1968). These complaints suggest that an increase in relevance of course content would be a desirable objective; however, the question arises as to what would be the specific outcome of an increase in personal relevance of the college curriculum. Apparently one hoped for result of an increase in personal relevance would be an enhancing of the students' academic performance.

The purpose of this research is to investigate the effects upon academic performance of providing undergraduate social psychology students with material that increases the degree of personal relevance that the course has for them. There have been a number of studies which have demonstrated the importance of non-intellectual factors upon academic performance (Briney and Taylor, 1959; Fricke, 1956; Garret, 1949; Garverick, 1964; Neidt and Hedlund, 1967; Stein, 1963; Wooford and Willoughby, 1968). However, the use of personal relevance as an independent variable is a

relatively neglected aspect of research on factors influencing academic performance.

Theoretical Basis of Research

In his article, "A Social Psychology of Education," Getzels (1969: 459) comments that "it is a peculiar fact that until recently education seems to have been omitted from the systematic theoretical and empirical concerns of social psychologists." This research is an effort to make some progress at correcting this omission; that is, this experiment will attempt to make use of both the body of knowledge particular to social psychology and the methodology of social psychology in an investigation of certain educational processes at the undergraduate level.

Within this context and because of the lack of precedent noted above, it is necessary to explicitly describe what is meant by personal relevance before giving additional consideration to how this concept will be used in the present research. In general, the theoretical orientation provided by Rokeach (1968 and 1960) will be used in this study; and in particular, his theoretical stance will be the basis for the derivation of a working definition of personal relevance.

It is difficult to imagine an unimportant concern having personal relevance. Therefore, in constructing an operational definition of this term, it is necessary to

consider the question of what constitutes cognitive importance; more particularly, what constitutes cognitive importance for an individual. Rokeach speaks to this question when he describes his theory of beliefs. He considers a belief to be "any simple proposition, conscious or unconscious, inferred from what a person says or does, capable of being preceded by the phrase 'I believe that...'"

(1968: 113). These beliefs are organized into belief systems, and a belief system is defined as "having represented within it, in some organized psychological but not necessarily logical form, each and every one of a person's countless beliefs about physical and social reality" (1968: 2). Rokeach does not see all beliefs as having equal importance; he defines importance "solely in terms of connectedness: the more a given belief is functionally connected or in communication with other beliefs, the more implications and consequences it has for other beliefs, and, therefore, the more central the belief" (1968: 5). Important beliefs, therefore, are those that have a large degree of connectedness.

Rokeach also proposes criteria for evaluating the degree of importance, or connectedness, of beliefs. He notes that "beliefs directly concerning one's own existence and identity in the physical and social world are assumed to have more functional connections..." (1968: 5). Further, Rokeach suggests that "beliefs concerning

existence and self identity...that are shared with others are assumed to have more functional connections and consequences for other beliefs than those not shared with others" (1968: 5). Therefore, the question of what is important cognitively to an individual is answered, at least in part, by this theory; that is, beliefs about the self which are shared with others are important cognitions for any given person.

It follows that any operational definition of personal relevance will have to reflect this conceptualization of cognitive importance. In other words, personal relevance will, in some fashion, be that which concerns beliefs about the self which are shared with others. If "being shared with others" can be taken to mean both beliefs communicated to others by the subject as well as those communicated from another to the subject, then personal relevance may be said to mean the characteristic taken on by beliefs about the self which are communicated to an individual from an outside source. Or, more particularly for this study, personal relevance will refer to the characteristic taken on by information given to a student when this information concerns variables about which he already has beliefs (or knowledge) concerning himself. For example, information about authoritarianism will be personally relevant to a student if he already has knowledge (beliefs) about the degree of authoritarianism in his self

structure.

Further, personal relevance can be conceptualized within the framework of what Rokeach calls "organization and change within value-attitude systems" (1968: 5). Rokeach contends that attitudes are organizations of several beliefs "focused on a specific object...or situation, predisposing one to respond in some preferential manner" (1968: 159). He extends his theoretical structure by conceptualizing values as "an enduring belief that a specific mode of conduct (instrumental value.) or end-state of existence (terminal value.) is...preferable to alternate modes of conduct or end-states of existence" (1968: 160). If and when an individual internalizes a value, Rokeach argues that this value will then function in the following ways: as a standard for directing action, as a criterion for formation and functioning of attitudes, or a means of justification of one's own actions as well as the actions of others, as a basis for making moral judgments, and as a procedure or technique useful in comparing one's own self concepts with the self as perceived within others (1968: 160). As would be expected in a complex environment, an individual is frequently confronted with circumstances in which he cannot take action (or hold beliefs) that are consistent with all of his values; there will be cognitive conflict as two or more values clash with each other. Rokeach notes that this cognitive disharmony

operates such that an individual's value system obtains; "a person's value system may thus be said to represent a learned organization of rules for making choices and for resolving conflicts--between two or more modes of behavior or between two or more end-states of existence" (1968: 161). Thus, personal relevance--the characteristic taken on by information when this information concerns variables about which one already has knowledge concerning himself--will be expected to elicit the use of those "rules for making choices and for resolving conflicts." This surely must be the expectation since it is obvious that the individual will receive information that is in conflict with knowledge already internalized, in conflict, if in no other way, by being characterized as additional or more complex information that will require cognitive work to assimilate.

Personal relevance, therefore, is conceptualized to be a particular instance of what Rokeach describes as the general case in these terms:

Whenever a social object is encountered within a social situation it activates two attitudes, A_o (attitude toward the object) and A_s (attitude toward the situation). Each of these two attitudes activates, in turn, a subject of instrumental and terminal values with which it is functionally connected. Behavior toward a social object within a social situation will therefore be a function of the two activated attitudes, A_o and A_s which, in turn, will be a function of the number and the relative importance of all the instrumental and terminal values activated by A_o as compared with all the instrumental and terminal values activated by A_s (1968: 164).

In particular, when a student is given information concerning variables about which he already had knowledge concerning himself, values are activated such that it is reasonable to predict that inconsistencies will obtain which will result in behavioral change that is characterized as being long remembered, enduring over time and systematic as to produced changes in connected beliefs and attitudes. Using personal relevance as an experimental treatment, as here conceptualized, is a specific example of a unique method advocated by Rokeach for inducing a state of inconsistency between elements within an individual's value-attitude system; that is, personal relevance is a condition whereby a student is exposed "to information about states of inconsistency already existing within his own value-attitude system" (1968: 167). This resultant inconsistency activates a motivation for consistency, "but consistency... defined primarily as consistency with self esteem" (1968: 164). In other words, the motive is to achieve consistency among elements of the value-attitude system having to do with the self structure as well as the importance of that self structure.

With this theoretical conceptualization of personal relevance in mind, it is possible to turn to a consideration of the question of how to increase the influence of personal relevance. Perhaps the most obvious technique to use would be that of providing the student with detailed information

about his standing on certain personality variables. That students are ready and willing to accept information about their self structure has been demonstrated by both Forer (1949) and Ulrich, et al. (1963). Given the definition of relevance being used in this study, the presence of this self-information should operate to make the content of the course increasingly relevant if the variables about which the student now has self-beliefs are discussed, read about, and lectured on during the progress of the course. Since the motivational state conceptualized as being in operation is one that seeks consistency with regard to self cognitions, the motive to seek should produce more involvement with the subject matter of the course.

Therefore, for this research, instruments used to measure certain of the variables studied in an undergraduate course in social psychology will be administered to the students during the first class meetings. Following the scoring of these instruments, they will be returned and explained to the student thereby giving him detailed knowledge about his personal standing on each of these variables. As these variables are considered during the progress of the course, it is predicted that the content of the course will take on increased personal relevance for the student; and, as the content of the course increases in degree of personal relevance, it should follow that the student would increase his degree of participation in the activities of

the course, and consequently, his academic achievement as he works to reduce the inconsistencies that have been called to his attention as already existing within his own value-attitude system.

Review of Literature

The use of tests of academic achievement as the dependent variable in research on instructional procedures and techniques has long been an accepted precedent; McKeachie (1967) flatly states that the ultimate criteria of teaching technique effectiveness must be changes in the student with regard to movement toward educational objectives. However, there are researchers who question the accuracy and sensitivity of these measures of academic achievement. Siegel, et al. (1963) contend that a final examination, even if it is carefully structured in accord with instructional objectives, may reflect learning that occurred in the absence of the influence of the independent variable. But given the undesirableness of complete control of the student, even if such control were possible, this lack of preciseness has to be accepted as a reality of research in the educational setting. Therefore, examinations continue to be the most commonly used dependent variable in research on teaching methods at the college level (McKeachie, 1963).

Faced with the problems inherent in the use of

examination scores as the criterion in experimental comparison of teaching techniques, researchers have turned to other techniques of evaluation. Buenz and Merrill (1968) predicted that the greater the effort required during the training situation for student nurses, the more resistance to extinction of this learning behavior. Their findings support this hypothesis which was generated from the dissonance theory. The theory holds that dissonance, created by effort, is reduced in the individual by his developing "extra attractions" for the learning conditions. This suggests the use of effort expended as an alternative criterion measure. Writing in Unobtrusive Measures: Non-reactive Research in the Social Sciences, the authors note the use of such a measure and comment that "the most fertile search for validity comes from a combined series of different measures, each with its idiosyncratic weaknesses..." (Webb, et al., 1966: 174). The complexities of the criterion problem are not all solved by using examination scores plus other more unobtrusive measures, but the situation is much improved by the addition of these other criteria.

The influence of the desires of the teacher are also a concern to researchers in the area of effectiveness of teaching techniques. If the experimental procedure is performed by the author of the design, he may, as Rosenthal (1966) suggests, subtly bias his subjects in a direction

favorable to his design. Goodwin (1966) and Johnson and Foley (1969) report results that indicate the need for use of safeguards against the experimenter's influencing the responses of the subjects. Johnson and Foley (1960) also offer results that suggest the presence of a placebo effect in research on teaching methods. Their findings were interpreted to mean that when the student believes that his participation in a new teaching method experiment will be a personally valuable experience, he will increase his efforts, and consequently, his performance. Obtaining participation without awareness appears to be one solution to this difficulty.

In spite of the multitude of studies reported (Eckert and Neale, 1965; Gagne and Rohwer, 1969; McKeachie, 1962 are relatively recent reviews of the literature in this area), there appears to be no conclusive and final answer to the question of how best to teach at the college level. Buxton (1956: 363) notes that "we presently know of no one method of instruction which is best for all subject matters or for all instructors." Apparently, the situation has changed little in the last decade if Dubin and Taveggia are correct in their conclusion (Dubin and Taveggia, 1968). These authors examined the data from ninety-one comparison studies of different methods of college teaching and reported that there were no real differences in effectiveness between one teaching method and another. Lee (1967: 1)

made a comment that appears to summarize the situation: "Improving teaching is a continuing concern, an ongoing never-ending enterprise on every college campus. It is imperative that ways to improve college teaching be devised, explored, and appraised. Although solutions to such problems are elusive and consensus is difficult to achieve, a painstaking search obviously is demanded."

Toward such an end Keller (1963) offered a suggestion for a "personal course" in psychology. He noted that a course taught in a "personal" manner would be more productive because the student would find the content of the course more personally relevant. Apparently little has been done that makes use of this suggestion. Blackburn (1969: 6) writes that "the most striking aspect of these interviews is the extent to which they reveal how profoundly students are concerned with themselves, with their own personal and social development." However, he continues, "their courses for the most part touch them only incidentally and apparently not by design." Supporting this criticism, MacLeish (1969: 18) points out that "the relation undergraduates have in mind when they complain, as they do, over and over, that their education does not respond to their needs, preach to their condition...is not relevance to the 'Huntley-Brinkley Report.' It is relevance to their lives, to themselves as men and women living."

What characteristics must a course possess if it is

to be relevant? Maxwell (1969) asked his students this question and reported that relevance of a course can only be evaluated in terms of the unique individual's viewpoint, his goals, aspirations and expectations; in other words, the course that is relevant is one that tells him something about himself. Woodring (1968: 179) supports such a conclusion when he writes that, "the majority of undergraduates find little that is of interest to them or relevant to their life plans....They study psychology not to learn the more sophisticated techniques of laboratory experimentation ...but because they hope to learn something about their own behavior or that of their friends."

This research effort attempts to demonstrate that an undergraduate course in social psychology can be taught in such a way so as to increase the degree of personal relevance that the content of the course holds for those students enrolled in the course. The students will be provided with information about their own self-structure by means of providing them with data concerning their standing on certain of the personality variables that will be covered during the course. As each of these variables are considered in turn, it is predicted that the content of the course will increase in degree of personal relevance. Furthermore, it is predicted that the students for whom the course is increasingly personally relevant will increase their participation in the activities of the course. It is

also expected that those students for whom the course is more personally relevant will achieve a greater degree of academic success as indicated by performance on examinations than students for whom the course is not personally relevant. And, finally, it is expected that those students for whom the course is more personally relevant will retain information gained from the course over a greater span of time than will those students for whom the course is less personally relevant. Astin (1964) makes some observations that are pertinent to this expectation. He advocates distinguishing between conceptual criterion (verbal statements of educational outcomes which are based on the more general purposes of researcher) and criterion performance (observable events which are judged to be indicative of the conceptual criterion). He further argues that changes in a student's examination score (criterion performance) constitute a measure of teaching effectiveness (conceptual criterion) only when the researcher is willing to assume that the student's score is an important variable to be manipulated by the teacher. Obviously this research is done with the belief that a student's test score is an important variable to be influenced by the teacher and his methods. It is not conceptualized as the only variable worth manipulation, but it is considered to be an important variable.

