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A STUDY OF THE EFFECTS OF STUDENT ACCEPTANCE OF RESPONSIBILITY AND MOTIVATION ON COURSE BEHAVIOR

by

Joseph ALEXANDER Patton

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Committee in charge:

Assistant Professor Wilbert J. McKeachie, Chairman
Assistant Professor Elton B. McNeil
Assistant Professor John E. Milholland
Professor Helen Peak
Professor Alvin F. Zander

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by Joseph A. Patton

In this study an attempt was made to demonstrate the determinants and effects of acceptance of individual responsibility by students. The attempt involved three approaches: (a) a comparison of the effects of two methods of teaching,-- the usual, traditional, teacher-responsibility method and a student-responsibility method in which students were encouraged to accept responsibility; (b) predictions of acceptance of responsibility and other reactions early in a course from two motivational variables,-- dependence-independence of traditional authority figures and need Achievement; (c) predictions of certain reactions late in a course from a measure of the degree of acceptance of responsibility throughout the course.

The study was carried out in the introductory psychology course at the University of Michigan during the fall semester of 1953. The author taught the student-responsibility sections.

Group Comparison

The teacher-responsibility method was expected to minimize student acceptance of responsibility; the student-responsibility method was expected to maximize student acceptance of responsibility.

Two groups,-- the experimental group, subjected to the student-responsibility method, and the control group, subjected to the teacher-responsibility method,-- were compared. By the end of the course the members of the experimental group showed more satisfaction with the course and there were suggestions that they thought the course was very valuable, showed high interest in psychology and showed superiority in applying psychological

knowledge to a concrete problem,-- compared to the members of the control group. That these differences probably were due to acceptance of responsibility was indicated by the relationships of Overall Acceptance of Responsibility with these factors. The two groups were not different in learning measured by the usual multiple-choice, objective test nor in self-perceptions of the amount of learning.

Predictions of Behavior Early in the Course

Subjects for this and for the third part of the study were the students who were taught by the student-responsibility method. There were two independent variables,-- dependence-independence of traditional authority figures and need Achievement,-- and two dependent variables,-- subjective reactions plus acceptance of responsibility and frequency of participation in class discussions. Four hypotheses were tested: (1) dependence-independence would be monotonically related to subjective reactions plus acceptance of responsibility such that high independents would react more favorably than dependents; (2) dependence-independence would be monotonically related to frequency of participation such that high independents would participate more frequently than dependents; (3) need Achievement would be monotonically related to subjective reactions plus acceptance of responsibility such that high need Achievers would react more favorably than low need Achievers; (4) need Achievement would be monotonically related to frequency of participation such that high need Achievers would participate more frequently than low need Achievers. Hypotheses (1) and (3) were confirmed for the total group and for the women of the group. Hypotheses (2) and (4) were not confirmed.

Predictions of Behavior Late in the Course

The independent variable was Overall Acceptance of Responsibility and the dependent variables were subjective reactions and frequency of participation in class discussions. Two hypotheses were tested: (1) Overall Acceptance of Responsibility would be monotonically related to subjective reactions such that high acceptors would react more favorably than low acceptors; (2) Overall Acceptance of Responsibility would be monotonically related to frequency of participation such that high acceptors would participate more frequently than low acceptors. The two hypotheses were comfirmed for the total group and for the men of the group.

Conclusions

From this study two conclusions were drawn: (1) acceptance of responsibility by students was an important factor in their reactions to the course; (2) dependence-independence of traditional authority figures and need Achievement had differential effects on student behavior. Suggestions for further research involved refinement of measurement of acceptance of responsibility, refinement of the motivational measures used, and a search for other relevant motivational variables and for other kinds of student behavior.