Hypotheses

In specific, this study will test the following hypotheses:

1. Students in an undergraduate course in social psychology who are exposed to information about their standing on particular variables that will be covered in the content of the course will report the content of the course as being personally relevant to a greater extent than will students not so exposed.
2. Students in an undergraduate course in social psychology who are exposed to information about their standing on particular variables that will be covered in the content of the course will achieve higher scores on the objective final examination than will students not so exposed.
3. Students in an undergraduate course in social psychology who are exposed to information about their standing on particular variables that will be covered in the content of the course will perform more satisfactorily on certain "unobtrusive measures" (Webb, et al., 1966) than will students not so exposed.
4. Students in an undergraduate course in social psychology who are exposed to information about their standings on particular variables that will be covered in the content of the course will achieve higher scores on an essay-type examination given six months after the finish of the course than will students not so exposed.

CHAPTER II

METHOD

Overview

In order to test the hypotheses, two investigations were conducted: one during the fall term of 1969 and the second during the fall and spring terms of the 1970-71 academic year.

The first study was a pilot project and involved thirty student subjects enrolled for the first time in an undergraduate course in social psychology offered during the fall term of 1969. These subjects were randomly chosen from the seventy-six students enrolled in the class. The thirty subjects were then randomly divided into two groups: an experimental group which was exposed to information about their own standing on certain variables that were covered in the content of the course and a control group which did not have this exposure. The exposure to the information took place during the first four class meetings. The influence of such exposure was measured by recording both groups' responses to an end-of-course questionnaire and to a one hundred item multiple choice examination. The second group--those not exposed to the information--served as the control group for the first investigation.

The forty-six students not involved in the experiment were not used as a second control group because the statistical analysis techniques used with these data were sample statistics and not population statistics.

The second study dealt with thirty-six students enrolled for the first time in an undergraduate course in social psychology offered during the fall term of 1970. These subjects were randomly selected from the fifty-seven students enrolled in the class and were randomly partitioned into three groups: experimental treatment group 1, experimental treatment group 2, and a control group. Experimental group 1 was exposed to information about their own personal scores on certain variables that were covered during the course of the term. This exposure took place during the first four class meetings. Experimental group 2 was exposed to the instruments used to measure the variables that were covered in the content of the course but they did not take the various tests. The control group received neither of these experimental treatments. The influence of the two experimental treatments, as well as the lack thereof, was determined by noting the subjects' responses to an end-of-course questionnaire, their scores on a one hundred item multiple choice examination, their performance on certain "unobtrusive measures," and their scores on an essay-type examination administered approximately six months after the end of the course; that is, the essay

examination was given at the end of the spring term, 1971.

Study Number One

This study served as a pilot project. This was considered necessary in order to determine if the experimental procedures and instruments were feasible for use in a small college setting and to determine what, if any, procedural difficulties might arise. In this study the experimental treatment was also made as different as possible from the control treatment in order to give any changes in the dependent variable optimal opportunity to be manifested.

Subjects

Thirty undergraduates, both male and female, enrolled for the first time in social psychology at Grand Valley State College, during the fall term of 1969, participated in this study. These subjects were randomly chosen from the seventy-six students initially enrolled in this course. The fifteen students that were randomly assigned to the experimental group were seven females and eight males. The average age of the group was twenty-one years and nine months and their overall grade point average was 2.54 on a four point scale. The control group was comprised of nine males and six females. Their average age was twenty-one years and six months. Their overall grade

point average was 2.46. These descriptive characteristics for each group are not significantly different.

Instruments Used

The textbooks that were used in this course were Principles and Methods of Social Psychology, First Edition by E. P. Hollander and Current Perspectives in Social Psychology, Second Edition by E. P. Hollander and R. G. Hunt. The following books were placed on closed reserve in the library: The Open and Closed Mind by M. Rokeach, Beliefs, Attitudes and Values by M. Rokeach, The Authoritarian Personality by Adorno, et al., Basic Studies in Social Psychology by H. Proshansky and B. Seidenberg, Current Studies in Social Psychology by I. D. Steiner and M. Fishbein, and Theories of Personality, First Edition by C. Hall and G. Lindzey.

Of the many psychological variables covered in the course, the following were chosen as being most useful for this study: authoritarianism, dogmatism, value systems, achievement motive, and certain personality characteristics. During the first four class meetings the following instruments were administered to the subjects in the experimental group, scored, and then returned for purposes of giving the students information about their standing on the variables indicated:

Instrument

The F Scale	authoritarianism
The Dogmatism Scale	dogmatism
The Edwards Personal Preference Schedule	achievement motive
Rokeach's Value Survey Scales	value systems
The Sixteen Personality Factor Test	personality traits

On the first day of class the students were given an assignment sheet and a data sheet to complete. (See Appendix D for format of the assignment sheet.)

The data sheet simply provided a space for the student to give his name, sex, age, grade point average and address.

A one hundred item multiple-choice examination was administered at the regularly scheduled time during the final examination period. The test that was used, along with the correct answer for each item, appears in Appendix A. The reliabilities of these test items were found to be between .61 and .82 when administered to one hundred and sixty-eight social psychology students who took the course in the fall term of 1968. These reliability indices were determined by correlating the odd and even items and correcting by the Spearman-Brown formula (Lindquist, 1953: 361).

Certain items on this test were designed to measure

the recognition knowledge the student had at his command concerning the particular variables used in the experimental treatment. These were questions 3, 5, 6, 9, 10, 12, 15, 18, 20, 25, 30, 35, 40, 45, 50, 60, 65, 70, 75, 80, 85, 90, 95, 100. These twenty-five items make explicit reference either to the instruments used in the experimental treatment or to the variables measured by these instruments.¹

A simple questionnaire was also administered at the same time the final exam was given. This device contained several cover questions as well as a question designed to measure the degree of personal relevance the course held for each student. This questionnaire was attached to the final examination and had the following format:

Course Evaluation

Please place an "X" at the point on the continuum that best expresses your response to each question. Please be as candid as possible in your answers.

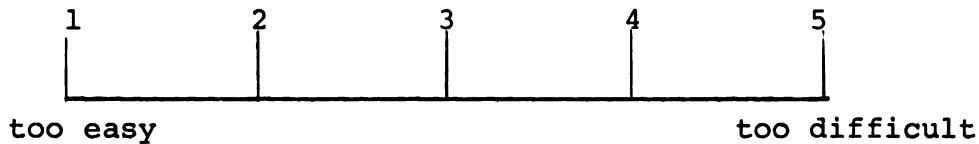
1. What do you think of the lectures?

1	2	3	4	5

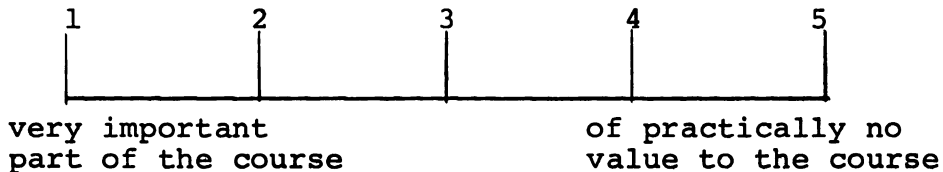
very helpful				almost useless

¹Each item was mentioned twice during the course of the lectures given during the term. This insured equal exposure of this particular material to all subjects, and this procedure was followed in both Study Number One and Study Number Two.

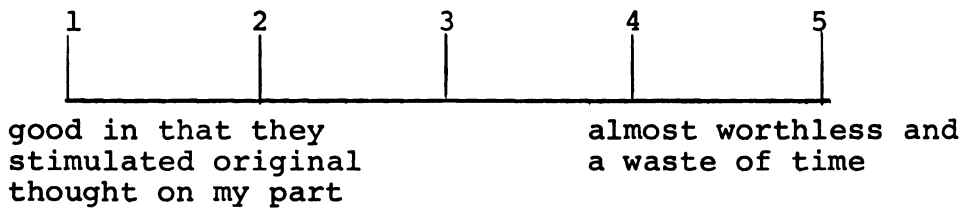
2. What is your opinion of the multiple choice final exam?



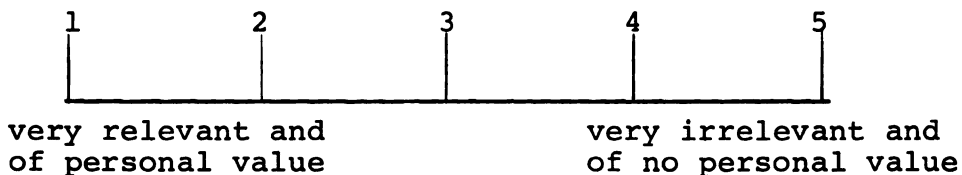
3. How would you evaluate the discussions that took place from time to time in the class?



4. What is your opinion of the textbooks used in this course?



- 5.¹ What is your opinion of the content of the course taken as a whole?



Procedure

In an attempt to reduce the likelihood of the subjects in this study responding to what Orne (1962) called

¹This item was used to measure the degree of personal relevance the course had for the student.

"the demand characteristics" of an experiment, the subjects who had been assigned to the experimental group were asked to remain after class on the first day of the course. No additional treatment was administered to the control group. The class was dismissed 25 minutes early. This was done by a faculty member other than the teacher of the course who was unaware of the hypotheses being tested in this study. This faculty member, a clinical psychologist, told these students that he was conducting an experiment and that they had been picked at random from the class for participation in this study. This faculty member administered The F Scale, The Dogmatism Scale, The Edwards Personal Preference Schedule, The Sixteen Personality Factor Test and Rokeach's Value System Scale. Students were told to take the instruments home with them and return them no later than the second class meeting.

This same faculty member returned the scored instruments to the subjects during the period following the third and fourth class meeting. When the scored instruments were returned, he gave a brief explanation--using a prepared script¹--of the meaning of the variables that had been measured, told the students that he had obtained the data he needed, and that they might keep the tests if they so desired.

¹See Appendix C.

This technique was followed in the hope that the subjects would not perceive the experimental procedure as having anything in particular to do with the course in which they were enrolled. At the end of the term, the clinical psychologist returned and, after dismissing the rest of the class, told the subjects in the experimental treatment that they had participated in some ongoing research being carried out in order to determine the characteristics of students that enrolled for certain courses at Grand Valley State College. Viewed informally, this appeared to have been a successful attempt to convince the subjects that the experimental treatment was not specifically related to the social psychology course in which they were enrolled; that is, no formal measures were taken, but the experimental subjects made no comments to the clinical psychologist nor to the instructor that would indicate they believed something other than they had been told.

The experimental subjects, the control subjects and the rest of the members of the class were administered the 100 item multiple choice examination and responded to the attached questionnaire at the same time; i.e., during the regularly scheduled final exam period. Data from the twenty-one students used as neither experimental nor control subjects were not included in the study in any way.

Analysis Technique

For purposes of testing hypothesis I--students in an undergraduate course in social psychology who are exposed to information about their standing on particular variables that will be covered in the content of the course will report the content of the course as being more personally relevant to a greater extent than will students not so exposed--the values of the mean responses made by the experimental and the control group to question five on the course evaluation questionnaire were compared. The comparison technique was the t test (Edwards 1968: 88 and 103).

Hypothesis II--students in an undergraduate course in social psychology who are exposed to information about their standing on particular variables that will be covered in the content of the course will achieve higher scores on the objective final exam than will students not so exposed--was tested by comparing the mean scores of the experimental group and the control group on the 100 item multiple choice exam.

No test of hypotheses number III or IV was attempted in Study Number One.

Study Number Two

During the execution of Study Number One, three things became quite apparent: first, the use of the ruse of "an experiment being conducted by a member of the

psychology department other than the instructor" as a means of avoiding the potential bias of having the student subjects respond to "the demand characteristics" (Orne, 1962) of the experiment was a successful and necessary part of the methodology; secondly, the first study did not include a technique for checking the possibility that any difference found between the experimental group and the control group was but a manifestation of the so-called "Hawthorne effect" (Roethlisberger, Dickson, and Wright, 1939); that is, the first study did not control for the possibility that the focusing upon and hence isolating of the experimental group--thereby treating them in a "special way"--was the source of any difference found between the control and experimental groups, thus a second experimental group was deemed necessary for the second study. Finally, it has been demonstrated that the expectancies of the behavioral scientist can significantly influence the outcome of experiments (Rosenthal, 1966). And, more particularly, Meichenbaum, Bowers and Ross (1969) have shown that the expectancies of the experimenter can manifest themselves even in objective test results; therefore, the instructor of the social psychology class used in the second study should not be aware of the identity of the individual students in each of the three conditions and the assisting professor should not have knowledge of the hypotheses being tested in the experiment.

The second study was also carried out in such a way that the third and fourth hypotheses could be tested as well as to provide for a more sophisticated retesting of hypotheses I and II.

Subjects

Thirty-six undergraduates, both male and female, enrolled in social psychology at Grand Valley State College during the fall and spring terms of the 1970-71 academic year, served as subjects in this study. These subjects were randomly picked from the fifty-seven students initially enrolled in this course in the fall of 1970. The twelve students randomly assigned to experimental group one consisted of six males and six females. The average age of this group was twenty-two years, and their mean grade point average was 2.57 on a four point scale. The twelve students randomly assigned to experimental group two consisted of five females and seven males; their average age was twenty-two years and two months. The mean grade point average for this group was 2.73. The control group was comprised of six males and six females whose average age was twenty-two years and four months and whose mean grade point average was 2.50. These differences in grade point average and age are not significant.

The thirty-six students randomly chosen as subjects for this study were picked by a psychology professor who

was not the instructor of the course. This professor also randomly partitioned the subjects into the three groups: i.e., experimental group 1, experimental group 2 and the control group. The instructor of the course was in this way prevented from knowing which students were subjects in this study as well as which students were in what group. This was done to avoid the possibility of contaminating the results of this study with the phenomenon frequently referred to as "the self-fulfilling prophecy" (Manton, 1948; Rosenthal and Jacobson, 1968); that is, it has been demonstrated that the expectations of an experimenter can have an influence upon the responses made by subjects in the experimenter's study (Rosenthal and Jacobson, 1968; Meichenbaum, Bowers and Ross, 1969).