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CHAPTER I

INTRODUCTION

In recent years, attempts to analyse the processes of college teaching have indicated an increasing awareness of the possible relevance of factors other than those traditionally considered to be related to the amount of intellectual understanding demonstrated by the student such as the kind, length, and frequency of tests or examinations. This changing and expanding approach to this problem area has shown itself in a number of ways. Some investigators have emphasized the patterns of behavior of teachers (2); some have emphasized personality characteristics of students (9); some have emphasized different methods of teaching in terms of their possible differential effects both upon the teacher and the students (10, 16).

Though not much research has been devoted to it, the importance of motivational or personality factors in student behavior has been receiving increasing attention. This approach suggests that groups of students differentiated in terms of such factors may show different patterns of behavior in response to the general academic situation and particularly to the class room situation. One promising study among the very few which has been carried out in this area, has dealt with the so-called "interaction" between student personality and different teaching methods (16).

The research herein reported, was an attempt to demonstrate differential effects on students of two different class room situations designed to produce differences in acceptance of responsibility and further, an attempt to predict differential responses by students in the class room situation on the basis of certain motivational variables.

The effect of the differences in teaching methods upon student attitudes and behavior is described in Chapter II, while Chapter III deals with individual differences in student responses to the situation where opportunities for students to assume responsibility are maximized. In Chapter IV is found a discussion of some general interpretations and implications of the study. Chapter V summarizes the study.

CHAPTER II

GROUP COMPARISON OF EFFECTS OF ACCEPTANCE OF RESPONSIBILITY

This section of the study was concerned with demonstrating that one particular aspect of the "student-centered" method of teaching would mediate certain effects in the students. This aspect was acceptance of responsibility by students due to intrinsic motivation to learn.

A Review of Some Relevant Literature

Birney and McKeachie (4) in their review of research in the teaching of psychology point out that the controversy between the proponents of "teacher-centered" and of "student-centered" methods of teaching has not led to clear results favoring one or the other of the methods in terms of formal course achievement. The authors, in describing these two methods, point out certain commonly accepted dimensions in terms of which the two methods may differ. It is interesting to note that although student responsibility is mentioned, it is not included in the formal list of dimensions. Possibly, this is because student responsibility, as a dimension, may be more general than the dimensions listed; or it may be operating as an assumption underlying the expected effects of "student-centered" methods of teaching.

Landsman (11), who conducted a comprehensive study, comparing "student-centered" teaching with a "teacher-directed" democratic discussion organized about a syllabus, found no significant differences

in outcome as measured by the Horrocks-Troyer tests, a local case history analysis test, Group Rorschach, MMPI, autobiographies, and student reactions.

Various studies tend to show that varieties of "student-centered" teaching have certain effects usually of an attitudinal, insightful, or emotional nature. Thus Bovard (5) and McKeachie (14) found that their "group-centered" class showed more insight into and understanding of the problems of the girl in the film "The Feeling of Rejection" than did the more traditionally handled class.

But why are the differences between these two methods of teaching not clearer and more systematic? It was a concern with this question which led to the emphasis in this study on acceptance of responsibility by students as a possible crucial factor in various course outcomes. Permissiveness by the instructor may pave the way for different effects in the students. Some students may perceive this as providing an opportunity for individual responsibility and consequently behave accordingly. However, some students may see the freedom they have been given as a means for "beating the course" involving little concern on their part with learning the content of the course. Thus, freedom may imply either responsibility or license. Possibly some of the contrary or inconclusive results already found were due to varying degrees of such student interpretations in classes.

Another factor in the "student-centered" method is the attempt to develop group cohesiveness. This factor also may lead to different effects. Norms and standards which develop in the group may or may not be conducive to attaining the goals of the course, either the goals held implicitly by the instructor or the goals held implicitly or explicitly

by the group or members of the group. Also, some students may not like the pressures exerted by the group and would prefer to exercise more initiative. Here again, these factors might be related to the contrary and inconclusive results previously found.

The theoretical position taken in this study would suggest that some of the effects claimed for the "student-centered" method of teaching derive from acceptance of responsibility due to intrinsic motivation to learn. The operation of intrinsic motivation would require the student to work autonomously in the introductory psychology course, would involve an interest in the ideas and implications of the subject matter selected or encountered, and would involve a personal involvement in the subject matter rather than a detached intellectual approach. Consequently, intrinsic motivation to learn would lead to greater understanding of the subject matter and its implications, to a longer retention of what was learned, and to more personal, emotional learning which would show itself in attitude changes, increased sensitivity to behavior in others, greater curiosity about human behavior, and greater ability to apply psychological knowledge. However, during one course, the intrinsically motivated student would not be expected to have "learned" more definitions and terms than the student who is extrinsically motivated because, for the former, the learning which takes place is difficult and time consuming due to the high frequency of personal changes which occur and due to the concentration of effort in certain areas.

For the reasons indicated above, the decision was made that acceptance of responsibility would receive the greatest emphasis both in planning the teaching method and in communicating it to the students.

Student-Responsibility Method of Teaching

Learning is a process in the student. Consequently, any method of teaching has meaning only in terms of the way or ways in which it allows or requires students to learn. Different or contrasting methods of teaching merely provide different kinds of conditions or pressures which may make differences in the processes of learning in students. Methods of teaching may then be thought of as manipulations of the situation within which students find themselves. To the extent that different manipulations lead to more or less learning, to different degrees of retention of what is learned, to different degrees or directions of application of learning,— to that extent the different manipulations and hence the different teaching methods have meaning.

In the student-responsibility method of teaching, the manipulations by the instructor are designed to allow or to require certain kinds of responses by the students. These responses may be described in the following terms: students should "get out" and learn the content of the course for themselves rather than rely solely on the instructor to make decisions for them and to provide information. In more general terms, the manipulations should allow or require the students to accept responsibility for their own learning and other course-related behavior.

What is acceptance of responsibility? For most people, it means taking initiative, making decisions, and behaving autonomously in some situation. In this study, as will be seen later, these commonly understood meanings constitute the conceptual definition of acceptance of responsibility. However, this response may be placed in a broader context. Acceptance of responsibility in a course may be produced either by intrinsic motivation to learn or by the necessity of complying

with pressures exerted by the class or the instructor or both.

Acceptance of responsibility produced by compliance with external pressures is probably little different from acceptance of responsibility in the usual teacher-responsibility course. In the latter situation, the teacher reserves the right to make certain decisions regarding assignments, tests, class procedures, and final examinations and acceptance of responsibility by students is likely to be compliance with the teacher-mediated pressures. Intrinsic motivation, as the cause of acceptance of responsibility, is the condition which was considered to be the crucial variable in terms of which teacher-responsibility and student-responsibility methods of teaching would differ. As will be indicated later, the operational definition of acceptance of responsibility which was used for the measurement of this response involved behaviors which would more likely stem from the condition of intrinsic motivation to learn than from compliance with external pressures. It would be difficult to argue that acceptance of responsibility as used and measured in this study and intrinsic motivation to learn are separate factors. Acceptance of responsibility was considered to be the manifestation of intrinsic motivation to learn at a level which could be observed.

It seems unlikely that widespread acceptance of responsibility because of intrinsic motivation to learn will occur if the traditional kind of classroom procedures are in force and the teacher merely exhorts his students to behave responsibly. Students have learned certain ways of behaving in courses, ways which all too often seem to involve and imply an expectation on their part that the teacher will take responsibility for deciding the "what, when, and how" of their

activities. This expectation is very likely to persist and have its influence on student behavior especially if the familiar trappings of the course such as assigned readings, tests, lectures, or even teacher-directed discussions, etc., are maintained.

To encourage students to accept individual responsibility for their behavior, one should arrange the situation in such a way as to preclude, as much as possible, the possibility of traditional student behavior while at the same time making especially clear the behavior that is possible to and expected of the students. Thus this method of teaching can involve much directive behavior by the teacher, especially at the beginning of the course, and in these terms it may be differentiated from the usually described "student-centered" method or manipulation.