Instruments Used

In Study Number Two the same textbooks, the same closed reserve books, the same assignment sheet and the same personal data sheet were used as had been used in Study Number One. Also, the same psychological variables were used in the experimental treatment in Study Number Two as had been used in Study Number One. And, finally, the same one hundred item multiple choice examination and course evaluation rating scale were administered at the end of the course as had been done in Study Number One.

In addition to the replication of the use of these

instruments in Study Number Two, two other categories of measurement were taken in the second study: certain "unobtrusive measures" (Webb, et al., 1966) were taken and an essay type examination was administered to the three groups of subjects six months after the course was finished.

The unobtrusive measures taken were four in number: number of days missed, number of questions asked in class discussions, number of closed reserve books used, and number of tutorials attended. These measures were recorded by the instructor of the course but it should be remembered that, at the time of his making these records, he was unaware of which students were serving as subjects in the experiment; that is, the instructor recorded these measures for all students enrolled in the class.

The essay-type examination was administered by a member of the psychology department other than the instructor of the class--the same individual who had randomly chosen the subjects to be used in this study. This administration took place approximately six months following the end of the course in social psychology. (See Appendix B for the questions and format used.)

The subjects were given a maximum of one and one half hours to write the examination. The same member of the psychology department (an individual other than the instructor of the course) monitored the exams, collected them, coded each exam as to which group it belonged,

removed the name and other identifying marks, and gave the exams to the instructor to be scored according to a pre-determined set of criteria. The maximum score possible on each question was twenty points.

Procedure

As in the first study, a member of the psychology department other than the instructor of the course, came to the class and, after the instructor had left the room, read the names of those students assigned to experimental group 1 and experimental group 2 and asked them to remain after dismissing the rest of the class. This faculty member then explained that he was conducting some research concerning the characteristics of students that enrolled for certain courses at Grand Valley State College and that they had been chosen at random for participation in this study.

He then gave each student a copy of The F Scale, The Dogmatism Scale, The Edwards Personal Preference Schedule, and The Sixteen Personality Factor Test. The students were instructed to take these instruments home, complete them and return them the following class period. Only the students in experimental group one were given copies of Rokeach's Value Survey Scale. This was done so as to prevent the subjects in experimental group two from seeing their own hierarchical arrangements of values when the

tests were returned during the experimental treatment session.

The students returned the tests on the second day of class. After the instructor left the room and the other students had been dismissed, the faculty member collected the tests. The instruments from experimental group 1 were scored by this faculty member and two student assistants. The tests were returned to the students during the third class meeting; the students in experimental group 2 were given their unscored tests, the students in experimental group 1 received their scored tests.

The faculty member explained to the subjects, after the instructor and the other students had been dismissed, that there had not been enough time to score all the tests. Therefore, in this fashion the students in experimental group 1 had the tests and their own scores to look at while the subjects in experimental group 2 had only the unscored instruments. The subjects in experimental group 2 were given copies of Rokeach's Value Survey Scale at this time.

This rather elaborate procedure was followed in order to determine if merely being isolated from the rest of the class and taking the tests produced changes in the dependent variables or whether the significant experience was actually the exposure to one's own standing on certain variables that would be covered during the progress of the course. This procedure was, in other words, an attempt to

control for the "Hawthorne effect."

The faculty member then gave a brief explanation of the meaning of the variables that had been measured--authoritarianism, dogmatism, achievement motive, terminal and instrumental values and the sixteen personality traits. This constituted the experimental treatment session. This was done during the third and fourth class meetings. (See Appendix C for the contents of the script.)

Throughout the term the instructor recorded the number of days each person missed and the number of questions each person asked. This was accomplished with the aid of a seating chart. The number of tutorials (private conversations with the instructor in his office) attended were also recorded by the instructor. This was done on the individual's personal data sheet. At the end of the course, following the final exam, the instructor obtained from the reserve librarian the names of those students who had made use of the books placed on closed reserve and the frequency of this use.

At the regularly scheduled final exam period, the one hundred item multiple choice exam (see Appendix A) was administered and scored by the instructor. The course evaluation sheet (see the section on "instruments used" in Study Number One) was also administered at this time. The rating given the course on question number five of this instrument was recorded for each student by the instructor.

At the end of the spring term of 1971, the same faculty member who had administered the experimental treatment contacted each of the subjects (experimental group 1, experimental group 2, and a control group) by mail. In a form letter, he asked the individual if he would please report to a particular room on a particular day to take part in a research project being carried out by the Psychology Department of Grand Valley State College. The letter stated that each student would be paid three dollars for his time.

When the time for this phase of the experiment arrived (it was five months and three weeks since the final exam had been given in the fall term), all but two of the thirty-six subjects appeared. Both of these individuals were in the control group. They were contacted by phone and persuaded to come in and take the essay type examination that constituted this final phase of the experiment; however, they took the exam five days after it was given to the other subjects. They both assured the examiner that they had not been told anything about what they were to do, but there was no way to verify that this was actually the case.

The essay type examination was administered by the same faculty member that had conducted the experimental treatment. He allowed the subjects a maximum of one hour and thirty minutes to write their answers. All subjects

finished before the time limit. He collected the exams and, following the administration of the test to the two "no shows" a week later, he coded each exam as to which group the person taking the test had belonged. After removing (by cutting off that space on the examination paper) the names and any other identifying marks, he gave the examinations to the instructor of the course for scoring.

The five questions were scored according to the following formula:

1. Each question was worth a maximum of twenty points.
2. If the student did not answer the question asked, or if his answer was so general that there was no indication of any specific content from the social psychology course, the answer would be scored zero.
3. If the answer mentioned general concepts that were applicable to the question and that had been dealt with in the social psychology course, the answer would be given the score of ten points.
4. For mentioning appropriate specific information--either theories, names of authors, particular constructs like compliance, identification and internalization, or particular processes--that had constituted part of the social psychology course, the answer would be scored as being worth fifteen points.
5. If the student's answer appeared to be a synergistic product of factual material that comprised some

part of the social psychology class, the addition of from one to five points would be made to that particular answer's worth. This was a subjective process but it was considered necessary since it was assumed that certain answers, upon their being read would be "better" even though there was no additional factual information actually being used.

After the tests were scored, the faculty member that had been assisting the instructor recorded the scores on the grade sheet and gave the names of those students in each of the three groups to the instructor.

The instructor prepared a master data sheet on which appeared each subject's score on the one hundred item multiple choice final exam with the loaded items (numbers 3, 5, 6, 9, 10, 12, 15, 18, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100) disregarded, each subject's score on the essay type exam administered approximately six months after the end of the course, the rating given the course by each subject, the number of days missed by each subject, the number of questions asked by each subject, the number of reserved books used by each subject (each time a book was signed out counted as one time even if the same book was checked out more than once), and the number of tutorials attended by each subject.

Analysis Technique

For purposes of testing hypothesis I--students in an undergraduate course in social psychology who are exposed to information about their standing on particular variables that will be covered in the content of the course will report the content of the course as being personally relevant to a greater extent than will students not so exposed--the values of the mean responses made by the two experimental groups and the control group to question five on the course evaluation questionnaire were compared. The comparison technique was "the analysis of variance for a randomized group design" (Edwards, 1968: 120).

To test hypothesis II--students in an undergraduate course in social psychology who are exposed to information about their standing on particular variables that will be covered in the content of the course will achieve higher scores on the objective final exam than will students not so exposed--the mean scores made by each of the three groups were compared in two ways; the comparison technique was "the analysis of variance for a randomized group design" (Edwards, 1968: 120).

The first comparison involved the mean scores on the complete 100 item multiple choice exam. The second comparison involved a comparison of mean scores on the multiple choice exam with the loaded items disregarded; i.e., those items having to do specifically with the

instruments and variables used in the experimental treatment. This was necessary in order to guard against the possibility that any differences found among the three subject groups was merely a function of a "coaching effect;" that is, a comparison of test scores with the loaded items deleted would be a comparison of recognition capacity of the subjects with regard to course content material not directly related to the material dealt with in the experimental treatment.

In order to test hypothesis III--students in an undergraduate course in social psychology who are exposed to information about their standing on particular variables that will be covered in the content of the course will perform more satisfactorily on certain "unobtrusive measures" (Webb, et al., 1966) than will students not so exposed--four comparisons were made of the mean responses of each of the three groups on four different unobtrusive measures. These four comparisons were of the mean number of days missed, mean number of reserve books checked out, and mean number of tutorials attended. The four comparisons were made by use of "the analysis of variance for a randomized group design" (Edwards, 1968: 120).

Hypothesis IV--students in an undergraduate course in social psychology who are exposed to information about their standing on particular variables that will be covered in the content of the course will achieve higher scores on

an essay type examination given approximately six months after the finish of the course than will students not so exposed--was tested by comparing the mean scores on the essay exam of each of the three groups. Once again the comparison technique was "the analysis of variance for a randomized group design" (Edwards, 1968: 120).

CHAPTER III

RESULTS

One methodological consideration should be discussed before turning to the actual results of this experiment; this is the question of what the subjects believed to be the purpose of the experimental treatment to which they were exposed. In both Study Number One and Study Number Two, there were no indications that the subjects believed the experimental treatment to be directly related to the class in which they were enrolled. It would appear that the experimental subjects believed that they were participating in a study to determine "the personality characteristics of students enrolled in certain classes at Grand Valley State College."

Of course, many of the subjects (in Study Number Two) that took the essay type exam six months after the end of the course in which the experimental treatment had been administered must have had some insight into the relationship between their having been given information about certain of the course variables and their being paid to take an examination over material that had been covered in the course. However, any response bias that

might have resulted from such insight was impossible to avoid--given that the post-course test results were to be obtained. The faculty member who administered the test did not report any great expression of concern on the part of the subjects, but he did note that some of the students asked questions like "did this have something to do with the experiment you were doing in the fall?" and "was this test supposed to see if we remembered more than other people in the class?" It would seem reasonable to contend that some response bias could have occurred in the answering of the post-course essay exam; however, it is also contended that up to that point the subjects were unaware of the actual relation between the experimental treatment and the social psychology course.

Study Number One

Hypothesis I

Hypothesis I predicts that students in an undergraduate course in social psychology who are exposed to information about their standing on particular variables that will be covered in the content of the course will report the content of the course as being more personally relevant than students who do not have such exposure.

Table 1 presents the means, the variances, and the standard deviations of the experimental and control

Table 1. Means, variances and standard deviations of the experimental and control groups' responses to the "personal relevance" item-- Study Number One.

	$\bar{X}$	s^2	s
Experimental group N=15	1.26 ^a	.14	.374
Control group N=15	2.26	.88	.938

^aThe smaller the number, the greater the degree of personal relevance reported; this difference between means is significant at the .01 level for a two-tailed test (t obtained was 3.86, t required for $p < .01$ with $df=28$ is 2.76).

groups' responses to the item (on the end-of-course questionnaire) that was used as the measure of personal relevance. This item had a maximum value of 5 and a minimum value of 1. The smaller the number, the greater the degree of personal relevance.

These data from Study Number One clearly support Hypothesis I; that is, students exposed to information about their standing on particular variables to be covered in an undergraduate social psychology class do report the content of the course to be more personally relevant than students who are not exposed to such information. It should be recalled, however, that in this study, the instructor was aware of the identities of

those students comprising the experimental and control groups. Thus, it is impossible to preclude the possibility that this confirmation of Hypothesis I is a consequence of special treatment given by the instructor to those students in the experimental group. The experimenter made every effort to avoid any such differential treatment, but the possibility of this confounding of the results must be noted.

Hypothesis II

Hypothesis II specifies that students in an undergraduate course in social psychology who are exposed to information about their standing on particular variables that will be covered in the content of the course will achieve higher scores on the objective final examination than will students not so exposed. Once again, however, it should be noted that the instructor was aware of the identities of the students in the experimental and control groups used in Study Number One. Although a sincere effort was made by the instructor to avoid any bias made possible by this knowledge, the possibility of contamination of these results is a reality.

Table 2 presents the means, the variances, and the standard deviations of the scores made by the experimental and control groups on the 100 item multiple choice examination given at the end of the course. As can be

Table 2. Means, variances, and standard deviations of the experimental and control groups' scores on a 100 item multiple choice final examination--Study Number One.

	$\bar{X}$	s^2	s
Experimental group N=15	69.26	56.64	7.51
Control group, N=15	59.00	105.00	10.24

^aThis difference between means is significant at the .01 level for a two-tailed test (t obtained was 3.02, t required for $p < .01$ with $df=28$ is 2.76).

seen these results clearly support Hypothesis II; that is, students who are given information about their standing on particular variables that will be covered in an undergraduate course in social psychology do, in fact, score significantly higher on an objective final examination than do students who are not provided with this information.¹

In Study Number One, there was no attempt made to test Hypotheses III or IV.

Study Number Two

The results reported in this section are the products of a design calculated to remove the methodological

¹Although not a part of the design of the experiment, it is of interest to note that there were no significant correlations between the students' scores on the various measures used in the experimental treatment and their scores on the multiple choice examination.

problems seen to be potentially capable of reducing the confidence placed in the findings reported in Study Number One. Namely, these results are generated by a more closely controlled testing of the four hypotheses of concern. The technique of analysis used was the analysis of variance of randomized group designs. In reference to this procedure, Edwards (1968: 121) comments: "The F test, in other words, is a robust test in that it is relatively insensitive to violations of the assumptions of normality of distribution and homogeneity of variance."

Hypothesis I

In this study, Hypothesis I is identical with Hypothesis I in Study Number One: exposure of students to information about their personal standing on variables to be covered in an undergraduate course in social psychology will result in their reporting the course as being more personally relevant than will students not so exposed. Table 3 presents the means, the variances, and the standard deviations of the responses made to the personal relevance item by the two experimental groups and the control group.