One general way of effecting this response in students, or at least in creating a situation conducive to this response, is to allow, or even to force students to make certain decisions regarding their present and future activities in the course. Such decisions tend to "ego-involve" the students and it is this condition which is likely to facilitate the acceptance of responsibility for appropriate individual behavior both in and out of the classroom, leading to behavior consonant with the decisions made.

In this context, ego-involvement implies motivational involvement. When students decide on goals and means they are tacitly agreeing to be responsible for whatever degree of success or failure attends their activities. This should arouse intrinsic motivation to learn in those students who are predisposed to this kind of motivation. To the potentially extrinsically motivated students, the behavior of the instructor in requiring such decisions and the behavior of the other

students in making the decisions probably constitute pressures to conform to the decisions. Hence such students will tend to behave in accordance with the class decisions and the perceived requirements of the teacher. When these decisions emphasize individual responsibility for learning, these students will show individual initiative, even though they might prefer to behave otherwise. However, such behavior is likely to produce positive effects due to satisfaction with mastery of course content. Because of this, there is a possibility that these extrinsically motivated students will become, to some extent, intrinsically motivated. This change is less likely to occur in a teacher-responsibility course because responsible behavior of this kind is not required from the students.

On the basis of the theoretical arguments above, the student-responsibility method of teaching,— the manipulation of the course conditions to facilitate the influence of intrinsic motivation to learn and acceptance of responsibility,— involved the following decisions and procedures by the instructor. In general, an attempt was made to remove the familiar "props" which, for some students, might deter individual acceptance of responsibility. This was done by setting up certain conditions which would hold for the course and by requiring the students to make certain other decisions.[1] First, the students were told that there would be no final examination which would count toward their grades, no semester tests, no formal lectures by the teacher, and no assigned readings either in a text or in other sources. The students also were required to turn in reaction reports every two weeks (this will be discussed in more detail in the next chapter).

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[1]See Appendix B.

Second, they were required to decide whether they would all use one text or whether each individual would choose his or her own; which class procedure they would use; what kind and number of products would be required of them on the content of the course; which way or ways they would be graded; and the bases for the grades.

Not all the above decisions were made at the beginning of the course. Some were delayed for several weeks.[1] Some important decisions were: each student would choose his own text; the class would meet during the first hour of a two-hour session in small groups and during the last hour would meet as a complete group; there would be a student chairman for each meeting; students would turn in a comprehensive term paper or its equivalent in short themes, case history analyses, or analyses of experiments to count toward a part of the final grade in the course. These decisions were made by both sections though not, in all cases, at precisely the same stage in the course.

One decision was made at the end of the first two weeks of the course by the instructor to the effect that he would provide case history material to the students which they would use in class discussions until they indicated they wanted it dropped. This decision was based on the content of the first reaction reports in which there was a widespread desire for more specific topics. It was felt that case materials, while specific in one sense, would not prevent individual modes of approach to understanding human behavior and learning the formal content of psychology.

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[1]See Appendix A for a chronological account of course events.

The Design of the Study

The design considered to be the most appropriate for testing the effects of a student-responsibility method of teaching and thereby of acceptance of responsibility due to intrinsic motivation to learn was one in which the manipulation of the independent variable continued over a considerable period of time. Thus, this manipulation took place throughout the one-semester course in introductory psychology at the University of Michigan during the fall semester of 1953 for two sections composed of twenty-seven and thirty-three students respectively. The author was the instructor.

Certain measures were administered at the beginning and end of the course so that change over time could be determined. These measures were given to the two sections mentioned above (henceforth referred to as the experimental group) and also to three other sections of the same course taught by two other instructors in the traditional manner,— lectures, assigned readings, regular tests, common objective final examination, etc.,— (henceforth referred to as control group 1). In addition, one omnibus measure was administered to the experimental group at the end of the semester and to the members of one of the large lecture groups during the final examination period.[1] The latter group will be referred to henceforth as control group 2.

Anonymity was provided to the members of the experimental and control groups by the use of code numbers. The members of the experimental group gave their code numbers to the experimenter after they had received their grades in the course. This was necessary in order to make individual predictions about behavior (see next chapter).

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[1] See Appendix F.

Variables, Predictions, Results, and Interpretations

The Independent Variable

The independent variable was acceptance of responsibility,— a manifestation of intrinsic motivation to learn. It was expected that this response would be more frequent in the experimental group which was subjected to the student-responsibility manipulations throughout the semester. In this group, some students would start out in the course with active intrinsic motivation to learn and would show individual initiative, would follow up their own interests, would read in areas not necessary for products or for planned class discussions, etc. Other students, potentially extrinsically motivated to learn, would also behave in these responsible ways (though possibly not as quickly) because they would feel compelled to comply with the pressures exerted by the instructor and by the class. Some of these students, after they have accepted responsibility, and because of the effects of that response, would, to some extent, become intrinsically motivated to learn. In the control groups which were subjected to the teacher-responsibility manipulations the intrinsically motivated students would find it difficult to allow their motivation to determine their behavior because of the pressures to conform exerted by the instructor and probably, to some extent, by the class. These students would likely conform to these pressures and behave in the usual way,— studying and reading only that which is necessary for the tests and the final examination. The potentially extrinsically motivated students in the control groups would expect the instructor to set up the usual requirements and these expectations being confirmed, would behave accordingly. Therefore, the

response of acceptance of responsibility due to intrinsic motivation to learn would occur infrequently in the control groups.

To facilitate clarity of presentation, when the phrase, "acceptance of responsibility" is used hereafter, it will imply its restricted meaning of being an expression of intrinsic motivation to learn.

It was not considered sufficient for experimental purposes to assume that the student-responsibility manipulations for the experimental group and the teacher-responsibility manipulations for the control groups would produce different degrees of the independent variable even though theoretical reasons would suggest this. Festinger (8) and Wispe (17) have emphasized the crucial experimental requirement that the effectiveness of the manipulation of the independent variable be measured independently of its effects and that this measure should be considered an essential part of the independent variable, not a dependent variable.

It was possible in this study to have an independent measure of the independent variable and hence of the effectiveness of the two kinds of manipulations. This was a measure of attitude toward teachers, teaching, and the functions of education.[1] The experimental group and control group 1 took this measure at the beginning and at the end of the course. Consequently, it was possible to discover differences in the change of attitude which took place from the beginning to the end of the course.

This attitude measure was in three parts, each part corresponding to one of the three attitude objects indicated in the title. Each part

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[1]See Appendix E.

was composed of eleven statements and the task of the student was to rank the eleven statements from 1 to 11 with rank 1 indicating the statement with which most agreement was felt. Of the eleven statements in each part, three were consonant with an approval of a teacher-responsibility method of teaching (TR statements) and three with an approval of a student-responsibility method of teaching (SR statements).

There were three ways of computing a score, (a) ranks for TR statements were summed across the three parts (TR scoring), (b) ranks for SR statements were summed across the three parts (SR scoring), and (c) the discrepancy between TR scoring and SR scoring was calculated (TR minus SR scoring). TR scoring and SR scoring were not completely independent of each other since the attribution of ranks to one set of statements limited the number of ranks available for the other set. The TR minus SR scoring combined the two other ways of scoring and provided an overall measure of attitude. The decision to compute a TR minus SR score rather than an SR minus TR score was based on the fact that on both pre- and post-measures the two groups showed greater approval of SR statements.

The five additional statements in each part were introduced for two reasons, (a) to prevent an awareness of the dichotomous pattern in the remaining six statements and (b) to spread the ranks on the TR and SR statements for easier statistical treatment and the prevention of ties in scores.