Table 4 gives a summary of the analysis of variance performed on the data used to test Hypothesis I. Data reported in these two tables strongly suggest that the three treatments were successful in creating conditions

Table 3. Means, variances and standard deviations of the two experimental groups' and the control group's responses to the "personal relevance" item-- Study Number Two.

	$\bar{X}$	s^2	s
Experimental group 1 N=12	1.20 ^a	.11	.33
Experimental group 2 N=12	1.83	.63	.79
Control group N=12	1.70	.70	.84

^aThe smaller the number, the greater the degree of personal relevance; this difference between means is significant at the .01 level for a two-tailed test (F obtained was 16.14, F required for $p < .01$ is 6.26).

Table 4. Summary of analysis of variance of responses made to the personal relevance item by experimental group 1, experimental group 2 and the control group--Study Number Two.

Source	ss	df	ms	F
bg	9.04	2	4.52	16.14
wg	9.26	33	.28	
tot	18.30			

which produced variations in perception of course relevancy in all three groups. It may be seen that experimental group 1--the group which was exposed to information about their own standing on particular variables to be covered in the course--reported the course as significantly more relevant than either the controls or those in experimental group 2--the group which was given the opportunity to take the instruments used but did not see the instruments with their standings on the variables indicated. A point of interest is that the data suggest that the experience of taking the tests but then not being able to see one's own scores on these instruments produces something of a negative reaction; the mean relevancy rating for experimental group 2 indicates that these subjects perceived the course as less relevant than the control group to which nothing was done. Perhaps what is being manifested here is hostility generated by the frustration of having taken the tests but not having been given any personal feedback; i.e., reward for the effort expended. However, in view of the conclusion, previously mentioned, that the subjects did not perceive the experimental treatment as being directly related to the course in social psychology, this explanation for the low relevancy rating given to the course by experimental group 2 is tenuous but not impossible. Perhaps the subjects in experimental group 2 scapegoated the context within which their frustration

occurred (the social psychology course) without actually perceiving any real connection between the two.

Hypothesis II

In this study, Hypothesis II was identical to that tested in Study Number One; however, in this case, two tests of the prediction that students exposed to information about their own standing on variables that would be covered in an undergraduate course in social psychology would achieve higher scores on the final exam than would students not so exposed were carried out.¹ The first test involved a comparison of scores made on the complete 100 item test. Table 5 displays the means, variances and standard deviations of the two experimental groups' and the control group's scores on the 100 item multiple choice final examination. As can be seen by inspection of Table 5, experimental group 1--those exposed to information about their standing on particular variables to be covered in the course--achieved significantly higher scores on the final examination than did either experimental group 2 or the control group. One interpretation that could be made of the fact that experimental group 2 scored higher than

¹Although not part of the design of this study, it is of interest to note that there were no significant correlations between the students' scores on the various measures used in the experimental treatment and their scores on the multiple choice examination. Similarly, there were no significant differences between groups with reference to mean scores on the various measures used in the experimental treatment.

Table 5. Means, variances and standard deviations of the two experimental groups' and the control group's scores on the 100 item multiple choice final examination--Study Number Two.

	$\bar{X}$	s^2	s
Experimental group 1 N=12	71.91 ^a	56.81	7.52
Experimental group 2 N=12	64.41	57.36	7.56
Control group N=12	60.25	68.09	8.25

^aThis difference between means is significant at the .01 level for a two tailed test (F obtained was 6.86, F required for $p < .01$ is 6.26).

the control group is that the mere exposure to the instruments used in measuring the variables to be covered in the course increased their level of achievement. This is not an unreasonable hypothesis since these subjects did, in fact, have some exposure to the variables that would be dealt with during the progress of the course while the control did not. This exposure could have served to sensitize these students to the related material as it appeared in the assignments and lectures, thereby aiding them in being able to retain this and related information.

Table 6 is a summary of the analysis of variance that was performed on these data used in the first test of Hypothesis II. If it can be assumed that the Ms_{wg} is

an unbiased estimate of the common population variance σ^2 , it is of interest to note that the sample variance for both the two experimental groups fall below this figure. The reduction in variation of the scores on the final exam made by these two groups suggest that it might be of value to test Hypothesis II by a second means; that is, could the reduction in variation in the scores of the two experimental groups be a function of their having had the common experience of being exposed to the instruments used to measure the variables covered in the content of the course. In other words, what would be the relationship among the scores obtained by the three groups if the scores used to test Hypothesis II are the points earned on the examination with the loaded items ignored?

Table 6. Summary of analysis of variance of scores achieved on the 100 item multiple choice examination by experimental group 1, experimental group 2, and the control group--Study Number Two.

Source	ss	df	ms	F
bg	838	2	419	6.86
wg	2005	33	61	
tot	2843			

The results of the second test of Hypothesis II which predicts that students exposed to information about

their standing on particular variables to be covered in an undergraduate course in social psychology will achieve higher scores on an objective examination than will students not so exposed are displayed in Tables 7 and 8. In effect, this is testing the hypothesis in such a way that any criticism based on a contention that all that had been measured in the first test of this hypothesis was the results of "coaching" versus "non-coaching" can be negated. This coaching effect could have been the cause of the differences found between the mean scores of the three groups; there are twenty-five items on the final examination that deal directly with the variables used in the experimental treatment or with the instruments used to measure these variables. However, if it were true that all that was being measured in the first test of Hypothesis II was a difference in amount of coaching (or exposure) to the variables used in the experimental treatment, then one would find these differences "washed out" when the scores for the three groups were compared with the loaded items removed. As is evident from Tables 7 and 8, this is not the case. This second testing of Hypothesis II supports even more strongly than the first testing the prediction that exposing students to their standing on variables to be covered in an introductory course in social psychology will indeed result in their achieving significantly higher scores on an objective final examination than that achieved

by students not so exposed.

Table 7. Means, variances and standard deviations of the two experimental groups' and the control group's scores on the objective final examination with the loaded items disregarded--Study Number Two.

	$\bar{X}$	s^2	s
Experimental group 1 N=12	55.83 ^a	33.27	5.77
Experimental group 2 N=12	49.16	35.63	5.95
Control group N=12	45.00	28.18	5.29

^aThis difference between means is significant at the .01 level for a two-tailed test (F obtained was 11.08, F required for $p < .01$ is 6.26).

Table 8. Summary of analysis of variance and scores achieved on the multiple choice examination, with the loaded items disregarded, by experimental group 1, experimental group 2 and the control group--Study Number Two.

Source	ss	df	ms	F
bg	717	2	358	11.08
wg	1068	33	32.3	
tot	1784			

Adding to the support of this successful second testing of Hypothesis II is the data presented in Table 9.

Table 9. Summary of means of the two experimental groups' and the control group's scores on the objective final examination with the loaded items disregarded, and the loaded items scored independently--Study Number Two.

	$\bar{X}$ for 100 item examination	$\bar{X}$ for examination with 25 loaded items disregarded	$\bar{X}$ for 25 loaded items scored independently
Experimental Group 1 N=12	71.91	55.83	16.08
Experimental Group 2 N=12	64.41	49.16	15.25
Control Group N=12	60.25	45.00	15.25

By examination of this comparison of mean scores on the objective final examination with the loaded items included, disregarded and scored independently, it can be seen that there is no significant difference between the experimental groups' and the control group's mean scores on the loaded items scored independently. On the surface this appears to be a rather odd circumstance; however, it should be recalled that the loaded items concerned material which was highly salient for all members of the class in which the experiment was conducted. This saliency was produced by

two major factors: the process of "selective exposure" (Festinger, 1964: 96) in which the subjects were sensitized to material in both the text and the lecture that dealt with the psychological instruments that they had been given (as was the case for both experimental groups) or that they had heard were being used (as was the case for the control group) and, secondly, the fact that each of the loaded items was discussed in lecture by an instructor whose campus reputation includes "he emphasizes his lectures on his examination." The specificity of the twenty-five loaded items--with regard to the psychological instruments used in the experimental treatment--resulted in all three groups achieving approximately the same score on these items. That this "selective exposure" and "campus reputation" influenced only those items specifically related to the psychological instruments used in the experiment and did not generalize to the other material on the examination can be interpreted to strongly support the argument that exposing students to their standing on variables to be covered is the independent variable that produced the increased achievement level on the objective examination.

Hypothesis III

Hypothesis III predicts that students exposed to information about their standing on the particular

variables that will be covered in the content of an undergraduate course in social psychology will perform more satisfactorily on certain unobtrusive measures than will students not so exposed. The unobtrusive measures used in this experiment were number of days missed from class, number of questions asked during class discussion, number of books checked out from the reserve book selection set aside for the social psychology course, and the number of tutorials attended. Therefore, Hypothesis III was tested by four independent procedures. Tables 10, 11, 12, and 13 present the results of these four tests of Hypothesis III. Clearly, the data support only one of the predictions made in Hypothesis III; that is, the number of questions asked in class discussion by students in experimental group 1 were much greater than the number asked by either the control group or experimental group 2. There were no significant differences found among the three groups with regard to the number of days missed, the number of reserve books checked out, nor the number of tutorials attended; however, the differences that were found were in the direction predicted.

One possible interpretation of this failure to find significant differences among the three groups in three of the four unobtrusive measures taken is that the selection of unobtrusive measures used was at fault. An alternative explanation could be that the experimental treatment did

Table 10. Means, variances and standard deviations of the two experimental groups' and the control groups' number of days missed with the summary of analysis of variance performed on this data-- Study Number Two.

	$\bar{X}$	s^2	s
Experimental Group 1 N=12	2.00 ^a	3.45	1.86
Experimental Group 2 N=12	3.08	6.45	2.53
Control Group N=12	3.33	9.90	3.14

Source	ss	df	ms	F
bg	14	2	7	1.11
wg	205	33	6.2	
tot	219			

^aThis difference between means is not significant.
The F required for $p < .01$ is 6.26.

Table 11. Means, variances and standard deviations of the two experimental groups' and the control group's number of questions asked in class discussion with the summary of analysis of variance performed on this data--Study Number Two.

	$\bar{X}$	s^2	s
Experimental Group 1 N=12	9.25 ^a	22.00	4.69
Experimental Group 2 N=12	1.91	5.18	2.25
Control Group N=12	.33	.42	.65

Source	ss	df	ms	F
bg	543	2	271	30.11
wg	304	33	9	
tot	847			

^aThis difference between means is significant at the .01 level for a two-tailed test (F obtained was 30.11, F required for $p < .01$ is 6.26).

Table 12. Means, variances and standard deviations of the two experimental groups' and the control group's number of reserve books checked out with the summary of analysis of variance performed on this data--Study Number Two.

	$\bar{X}$	s^2	s	
Experimental Group 1 N=12	.83 ^a	1.63	1.25	
Experimental Group 2 N=12	.16	.15	.38	
Control Group N=12	.33	.75	.86	

Source	ss	df	ms	F
bg	2.89	2	1.44	1.65
wg	29.00	33	.87	
tot	30.89			

^aThis difference between means is not significant.
The F required for $p < .01$ is 6.26.

Table 13. Means, variances and standard deviations of the two experimental groups' and the control group's number of tutorials attended with the summary of analysis of variance performed on this data-- Study Number Two.

	$\bar{x}$	s^2	s	
Experimental Group 1 N=12	1.33 ^a	.81	.900	
Experimental Group 2 N=12	.91	.82	.905	
Control Group N=12	.50	.63	.79	

Source	ss	df	ms	F
bg	4	2	2	2.89
wg	23	33	.69	
tot	27			

^aThis difference between means is not significant.
The F required for $p < .01$ is 6.26.

not, in fact, influence the behaviors of the student subjects. But negating this explanation is the finding that those students who were exposed to information about their standing on variables to be covered in an undergraduate class in social psychology did, in fact, ask more questions than did students not so exposed. Furthermore, the failure to find significant differences in number of days missed from class, number of reserve books checked out, or number of tutorials attended does not weaken the confidence that can be placed in the partial confirmation of Hypothesis III simply because there was no way of knowing before the fact if these unobtrusive measures were actually capable of being influenced by the degree of personal relevance of the class. For example, it is entirely possible that there are student norms concerning the number of days one "should cut class" and/or how many tutorials one "should attend" that are stronger than any manipulation of an independent variable directly related to classroom experience. The data presently available allows no conclusion to be reached on this point. Further, the students in experimental group 1 may well have been using the same books (that had been placed on reserve for this course in social psychology) but this use could have been at one of the four other colleges located within a 25 mile radius of Grand Valley State College. Data was not collected to test such a hypothesis; hence, no conclusion can be

reached concerning this unobtrusive measure and its relation to the experimental treatment.

Hypothesis IV

This hypothesis predicts that students who are exposed to information regarding their standing on variables to be covered in an undergraduate course in social psychology will achieve significantly higher scores on an essay type of examination given six months after the end of the course than will students not so exposed. Table 14 displays the results of the testing of this hypothesis and the summary of the analysis of variance that was performed on this data. Inspection of this table shows that the results of this study clearly support the prediction made in Hypothesis IV. Without doubt, there are legitimate criticisms that can be made of the procedures used in testing this hypothesis; i.e., the use of a subjectively scored examination (which is very "unscientific"), the use of money as an incentive to get the students to come to the designated location and take the examination and, perhaps most seriously, the necessity of tracking down two recalcitrant subjects and thereby having to administer the test separately to them. Nevertheless, the end sought--the determination of whether or not the experimental treatment had any longitudinal effects--seems to more than

justify the means used. After all, one of the major objectives of educational procedures is to have effects that last longer than the last day of class.

Table 14. Means, variances and standard deviations of the two experimental groups' and the control group's scores on an essay type examination administered six months after the end of the course with the summary of analysis of variance performed on this data--Study Number Two.

	$\bar{X}$	s^2	s
Experimental Group 1 N=12	76.08 ^a	116.81	10.80
Experimental Group 2 N=12	67.50	25.00	5.00
Control Group N=12	53.99	477.72	21.85

Source	ss	df	ms	F
bg	2998	2	1499	7.27
wg	6815	33	206	
tot	9813			

^aThis difference between means is significant at the .01 level for a two-tailed test. (F obtained was 7.27, F required for $p < .01$ is 6.26).

CHAPTER IV

DISCUSSION

Summary

Using Rokeach's (1968) social psychological theory of the structure and dynamics of beliefs, attitudes and values, an operational definition of personal relevance was formulated for use in this investigation of academic performance. Personal relevance was defined as that characteristic taken on by information given to a student when this information concerns variables about which he already has knowledge concerning himself.

Given this definition of personal relevance, Rokeach's (1968) theoretical stance was used to generate the general hypothesis that students, for whom certain variables to be covered in an undergraduate course in social psychology were made more personally relevant, would exhibit enhanced academic performance. This general hypothesis was tested in four specific ways. Students who are exposed to information about their standing on particular variables that will be covered in the content of an undergraduate course in social psychology will (1) report the content of the course as being more personally relevant

than will students not so exposed, (2) achieve higher scores on an objective final examination than will students not so exposed, (3) perform more satisfactorily on certain unobtrusive measures--number of days missed, number of questions asked in class discussion, number of reserve books checked out, and number of tutorials attended--than will students not so exposed, and (4) achieve higher scores on an essay-type examination given six months after the finish of the course than will students not so exposed.

To test these hypotheses two studies were conducted. The first study was a pilot project performed in order to determine the feasibility of the experimental procedures for use in a small college setting and to assist in discovering possible sources of experimental bias. Study Number One involved thirty students enrolled for the first time in an undergraduate course in social psychology at Grand Valley State College. These subjects were randomly chosen from the class list and randomly assigned into two equal groups: an experimental group which was exposed to information about their standing on particular variables that were to be covered in the content of the course, and a control group which did not have this exposure. The experimental treatment took place during portions of the first four class meetings after the other members of the class had been excused. The influence of this experimental treatment was measured by comparing the responses of both

groups to an end-of-course questionnaire (a section of which asked about the degree of personal relevance the course had had for the student) and to a one hundred item multiple choice examination. The analysis of these data supported the predictions contained in hypotheses I and II; no attempt was made to test hypotheses III or IV in Study Number One.

The theoretical concerns and procedural requirements of this first study made it apparent that the use of a cover story was successful, and therefore needed in Study Number Two, in order to prevent the subjects' responses from being contaminated by what Orne (1962) called "the demand characteristics" of an experiment; that is, it was deemed a justifiable deception to tell the subjects that they were participating in the experimental treatment "as part of a research project dealing with the personality characteristics of students taking certain courses at Grand Valley State College." It was also considered necessary to conduct the second study in such a way as to avoid the bias produced by the "self fulfilling prophecy" (Rosenthal, 1966); in other words, it was desirable that the experimental procedure be performed by someone other than the author of the design so that the author could not subtly bias his subjects in a direction favorable to his design. Finally, it appeared that the degree of confidence that could be placed in the positive results from Study Number One was

reduced due to the absence of a control for the "Hawthorne effect" (Roethlisberger, Dickson and Wright, 1939). Therefore, the second study was carried out so as to control for the possibility that the experimental treatment effects were not confounded by the influence of the subjects having been isolated and treated in a "special" way.

Study Number Two dealt with thirty-six students enrolled for the first time in an undergraduate course in social psychology taught at Grand Valley State College. These subjects were randomly selected and randomly partitioned into three equal groups: experimental group 1, experimental group 2, and a control group. Experimental group 1 was exposed to information about their standing on variables that would be covered during the course of the term. Experimental group 2 was given the opportunity to take the instruments used to measure these variables, but they did not see the instruments with their own standings on these variables indicated; that is, subjects in group 2 had their own unscored tests returned to them for the administration of the experimental treatment. These procedures were carried out by a member of the psychology department other than the instructor of the course and the instructor had no knowledge of which students were serving as subjects in Study Number Two. In addition, the assisting professor had no knowledge of the hypotheses being tested in this study. The control group did not receive

the experimental treatment. The influence of the experimental treatment was determined by comparing the subjects' responses to an end-of-course questionnaire (to test hypothesis I), their scores on a one hundred item multiple choice examination (to test hypothesis II), their performance on the four unobtrusive measures (to test hypothesis III), and their scores on an essay type examination administered six months after the end of the course (to test hypothesis IV). The analysis of the data from Study Number Two supported the predictions contained in hypotheses I, II, and IV and partially confirmed the predictions contained in hypothesis III.

Study Number One

The experimental treatment subjects in the first, or pilot study, reported that they found the course more "relevant" to their own personal lives, and they also achieved higher scores on an objective final examination. How might one explain these results given that the personal relevance construct is valid? That is, given that personal relevance--the giving of information to the student concerning variables about which he already possesses knowledge--is an example of "exposing a person to information designed to make him consciously aware of states of inconsistency that exist chronically within his own value-attitude system below the level of his conscious awareness"

(Rokeach, 1971: 453), what elements were inconsistent? What evoked a motivational state that resulted in the behavioral changes that were manifested and measured? Or in Rokeach's words, "To speak of dissonance meaningfully is to identify at least two elements, X and Y, that are in some dissonant relation to one another" (1971: 453).

Rokeach has postulated that "while a person will typically strive for both kinds of consistency, consistency with self-esteem is probably a more compelling consideration than consistency with logic or reality" (1968: 164). Following this line of reasoning, it can be argued that the elements brought into conflict by the experimental treatment were self-esteem and self-understanding. The experimental subjects were exposed to information concerning their own standing on certain personality traits, value systems, achievement motive, dogmatism, and authoritarianism. This treatment made these self-image (self-esteem) factors more salient and more explicitly a part of their conscious awareness. However, these subjects were then exposed to the opportunity--via textbook assignments, lectures and discussions--of gaining additional information about these variables which thereby made self-understanding elements more salient. To reduce the inconsistency between these two elements, the experimental subjects apparently increased their efforts to obtain information that would more nearly equate the self-understanding

elements with the self-esteem elements. The consequences of these efforts were made manifest in the two dependent variables measured in this first study.

By inspection of the data contained in Appendix E, an apparent paradox is seen; that is, the experimental subjects in Study Number One scored significantly higher than the controls on the objective final examination with the twenty-five loaded items included, but when the loaded items are considered independently, there was no significant difference between the two groups. This is only an apparent paradox because of certain factors that were, unavoidably, a part of the experimental procedure. The class in which the experiment was conducted was small and those students in the control group could not be prevented from having knowledge that certain of their classmates were being given "tests." In spite of efforts to control this variable, the names of these tests were discussed among the students. Couple this dynamic with the fact that each of the twenty-five loaded items was mentioned explicitly in lecture by an instructor whose campus reputation includes "He puts a lot of emphasis on his lectures when he gives an exam," and it becomes relatively easy to understand why these loaded items would have had increased saliency for both the experimental and control groups. The significant difference in scores between the two groups on the non-loaded items tends, on the other hand, to

support the thesis that the independent variable of administering the personal relevance experimental treatment was responsible for the enhanced achievement by the experimental group.

An alternative explanation for these data is, of course, possible. The experimental subjects could have simply "liked" the course more than the controls because they were given special treatment, and they had had personal experience with some of the constructs mentioned in the text and lectures. However, if one is to accept this explanation, the results displayed in Appendix B become extremely difficult to understand. In short, one would expect that there would have been a significant difference between the groups on the loaded items if "liking" of the course was the only explanation given for these findings; the individuals who were not exposed to the experimental treatment would be expected to "dislike" the course and, consequently, score lower on both loaded and non-loaded items.

Study Number Two

The subjects in the second study were divided into three groups, and the data strongly suggest that the three treatments were successful in creating conditions which produced variations in perception of course relevancy. The group that received the personal relevance

experimental treatment perceived the course as more relevant than either the control group or the group that simply took the instruments but did not see their scores. But, even more significant, was the finding that the control group perceived the course as more personally relevant than did experimental group 2. Perhaps the experience of taking the tests but then not being able to see one's own scores produced enough unresolved inconsistency to result in a negative evaluation of the course. This could explain experimental group 2 having a relevancy score lower than the control group. An alternative explanation could be that this group was hostile toward social psychology (scapegoating the context from which such testing appeared to originate) because of the frustration of having had to expend the energy required to take the tests and then to receive no reward for the effort made.

Experimental group 1 also scored significantly higher on the objective multiple choice examination than did the other two groups; and, as was the case in Study Number One, these differences were washed out when only the scores on the loaded items were compared. Once again this apparent paradox can be explained by recalling that these loaded items contained material which was highly salient for all members of the class. This saliency was produced by (a) the apparent fact that all subjects were sensitized to this material either because they had taken

the test or had heard that such testing was being carried out, and (b) the "common knowledge" that the course instructor placed heavy emphasis upon lecture material in his examinations (all twenty-five loaded items were mentioned in lecture). The explanation for these experimental subjects scoring significantly higher on the non-loaded items is the same as that offered in the discussion of Study Number One; i.e., in an attempt to reduce the inconsistency between the self-esteem and self-understanding elements, their achievement on the examination was enhanced.

There were no significant differences found among the three groups with regard to three of the four unobtrusive measures taken; however, the differences found were in the predicted direction. The number of questions asked in class discussion by students in experimental group 1 was significantly greater than either of the other two groups. It would appear that these students were motivated to reduce the inconsistency between self-esteem elements and self-understanding elements; therefore, they used the technique of question asking to gain desired information. This appears to be a particularly interesting finding when viewed within the context of the rather ubiquitous hesitancy shown by college students to speak out in classes larger than ten to twenty individuals. This finding could be interpreted as one indication of the strength of the motive elicited by the personal relevance

experimental treatment. Of course, it could be claimed that experimental group 1 simply contained more extroverted individuals; however, the fact that subjects were randomly assigned to the groups appears to nullify this particular alternative explanation.

The lack of significant differences among the three groups with regard to number of days missed, number of reserve books checked out, and number of tutorials attended is disappointing. One explanation for these negative findings could be that the experimental treatment did not, in fact, have the influence that has heretofore been attributed to it. However, the findings that students in experimental group 1 scored higher on the objective examination, asked more questions in class discussion, and reported the class as having more personal relevance would appear to negate this alternative explanation. Perhaps a more plausible reason for these negative results would be the strength of student norms; that is, it is quite possible that there are student norms concerning the number of classes one should "cut," how many tutorials one should attend, and how often one is "seen" in the library that are stronger than the motivation induced by the manipulation of the independent variable in this study.

The final result obtained in Study Number Two suggests that students exposed to the experimental treatment of personal relevance will score higher on an essay

type examination given six months after the end of the course than will students not so exposed. There are many legitimate criticisms that can and should be made of this portion of Study Number Two. To mention but two: the use of a subjectively scored examination is rather "unscientific," and the hesitancy of two of the subjects which required a separate testing of these individuals raises the question of reliability of results. However, the mere suggestion that the experimental treatment produced measurable longitudinal effects on academic achievement is very important. Perhaps Rokeach expressed it best when he said "we emphasized the persuasive effects of group pressure, prestige, order of communication, role playing, and forced compliance...but we neglected to more difficult study of the more enduring effects...." (1968: 159).

That manipulation of an individual's awareness of states of inconsistency that are present within his value-attitude system produces long range consequences appears to be a conclusion that can be legitimately drawn from the final portion of Study Number Two. Rokeach (1971) has also demonstrated this result; however, what can be said of the dynamics of this long range modification? If it is accepted that the motive to achieve consistency, particularly with regard to self-esteem, is the basic "cause" of the changes in the dependent variables, how does one explain the continuation of the effect? Perhaps

the most parsimonious explanation is simply that, once change has been generated by the motive to re-establish consistency, the changed state becomes the status quo or the base line against which any further inconsistency awareness will have to be directed. In other words, the change effected through the use of the personal relevance treatment became the "is that ought to be" and against which later change is resisted or made.

Conclusions

As noted by Evans and Rozelle (1970: 251), "greater confidence in a particular experimental result is gained if this result can be consistently demonstrated across a wide variety of settings, people, and experimental tasks." This experiment produced positive results using two different groups of subjects involved in a variety of experimental tasks covering a period of approximately eighteen months; however, the results of any single experiment, regardless of the span of time covered, tasks involved, or variety of subjects used, are still only the results of a single experiment. Thus, the conclusions suggested by the investigation are not to be seen as conclusive. Nevertheless, certain assertions appear to be warranted by the findings of this experiment: students in undergraduate courses in social psychology who are exposed to information about their standing on particular variables to be

covered in the content of the course will (1) report the content of the course as being more personally relevant than will students not so exposed, (2) achieve higher scores on an objective final examination than will students not so exposed, (3) ask more questions during class discussion than will students not so exposed, and (4) achieve higher scores on an essay examination administered six months after the end of the course than will students not so exposed.

In a more general statement of the findings of this experiment, it suggested that academic performance in undergraduate courses in social psychology can be significantly enhanced, both immediately and over the passage of time, by increasing the personal relevance of the content of the course. One technique of increasing personal relevance is exposing the student to information pertaining to his standing on particular variables that will be covered during the progress of the course. It is further suggested that increasing the degree of personal relevance enhances academic performance in areas other than those traditionally measured by scores on achievement type examinations.

One question that can be raised is whether or not "relevance" was that which was being manipulated in these two studies. One might argue that the independent variable was "importance of the material" to the student, or perhaps what obtained was yet another variation of the

Hawthorne Effect. In the absence of still another control group--which could have been given information about themselves concerning variables not covered in class--it is difficult to unconditionally affirm that the obtained results were not merely a product of "being treated in a special way." However, the question is an empirical one that could be answered. Until such evidence is provided, data from this study support the contention that "relevance" (as operationally defined in this research) was the variable that made "a difference" in the academic performance of the subjects.¹

An important aspect of any discussion of the conclusions reached as the result of an empirical investigation is pointed out by Bakan (1969: 21 and 22) when he says "when the test of significance has been run, the necessity for induction has hardly been completely satisfied. It is certainly the case that, as confirming particulars are added, the credibility of the general is increased." In the case of this research, "the general" is the theory used to generate the operational definition of personal relevance as well as the particular hypotheses tested. Without belaboring the obvious, it can be suggested that the

¹In non-technical terms, the difference in academic performance between the relevance groups and the other students was one letter grade; i.e., the enhancement effect was typically from a "C" to a "B" or from a "B" to an "A."

positive results of this single research effort can and should be seen as supporting Rokeach's theory of the structure and dynamics of beliefs, attitudes and values. In particular these findings lend increased credibility to Rokeach's contentions regarding that which constitutes cognitive importance for an individual; i.e., cognitive importance is related to the degree of "connectedness: the more a given belief is functionally connected or in communication with other beliefs, the more implications and consequences it has for other beliefs" (Rokeach, 1968: 5). The findings herein reported also suggest the conclusions that Rokeach's proposed criteria for evaluating the degree of importance, or connectedness, of beliefs-- "beliefs concerning existence and self identity...that are shared with others are assumed to have more functional connections and consequences for other beliefs...." (Rokeach, 1968: 5)--has increased validity. But perhaps the most significant implication that derives from this research concerns Rokeach's theory about change in value attitude systems. As he noted, "We not only seek to describe the manner in which value-attitude systems may be organized but also how they may change" (1968: 164). The use of the construct of personal relevance as a specific example of exposing a person to the knowledge that there already exist states of inconsistency within his own value-attitude system allowed for a test of the validity

of Rokeach's claim that this procedure is an effective means of inducing a state of inconsistency between elements in this system. The data obtained in this study appear to support this claim and gives added reason for acting on Rokeach's stated wish that this technique "opens the door to an experimental study of problems of education and re-education" (1968: 167).

There is another conclusion that appears to be indicated by this investigation: social psychological theory and procedures are amenable for use in research concerning educational processes. This is of particular importance in view of the criticism made of most of the research being done into instructional processes and techniques. Gage and Tohwer (1969: 381) comment that "remoteness of applicability to instruction...characterizes many studies of human learning, retention and transfer, appearing in the most prestigious of psychological journals." Social psychological theory and procedures are available, and, as demonstrated in this research, these can be used to investigate educational processes without creating a degree of contrivance that makes the findings all but useless.

Implications

The support for and elaboration of Rokeach's theory of attitude-value systems suggests the most obvious

implication of this study; i.e., this is a "good theory" in that it generates useful and verifiable hypotheses and deserves further study and differentiation. In addition, it seems that the possibility of "a social psychology of education" is implied by this research effort. J. W. Getzels' article, "A Social Psychology of Education" in Volume V of The Handbook of Social Psychology, Second Edition and the book The Social Psychology of Education by David W. Johnson further support this implication. However, what is yet to be determined are the boundaries and structure of this area of study. Neither the above works nor this study justify anything but cautious statements as to what will constitute a social psychology of education; however, there are certain implications to be drawn from this study that can be added to this adumbration.

Given that this investigation has a degree of validity, a logical next step would be the study of the relationship between the content of the variables used to induce personal relevance and the degree of relevance obtained. Are there certain attitudinal or personality variables that should not be communicated to the student because of the harmful and/or negative consequences that might be obtained? Or, conversely, are there certain variables about which the student can be told that will elicit a greater degree of personal relevance. These are empirical questions and are capable of being answered.

Another empirical concern that deserves attention is the question of what academic performance indices, other than scores on achievement tests, are responsive to the manipulation of personal relevance. In this investigation it was found that number of days missed, number of tutorials attended and number of reserve books checked out were not significantly influenced by the manipulation of personal relevance. Perhaps personal relevance could be increased to the degree that these dependent variables would reflect such an increase or perhaps these unobtrusive measures are beyond control of the independent variable in question. But once again, these are questions that could and should be answered empirically.

Perhaps one of the more important implications from this study, for purposes of structuring a social psychology of education, concerns the problem of the longitudinal impact of the education experience. Increasing the personal relevance, as here conceptualized within the framework of Rokeach's theory of value-attitude systems, of a course in social psychology, was suggested to be one way to increase the length of time which the student retained concepts and information from the course content. If this be a valid finding, it is necessary to take the next logical steps and determine the dynamics of this increase. What is the span of time over which such an influence lasts and under what conditions can the maximal time span

be obtained? It is just this area--enhancing academic performance by means of increasing personal relevance--that appears to hold perhaps the most promise for contributing to a productive social psychology of education.

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APPENDICES

APPENDIX A

THE ONE HUNDRED ITEM MULTIPLE
CHOICE EXAMINATION USED IN
BOTH STUDY NUMBER ONE
AND STUDY NUMBER TWO

APPENDIX A

THE ONE HUNDRED ITEM MULTIPLE CHOICE EXAMINATION USED IN BOTH STUDY NUMBER ONE AND STUDY NUMBER TWO

Social Psychology

Psychology 330

Final Exam

1. A feature of experimentation which enhances the experimenter's potential as an influence course has been
(3) termed: (1) social facilitation; (2) status enhancement; (3) demand characteristics; (4) suggestibility bias.
2. A criticism of the concept of national character is that: (1) much of this work rests on unsubstantiated
(4) general impressions; (2) national and cultural boundaries often fail to correspond; (3) cultural patterns change through time; (4) all of these.
3. The Sixteen Personality Factor Questionnaire is: (1) a test used only with neurotics; (2) a test that describes
(3) surface traits only; (3) a test that can be used with both neurotics and normals; (4) a test that describes unipolar traits only.
4. The concept of personality types which is widest in terms of recognizing the range of variation within a
(1) society is that of: (1) modal personality; (2) basic personality; (3) core personality; (4) stable personality.
5. Values may be defined as: (1) a single belief that transcendentally guides behavior; (2) an imperative to
(4) action; (3) a standard; (4) all of the above.
6. The Sixteen Personality Factor Questionnaire: (1) cannot be used to obtain insights into the structure of
(4) personality; (2) can be used only with adults; (3) can be used only with college age individuals; (4) can be used to obtain insights into the structure of personality.

7. The relationship between conformity and non-conformity: (1) involves multiple motives; (2) can be misleading if (4) external appearances alone are relied on; (3) is not a matter of simple opposites; (4) all of these.
8. The distinction between "leadership" and a "leader" is essentially that: (1) the former is a position of (3) designated authority while the latter is not; (2) the former is a practical process while the latter is symbolic process; (3) the former is a relationship while the latter is indicative of a role in that relationship; (4) the former is a necessary group resource and the latter is an element in attaining the resource.
9. The Sixteen Personality Factor Questionnaire is: (1) a test developed by means of complex patterning analysis; (2) a test developed by means of a complex correlational techniques; (3) a test developed by making reference to normal behavior only; (4) a test developed by making reference to abnormal behavior only.
10. Values: (1) are not directly related to behavior; (2) may be either instrumental or terminal (3) are not (2) directly related to attitudes; (4) can be measured by simply noting an individual's attitudes toward a given object.
11. Two important unconscious features of prejudice are: (1) homogeneity and heterogeneity; (2) the in-group (3) and the out-group; (3) projection and rationalization; (4) the self-concept and social acceptance.
12. The use of the Sixteen Personality Factor Questionnaire would: (1) be very helpful in studying adjustment; (2) (1) not be very useful in studying normal behavior; (3) be useful in only studying normal behavior; (4) not be very useful in studying adjustment.
13. Thibaut and Kelley term the standard for evaluating the attractiveness of a relationship in terms of rewards (2) relative to costs: (1) status congruence; (2) comparison level; (3) comparison level for alternatives; (4) behavioral control level.
14. A deficiency in the trait typology approach to personality is that it: (1) ignores situational variables; (4) (2) focuses exclusively on responses; (3) slights the large number of "mixed types"; (4) all of these.
15. A person's value system represents: (1) his total belief system; (2) a learned way of inducing worth; (3) (3) a learned organization of rules for making choices

between modes of behavior or end states of existence;
 (4) a construct that has theoretical significance only since values cannot be objectively measured.

16. The research by Stouffer and his colleagues, on "relative deprivation" in military groups, indicated in general that: (1) people with low expectations for promotion were least satisfied; (2) people with high expectations for promotion were most successful; (3) people with high expectations for promotion were most satisfied; (4) people with high expectations for promotions were least satisfied.
17. Hartshorne and May have found that the "honesty" of children is most highly related to: (1) authoritarian family structure; (2) the particulars of a given situation; (3) introversion more than extroversion; (4) achievement motivation.
18. The Sixteen Personality Factor Questionnaire is particularly useful to the social psychologist interested in group behavior in that the test: (1) can be used to measure group cohesiveness; (2) can be used to measure domination-subordination of group members; (3) correlates well with the universal index of group productivity; (4) correlates almost perfectly with the sociogram.
19. "Bill behaves dependently; therefore, he has a trait of dependency" would be illustrative of what G. W. Allport calls the: (1) fallacy of misplaced concreteness; (2) proaction; (3) the dispositional approach; (4) reification.
20. Within a person's value system: (1) all values are equally important; (2) his values exist in a hierarchical structure; (3) instrumental values are more important than terminal values; (4) all of the above.
21. Goffman states that his approach to role behavior is: (1) structural; (2) political; (3) cultural; (4) dramatic.
22. The person who tends to behave in an anticonforming way is actually revealing great: (1) independence; (2) dependence; (3) self-esteem; (4) individuality.
23. Homans' statement that "influence over others is purchased at the price of allowing one's self to be influenced by others" reveals a view of leadership that is mainly: (1) situational; (2) resource-oriented; (3) trait-oriented; (4) transactional.

24. The consideration that individuals are most likely to react to certain aspects of a social situation as "significant aspects" has particular implications for:
 - (1) value systems; (2) roles; (3) perceptual illusions; (4) status congruence.
25. The values that are related to an individual's behavior in a given situation:
 - (4) attitude toward the object of concern; (2) will be a function of his attitude toward the situation of concern; (3) will be a function of the instrumental and terminal values activated by the attitudes involved; (4) all of the above.
26. According to Heider, the basic difference between object perception and person perception lies in the consideration that:
 - (4) object perception and person perception involve different perceptual processes; (2) objects and persons differ in structural characteristics; (3) objects lack locomotion; (4) objects lack motivation.
27. The approach to leadership through the study of the "traits" of leaders:
 - (4) was aimed at determining what factors made a person a leader; (2) slighted the effects of the situation including followers' responses; (3) yielded a highly mixed picture of leadership; (4) all of these.
28. The term "group locomotion" refers to:
 - (1) the overall level of interaction in a group; (2) the extent to which members move in and out of a group; (3) the group's activity in attaining a desired goal; (4) the extent to which shifts occur in the status of group members.
29. Legal action is most likely to be taken against an individual who violates a:
 - (1) folkway; (2) more; (2) (3) convention; (4) usage.
30. The Edwards Personal Preference Schedule:
 - (1) measures the predisposition of an individual to be pathological; (2) measures the individual's predominant personality motivations; (3) is used to measure White's competence motive; (4) is used to measure the strength of various instinctive urges.
31. In a follow-up of his Bennington study, Newcomb found that the more liberally-inclined girls in college
 - (1) later tended to: (1) marry men with liberal political leanings; (2) marry more politically conservative

- men from their upper-class environment; (3) marry much later in life than the conservatively-inclined girls; (4) none of these.
32. The contemporary functional view of leadership considers leadership to be: (1) a function which may be served by different behaviors; (2) a property of the group's structure; (3) an individual resource; (4) both 1 and 2.
33. In general, identification with others leads to an increase in: (1) reliance on them as a source of social reality; (2) a sense of belonging; (3) susceptibility to their assertions of influence; (4) all of these.
34. The term "social expectancy" may apply to: (1) taboos; (2) conventions; (3) roles; (4) all of these.
35. Which one of the following motives are measured by the Edwards Personal Preference Schedule? (1) Power; (2) Dependency; (3) Competence; (4) None of the above.
36. One of the determinants of interpersonal attraction is "propinquity," which means that people are most likely to be attracted toward those: (1) in closest contact with them; (2) in least contact with them; (3) who are similar to them; (4) who are dissimilar from them.
37. Leadership imposed in a formal structure by external authority illustrates: (1) emergent leadership; (2) socio-emotional leadership; (3) attempted leadership; (4) none of these.
38. For the most part, social psychology is interested in conformity as a: (1) phenomenon which is produced by and leads to influence effects; (2) feature of society which stifles individuality; (3) deterministic process; (4) pattern of institutional conformism.
39. Paul and Laulicht's finding that 70% of a national sample of Canadian voters favored disarmament even though only 38% felt that others did illustrates: (1) cultural conflict; (2) communication processes; (3) contradictory societal values; (4) pluralistic ignorance.
40. One of the values of the Edwards Personal Preference Schedule is that: (1) the test reduces the likelihood of respondents making just the socially desirable response; (2) the test has a built-in "tendency to

deceive" measure; (3) the test can be used with non-verbal individuals; (4) the test is capable of being used in different cultures without cross-cultural contamination.

41. Thibaut and Kelley distinguish between two kinds of power, "behavior control" and "fate control." By the (3) latter they mean: (1) X can affect Y's outcomes under some circumstances; (2) X can affect Y's outcomes so as to make it desirable for Y to do certain things; (3) X can affect Y's outcomes regardless of what Y does; (4) none of these.
42. With his "least preferred coworker" rating Fiedler has found a relationship between the leader's LPC score (1) and group creativity that is: (1) positive under pleasant relaxed conditions; (2) positive under unpleasant, stressful conditions; (3) negative under pleasant, relaxed conditions; (4) none of these.
43. Communication within a group: (1) is consumed by the group's task entirely; (2) creates role behavior; (3) (4) maintains differences in role behavior; (4) both 2 and 3.
44. According to Helson's adaptation level theory, a moderate appeal for social reform, made to an audience (2) having just heard a strong appeal in favor of such reform, would probably be judged by the audience to be: (1) a moderate appeal for reform; (2) an appeal favoring the status quo; (3) a strong appeal for reform; (4) adaptation level not relevant to this question.
45. The achievement motive, one of the variables measured by the Edwards Personal Preference Schedule, was (2) initially studied by McClelland: (1) by measuring the amount of achievement imagery produced in looking at work pictures; (2) looking at the differences in reported imagery to pictures between an achievement aroused and a control group; (3) studying the personality characteristics of fast and slow problem-solvers; (4) interviewing successful and unsuccessful businessmen.
46. Social interaction is best characterized as: (1) a reciprocal relationship between persons whose behavior (1) is interdependent; (2) face-to-face contact between persons; (3) an implicit relationship; (4) both 2 and 3.

47. Inter-group relations can be considered to encompass:
(1) both actual or implied interaction; (2) only actual interaction between contending parties; (3) collective relations but not individual relations; (4) membership groups but not reference groups.
48. Research on interaction as a function of group size indicates that as a group gets larger:
(1) different qualities may characterize internal group relationships; (2) a greater degree of competitive behavior may be evidenced; (3) a greater disparity may occur in member prominence; (4) all of these.
49. In the Bruner and Goodman experiment with children on estimation of size of different coins it was found that:
(1) wealthy children were very accurate; (2) poor children were very accurate children; (3) wealthy children underestimated the size of coins; (4) poor children overestimated the size of coins.
50. The Edwards Personal Preference Schedule:
(1) would be of little use to the social psychologist; (2) cannot be used with any person that is psychologically abnormal; (3) would be of use to a social psychologist interested in measuring interpersonal sensitivity; (4) would be of use to a social psychologist interested in predicting interpersonal attraction patterns.
51. Which factor is most important in accounting for connotative meaning as measured by semantic differential rating techniques?
(1) evaluative; (2) potency; (3) activity; (4) denotative.
52. Effectiveness in the advocacy function of leadership is largely shaped by:
(1) the expectations of followers; (2) the utterances of the leader; (3) the perceived group goals; (4) all of these.
53. Low status members of a group are most likely to:
(1) reject the status hierarchy within the group; (2) direct considerable aggression toward members who hold high status; (3) try to better themselves with members who hold high status; (4) avoid interaction with members who hold high status.
54. For the most part, in the absence of appropriate categories for new experience, people tend to:
(1) rely on old ones; (2) show perceptual discrimination; (3) indulge in perceptual distortion; (4) manifest avoidance behavior.

55. Authoritarianism and dogmatism: (1) are the same thing; (2) are different with dogmatism being the more general concept; (3) are different with authoritarianism being the more general concept; (4) can neither be measured.
56. As technical terms, scientists try to use words that have only denotative meanings because: (1) they imply (2) a range of concepts for a single word; (2) connotative meanings of words can cause two words with the same denotative meaning to convey different things; (3) words with connotative meanings tend to be longer and more structurally complicated; (4) all of these.
57. A criticism of the view which says the expression of aggression is a necessary feature of human affairs is that: (1) it varies considerably from place to place and time to time; (2) individuals must be recruited and even coerced to take part in collective aggression; (3) the capacity for being aggressive does not demonstrate its fundamental necessity; (4) all of these.
58. For the most part, the avowed functions of a group: (1) represent the group goals which are actually sought; (2) may not be the same as its real functions; (3) directly determine the group's cohesiveness; (4) none of these.
59. The degree to which an individual perceives others as rewarding him increases his: (1) conflict-reduction; (3) (2) balance between internal psychological states and behavior; (3) motivation to be identified with them; (4) none of these.
60. The authors of "The Authoritarian Personality" concluded that: (1) the approaches of an individual to different areas of his life may be quite similar to each other; (2) a personality structure formed in childhood may lead to a particular political orientation in later life; (3) one basic personality pattern is more flexible and more "democratic" than another; (4) all of the above.
61. The inability to treat words and the things they stand for as separate is called: (1) linguistic relativity; (4) (2) ego-centric speech; (3) semantics; (4) semantic confusion.
62. The distinction between formal and informal groups rests mainly in the determination of: (1) the source (1) of the group's structure; (2) members' satisfactions;

- (3) group cohesiveness; (4) the degree to which the group persists over time.
63. Research on resistance to persuasion indicates that:
 (1) the forewarning of a desire to persuade tends to
 (4) bolster the audience's defenses; (2) self-esteem may increase resistance; (3) a communicator indicating a liking for the audience reduces resistance; (4) all of these.
64. The first two major textbooks in social psychology
 (1) appeared in: (1) 1908; (2) 1893; (3) 1920; (4) 1912.
65. Which personality trait is more likely to be found in the authoritarian personality than in the non-
 (1) ethnocentric personality? (1) holds conventional values; (2) internalizes socially unacceptable impulses; (3) has realistically appraised parents; (4) maintains self-independence.
66. The concept that language is the mediator through which cultural influences affect psychological processes is termed: (1) the semantic differential;
 (2) linguistic relativity; (3) the verbal community; (4) phonetic symbolism.
67. The most common measure of cohesiveness in use is:
 (1) group productivity; (2) conformity to group norms;
 (3) (3) group attraction; (4) social reality.
68. Festinger's concept of "insufficient rewards" refers to the proposition that: (1) the less the inducement,
 (3) the less the compliance; (2) the greater the inducement, the greater the compliance; (3) the less the inducement, the greater the compliance; (4) none of these.
69. An essential quality of social psychology, which makes it distinctive, is its focus upon: (1) the individual
 (1) as a participant in social processes; (2) the group as the major influence in social processes; (3) the interaction between groups; (4) the influence of society and culture.
70. According to the concept of "The Authoritarian Personality," those who are antisemitic will also be: (1)
 (4) anti-negro; (2) anti-democratic; (3) highly nationalistic; (4) all of the above.
71. Lewin's development of "group dynamics" emphasized:
 (1) the present psychological states of the individual;
 (4) (2) laboratory; (3) the relationship between the individual and the situation; (4) all of these.

72. Behavior conventionally expected in society, such as a food preference, is termed: (1) conformism; (2) congruence conformity; (3) movement conformity; (4) none of these.
73. The relationship of the validity and the reliability of attitude measurement is such that: (1) unreliability sets limits on validity; (2) validity sets limits on reliability; (3) validity and reliability are essentially independent of one another; (4) none of these.
74. When the expressed belief that an event will occur acts to increase the probability of the event actually occurring, this is an instance of: (1) cognitive dissonance; (2) social reality; (3) self-fulfilling prophecy; (4) the "human nature" fallacy.
75. Which childhood situation is more likely to have occurred in the non-authoritarian's life than in the authoritarian's life? (1) harsh parental discipline; (2) concern with family status; (3) unconditional love from parents; (4) hierarchical family structure.
76. The study of meaning is called: (1) denotation; (2) phonetics; (3) semantics; (4) syntactic logic.
77. In social psychology the term "psychology field" refers to: (1) the entire set of phenomena with which psychologists are concerned; (2) a person's own interpretation of his world; (3) the range or number of people affected by the individual; (4) the process of person perception.
78. The reliability of a measure means that: (1) it measures what it is supposed to measure; (2) it avoids bias from the framing of the questions; (3) it controls for constant errors of measurement; (4) it gives results which are consistent from one measurement to the next.
79. Group cohesiveness is essentially defined as: (1) the degree of social reality in a group; (2) overall attraction of a group to its members; (3) patterns of agreed-upon group communication; (4) the common goals of a group.
80. Rokeach defines dogmatism in terms of (1) authoritarianism; (2) closed-mindedness; (3) hostility; (4) dependency.
81. Languages can change in response to: (1) cultural innovation; (2) cultural contact; (3) the modeling influence of a prestigious person such as a king; (4) all of these.

82. The attachment a person feels toward others which gives him a place in society can be referred to as:
 (1) (1) social identity; (2) social support; (3) social reality; (4) social influence.
83. Miller and Dollard's concept of matched-dependent behavior pertains mainly to: (1) attitude formation;
 (4) (2) attitude change; (3) reciprocation; (4) imitation.
84. The study of population characteristics including numbers of people and their geographic distribution is called: (1) demography; (2) cultural anthropology;
 (3) genetic geography; (4) historicity.
85. Which of the following statements concerning dogmatic individuals and authoritarianism is true: (1) both
 (3) are inclined toward the political "left"; (2) both are inclined toward the political "right"; (3) authoritarians are usually inclined toward the political "right" while dogmatic individuals may be inclined either way; (4) dogmatic individuals are usually inclined toward the political "left" while authoritarians may be inclined either way.
86. The technical term for the "bow-wow" theory of language origination is the: (1) interjectional theory;
 (3) (2) theory of phonetic symbolism; (3) onomatopoeic theory; (4) none of these.
87. Inferences about underlying personality from typical behavior are: (1) usually made through projective
 (3) tests; (2) indicative of the dynamic aspect of personality; (3) likely to be misleading; (4) reasonably accurate indicators of the self-concept.
88. An acquired cognitive response which has the property of making a person react to things happening to another
 (3) person as if they were happening to him is a definition of: (1) primary imitativeness; (2) matched-dependent behavior; (3) identification; (4) modeling behavior.
89. Lewin's development of "group dynamics" emphasized:
 (4) (1) the present psychological states of the individual; (2) experimentation on small-scale social systems in the laboratory; (3) the relationship between the individual and the situation; (4) all of these.
90. In an autokinetic situation, with low and high dogmatic individuals, one would expect that: (1) low
 (2) dogmatic people would tend to agree more with a high status source; (2) high dogmatic people would tend to agree more with a high status source; (3) high

dogmatic people would tend to agree less with others regardless of their status; (4) high dogmatic people would tend to agree more with others regardless of their status.

91. Research by Hollingshead and Redlich in New Haven found that: (1) the prevalence of psychotic disorders was unrelated to social class; (2) the upper classes had a greater prevalence of psychotic disorders; (3) the lower classes had a greater prevalence of psychotic disorders; (4) lower classes had a greater prevalence of neurotic disorders.
92. Group structure refers to: (1) the distribution of group functions among members; (2) the communication network within the group; (3) the normative patterns within the group; (4) all of these.
93. Katz contends that creating ambiguity is the most apt strategy for changing an attitude which serves the: (1) (1) knowledge function; (2) value-expressive function; (3) ego-defensive function; (4) instrumental function.
94. Laboratory experimentation is the procedure of study in social psychology which is most highly: (1) naturalistic; (2) refined measurement; (3) controlled; (4) observational.
95. The more dogmatic an individual: (1) the less his cognitions are dependent upon external authority; (2) (2) the more his cognitions are dependent upon external authority; (3) the less resistive he is to acceptance of information that is contradictory to his system of beliefs; (4) the more cognitions he will have about objects that are negatively evaluated.
96. Which of the following would be least valid as a basis for defining the boundaries of a subculture: (3) (1) social class; (2) geographic area of residence; (3) intellectual capacities; (4) religion.
97. Several experiments indicate that a person placed in a more central position in a communication net will: (4) (1) evidence more assertive behavior; (2) report more involvement in the group's activity; (3) be perceived by others in the group as more important in determining the outcome of the group's activity; (4) all of these.

98. The functional approach to attitudes is mainly concerned with attitudes in terms of their: (1) (2) perceptual-categorical functions; (2) motivational functions; (3) adaptive functions; (4) dynamic functions for change.
99. The fact that social psychological phenomena involve ongoing processes means especially that: (1) independent and dependent variables must be clearly stated; (2) time relationships must be taken into account; (3) multi-causality must be studied; (4) research must be empirical.
100. A cognitive organization is considered to be closed to the extent that there is: (1) a high degree of (4) interdependence between central and peripheral beliefs; (2) a low degree of interdependence among peripheral beliefs; (3) dedifferentiation within the disbelief system; (4) all of the above.

APPENDIX B

ESSAY EXAMINATION ADMINISTERED
AS PART OF STUDY NUMBER TWO

APPENDIX B

ESSAY EXAMINATION ADMINISTERED AS PART OF STUDY NUMBER TWO

This is a test designed to measure how much of the material you have retained from the course in social psychology you took last fall term. Please do your best and be as explicit as you can.

1. Using the principle of "interaction" and your knowledge of interpersonal attraction, power, leadership and conformity, explain the phenomenon of "charisma."
2. Given that you understand the "psychosocio-cultural" approach to understanding, controlling, and predicting human behavior, use your knowledge of power, conformity, socialization, roles and role-strain to suggest actions that our society might take to reduce the likelihood of our continued involvement in wars.
3. Using your knowledge of socialization processes, competitiveness, conformity and role processes, describe what our society might do to reduce the production of "super-males" and "super-females."
4. Explain the dynamics of interpersonal attraction that are presently being used in our society for

mate-selection (romantic love), and explain why this process has proved to be maladaptive and pathogenic.

5. Using your knowledge of power, status and communication, leadership, and group productivity and satisfaction, explain how the present educational processes used in colleges and universities could be improved both from the student's viewpoint and from the long range viewpoint of society.

APPENDIX C

**SCRIPT USED DURING EXPERIMENTAL TREATMENT
SESSIONS IN STUDY NUMBER ONE
AND STUDY NUMBER TWO**

APPENDIX C

SCRIPT USED DURING EXPERIMENTAL TREATMENT SESSIONS IN STUDY NUMBER ONE AND STUDY NUMBER TWO

Today I would like to go over the tests that you took for me. I'm sorry that I was unable to score all of them but those of you who have unscored tests can still look at the answer sheets and gain some understanding of what the particular tests are measuring. Those of you who have your tests scored can take note of where you stand on the particular variables as I discuss their meaning.

First, let's look at The F Scale. This instrument was the product of research done during the late 1940's--following the Second World War. The research was undertaken in order to try to gain an understanding of the psychological roots of anti-semitism. As the research progressed, the investigators began to conceptualize anti-semitism as only one manifestation of a broader, more generalized personality, the authoritarian personality.

The F Scale was designed to measure authoritarian, or implicit anti-democratic trends, in a personality. The authoritarian personality was conceived of as being composed of nine different variables:

1. Conventionalism--rigid adherence to conventional, middle class values.

2. Authoritarian submission--submissive, non-critical attitudes toward authority of the in-group.
3. Authoritarian aggression--the predisposition to punish people who violate in-group values.
4. Anti-introception--opposition to introspective, imaginative thinking.
5. Supersition and stereotype--the tendency to believe in mystic determination of one's fate and to think in terms of rigid, compartmentalized categories.
6. Power and toughness--the tendency to show toughness, strong-willedness; the predisposition to identify with power figures.
7. Destructiveness and cynicism--the tendency to be cynical and hostile.
8. Projectivity--the tendency to believe that the world is full of dangerous and evil people.
9. Sex--the tendency to think that people in the out-group are involved in excessive and unacceptable sexual behavior (Robinson and Shaver, 1969: 224).

According to the authors of The F Scale, a high positive score is indicative of a high degree of authoritarianism. A person high in authoritarianism would then be expected to manifest the just-described characteristics in their lives. On the other hand, a person low in authoritarianism would not be expected to show evidence of these

nine variables in his life.

Next, let's look at the variable dogmatism as measured by The Dogmatism Scale. As was the case for the authoritarianism measuring device, the higher a person's score the more dogmatic he is said to be. Conversely, the lower the individual's score, the less dogmatic he is said to be.

The author of The Dogmatism Scale, Dr. Milton Ro-
keach, defines dogmatism as closemindedness; that is, a
closeminded person is characterized by (1) a predisposition
to reject beliefs that are different from his own, (2) a
low degree of interconnectedness or interrelatedness among
his various belief systems, and (3) the possession of a
larger amount of knowledge and ideas about objects and
situations that are positively evaluated than about objects
and situations that are negatively evaluated. The dogmatic
individual tends to form his cognitions (ideas, thoughts,
beliefs) about objects and situations more as a function
of irrelevant wants and external authority than as a func-
tion of reason and logic. The dogmatic person is likely
to be quite resistive to accepting information which is
contradictory or which goes against his own beliefs, and
the dogmatic individual is hesitant to endure close rela-
tionships with those who are different from him, parti-
cularly those with different beliefs.

On the other hand, the individual who scores low

on the dogmatism scale (40 is the lowest score possible and 280 is the highest possible score) is said to be open-minded. Rokeach states that the extent to which a person's belief systems are open is "the extent to which the person can perceive, evaluate, and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside" (Rokeach, 1960: 57). In other words, the openminded person can respond to information in a logical, rational and disinterested (meaning impartial) manner; he does not come to a particular situation with his opinions, beliefs and attitudes already formed. The openminded person is seen as more flexible and less rigid in his cognitions than is the closeminded individual.

Next, let's look at the Edwards Personal Preference Test. This test was designed as an instrument for use in research and counseling as a means of providing a relatively quick and convenient measure of a number of normal personality variables. The EPPS measures 15 of these personality characteristics; namely, achievement, deference, order, exhibition, autonomy, affiliation, intra-reception, succorance, dominance, abasement, nurturance, change, endurance, heterosexuality and aggression (Edwards, 1959).

If you will look at the profile sheet (hold up

example) you will see that an individual's score on each of these 15 variables is reported in terms of percentile. For example, if your score on achievement fell at the 85th percentile, you would know that only 15 percent of the individuals in the standardization group had higher achievement motive scores than you did. Or, if your achievement score placed you at the 20th percentile, you would know that your achievement score was exceeded by 80 percent of those in the normative sample.

Because of the limitations in time, we will only discuss one of the 15 variables--achievement need or motive. Individuals who score high on this variable are said to have the following manifest needs: to do one's best, to be successful, to accomplish tasks requiring skill and effort, to be a recognized authority, to accomplish something of great significance, to do a difficult job well, to solve difficult problems and puzzles, to be able to do things better than others, and to write a great novel or play. In general, if you are high in achievement motive, you will tend to perform better in occupational and academic goals, you will do better on immediate tasks when the purpose is to meet some standard of excellence, you will have a high level of motivation to finish incomplete tasks, you will tend to prefer to work with successful strangers rather than unsuccessful friends, and you will usually be socially active in your community and school.

Those individuals who score low--say below the 25th percentile--on the achievement scale on the EPPS are not necessarily conceptualized as being just the opposite of the high achievement individual. Rather, a low achievement score is seen as an indication that the individual is not motivated to achieve, accomplish, or reach some goal, for the mere sake of this achievement in and of itself. An individual with a low achievement score on the EPPS may well demonstrate a high level of apparent goal oriented motivation but, as the theory of achievement motivation suggests, this motivation will be related more to extrinsic rewards rather than to the accomplishment of the goal for accomplishment's sake.

Thus, the difference between a high and low scoring individual on the achievement scale is more in terms of his motivational dynamics rather than in his manifested behaviors. However, all things being equal and knowing nothing else about the individual, one would be more willing to predict achievement oriented behavior in a person whose achievement score was high than in a person whose achievement score was low. In short, the knowledge of an individual's achievement score on the EPPS is an aid to predicting his achievement oriented behaviors but the score, in and of itself, is not an absolute indicator of achievement behaviors since other factors such as fame or money or power may influence the behavior actually

exhibited.

Next, let's look at Rokeach's Value Survey Scales. This instrument is used for the purpose of assessing an individual's hierarchical arrangement of two kinds of values: instrumental and terminal. But before we talk about the difference between instrumental and terminal values it would perhaps be better to tell you what Rokeach means by the term "value." In his book, Beliefs, Attitudes and Values (1968: 159-160), Rokeach says that:

values...have to do with modes of conduct and end-states of existence. To say that a person 'has a value' is to say that he has an enduring belief that a specific mode of conduct or end-state of existence is personally and socially preferable to alternate modes of conduct or end-states of existence. Once a value is internalized it becomes, consciously or unconsciously, a standard or criterion for guiding action, for developing and maintaining attitudes toward relevant objects and situations, for justifying one's own and others' actions and attitudes, for morally judging self and others, and for comparing self and others.

With this definition of values in mind, note what Rokeach (1968: 160) has to say about the difference between instrumental and terminal values: "An instrumental value is...defined as a single belief that always takes the following form: 'I believe that such-and-such a mode of conduct...is personally and socially preferable in all situations with respect to all objects.' A terminal value takes a comparable form: 'I believe that such-and-such an

end-state of existence...is personally and socially worth striving for.'"

In the value survey that you have before you, the first list of 18 alphabetically listed values are terminal; that is, the first list is composed of various end-states of existence. The second list is 18 instrumental values, modes of conduct that one may see as personally and socially preferable. If you responded to this instrument, you might note what you considered to be the most and least important of the terminal and instrumental values. Such information has been found to have certain predictive validity; for example, the higher one ranks the terminal value "salvation" the more likely that individual is to be regular in church attendance (Robinson and Shaver, 1969: 463). As you might imagine the relationship between the rankings of certain values can also be used to predict certain behaviors. For instance, look at how you ranked equality and freedom and think about what this might mean regarding how you think about your own freedom in relationship to the freedom of others.

Finally, let's turn to the Sixteen Personality Factor Test. This instrument is an objectively-scored test designed to provide scores on sixteen functionally independent and psychologically meaningful personality traits. Because they have been established as unitary

entities in many research efforts dealing with various life situations, each of the sixteen measures provides a new piece of information about the individual.

Look at the profile sheet (hold up an example). As you can see, there are sixteen bipolar continuums on this profile sheet. The space between the ends of each continuum is divided into ten units or stens. An individual's responses to the questions are scored and then converted to sten units.

If a person's score on a particular scale is a sten of 1 to 3, then the descriptive terms on the left side of that continuum are said to apply to him. On the other hand, if his score is a sten of 8 to 10, the descriptive terms on the right side of the continuum are applicable. If his score is 4 to 7, the terms from either side of the continuum may be somewhat more applicable than the other depending on which side of the midpoint his score is located.

The sixteen personality bipolar continuums measured by the 16 P.F. are as follows: (1) reserved versus outgoing; (2) less intelligent versus more intelligent; (3) affected by feelings versus emotionally stable; (4) humble versus assertive; (4) sober versus happy-go-lucky; (6) expedient versus conscientious; (7) shy versus venturesome; (8) tough-minded versus tender-minded; (9) trusting versus suspicious; (1) practical versus

imaginative; (11) forthright versus shrewd; (12) placid versus apprehensive; (13) conservative versus experimenting; (14) group-dependent versus self-sufficient; (15) undisciplined self conflict versus controlled; and (16) relaxed versus tense.

In addition to these sixteen personality factors, this test can also be used to obtain four broad second order factors. These are adjustment versus anxiety, introversion versus extroversion, tenderminded emotionality versus alert poise, and subduedness versus independence. These second order scores are derived from the stens by the use of rather complicated formulas; for example, (write this on board):

```

"subduedness vs. independence
4 times sten on factor 9 =
add 3 times sten on factor 8 =
add 4 times sten on factor 4 =
add 4 times sten on factor 5 =
                                sub-total   =
subtract 3 times sten on factor 8 =
subtract 2 times sten on factor 3 =
                                Total       =
divide by 10 to give approximate
sten score for subduedness versus
independence" (Cattell and Eber,
1962: 22)

```

If the individual's score on this second order factor is a sten of 1 to 3, "he is likely to be a group-dependent, chastened, passive personality. He is likely to derive and need support from other persons, and likely to orient his behavior toward persons who give such support. However, if the sten is 8 to 10, the person will usually be an aggressive, independent, daring, incisive person. He will seek those situations where such behavior is at least tolerated and possibly rewarded, and is likely to exhibit considerable initiative" (Cattell and Eber, 1962: 22).

This ends my sessions with you. You may keep the tests if you wish. I will be getting in touch with each of you later on this year; I hope you will be willing to continue your participation in this project.¹

Thank you for your help.

¹This sentence was not used in Study Number One.

APPENDIX D

ASSIGNMENT SHEET USED IN
BOTH STUDY NUMBER ONE
AND STUDY NUMBER TWO

APPENDIX D
ASSIGNMENT SHEET USED IN
BOTH STUDY NUMBER ONE
AND STUDY NUMBER TWO

Psychology 330

Fall 1969

The two texts for this course are:

- (1) Principles and Methods of Social Psychology by Hollander
- (2) Current Perspectives in Social Psychology by Hollander and Hunt

Please purchase both books and make an earnest attempt to read the assignments before coming to class. These assignments, as well as the topics to be covered in each lecture, are as follows:

Week	<u>Assignment in Principles...</u>	<u>Assignment in Current...</u>	Lecture Topic
1	Chapters 1,2 & 3	Section I	An introduction to Social Psychology as a science
2	Chapters 4 & 8	Section II	Society, culture and group process
3	Chapters 10 & 11	Section III	The role of Personality Theory in Social Psychology
4	Chapter 9	Section IV	Language and communications
5	Chapter 7	Section V	Some dynamics of social interaction

Week	Assignment in <u>Principles...</u>	Assignment in <u>Current...</u>	Lecture Topic
6	Chapters 5 & 6	Section VI	Attitudes; their source, function and change
7	Chapters 12 & 14	Section VII	Intra-group processes: norms and conformity
8	Chapter 15 (pages 430-448)	Section VIII	Leadership: a transactional process
9	Chapter 15 (pages 449-459)	Section IX	Organizational theory
10	Chapter 13	Section X	Inter-group relations

The grade you receive in this course will be a function of (1) your performance in class, and (2) your performance on the final exam (a 100 item multiple choice test). Please feel free to schedule tutorials with the instructor if you have any questions or problems. The following books are placed on closed reserve at the library. You may find one or more of these helpful as the course progresses:

- (1) The Open and Closed Mind by Rokeach
- (2) Beliefs, Attitudes and Values by Rokeach
- (3) The Authoritarian Personality by Adorno, et al.
- (4) Basic Studies in Social Psychology by Proshansky
- (5) Current Studies in Social Psychology by Steiner
and Fishbein
- (6) Theories of Personality, First Edition by
Hall and Lindzey

APPENDIX E

**COMPARISON OF MEANS OF EXPERIMENTAL
GROUP AND CONTROL GROUP IN
STUDY NUMBER ONE**

APPENDIX E

COMPARISON OF MEANS OF EXPERIMENTAL GROUP AND CONTROL GROUP IN STUDY NUMBER ONE

Summary of means of the experimental group's and the control group's scores on the objective final examination, the objective final examination with the loaded items disregarded, and the loaded items scored independently--Study Number One.

	$\bar{X}$ for 100 item examination	$\bar{X}$ for examination with 25 loaded items disregarded	$\bar{X}$ for 25 loaded items scored inde- pendently
Experimental Group N=15	69.26	55.67	13.59 ^a
Control Group N=15	59.00	47.00	12.00

^aThe difference between means is not significant at the .01 level.



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Professional Thesis Preparation
Cliff and Paula Haughey
144 Maplewood Drive
East Lansing, Michigan 48823
Telephone (517) 337-1527

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