As a measure of the effectiveness of the manipulation of the independent variable the changes in attitude from the beginning of the course to the end would be expected to be as follows: because the responses to the measure for the two groups probably were determined by

previous traditional, teacher-responsibility experiences, and because, for the control group, the experiences in this course would be very similar to these previous experiences, there should not be a significant change in attitude by the control group. The experimental group, however, would be subjected to a different kind of manipulation; hence, there should be significant changes. If the student-responsibility manipulation was effective, the experimental group should have changed by showing greater disapproval of TR statements, by showing greater approval of SR statements, and by showing greater TR minus SR scores.

The effectiveness of the manipulations was tested by the use of the Sign Test (6, pp. 247-251), a non-parametric test appropriate for use with data produced by the procedure of ranking. The statistical treatment used the combined data from the three parts of the attitude measure. Table 1 indicates the direction of changes in attitude which occurred for the two groups.

For the TR scoring the experimental group changed significantly in the expected direction ($P = .015$; one-tail) while the control group did not change significantly ($P = .175$; two-tail). For the SR scoring the experimental group did not change significantly though the change that did occur was in the expected direction ($P = .15$; one-tail). The control group did not change significantly (P greater than .25; two-tail). For the TR minus SR scoring the experimental group changed in the expected direction ($P = .09$; one-tail) while the control group did not change significantly (P greater than .25; two-tail).

These results suggest that the teacher-responsibility and student-responsibility manipulations of the independent variable,— acceptance of responsibility,— did have the expected effects. However,

it is not clear from this measure that these manipulations had strong effects. Two factors may have contributed to this. First, extreme changes in attitude in the expected direction would be unlikely to occur for the experimental group because the responses of this group (and of the control group as well) "piled up" at the ends of the attitude continuum at the beginning of the course in just the pattern which was expected to be shown by the experimental group at the end of the course. Consequently, there was not much room to change. Because of this, the changes which did occur may have been underestimated. The second factor was that the teacher-responsibility manipulation probably was not as extreme as it could have been. The instructors for the control groups probably could have structured their courses more, so that the external pressures against individual acceptance of responsibility would have been stronger.

TABLE 1

CHANGE IN ATTITUDE TOWARD TEACHERS, TEACHING, AND THE FUNCTIONS OF EDUCATION

Scoring	Exp. Group N = 59			Control Group N = 70		
	-	0	+*	-	0	+
TR	18	5	36	26	5	39
SR	25	1	33	32	5	33
TR-SR	21	4	34	35	9	26

*"+" indicates direction predicted for exp. group.

In addition to this independent demonstration of the effectiveness of the manipulation of the independent variable, it was possible to get some further idea of how the independent variable was operating for the experimental group. This was done by determining the relationships of the degree of acceptance of responsibility throughout the course (Overall Acceptance of Responsibility) with differences in those dependent variables on which the experimental and control groups differed. Anticipating some of the results which will be reported later, it was found that Overall Acceptance of Responsibility, for the experimental group, was positively related to certain of the differences found between the experimental and control groups. This suggested that the independent variable was operating as expected for the experimental group. However, because the measure of Overall Acceptance of Responsibility could not be obtained for the members of the control groups, it was not possible to consider this measure a second independent measure of the independent variable.

That the measure of Overall Acceptance of Responsibility was likely to have been a valid measure of the independent variable for the experimental group is indicated by the kinds of behavior on which it was based. Data came from four sources: (a) statements in the reaction reports such as "I'm finding plenty of time to prepare for class discussions and do outside reading as well.", "I have been reading such and such a book.", "I've been reading in this area which I've found interesting.", etc., (b) coming to the instructor with a topic for a paper already chosen rather than asking for a topic, (c) classroom behavior such as specific preparation for leading the discussion when serving as class chairman, and (d) indicating on the omnibus measure

given at the end of the course that reading was done other than that relevant to the class discussions and individual course products. The relevant statements, behaviors, and responses were assigned scores of plus one or minus one. A score of plus one indicated acceptance of responsibility while a score of minus one indicated rejection of responsibility. The measure of degree of acceptance of responsibility throughout the course (Overall Acceptance of Responsibility) was determined by computing the algebraic sum of the scores assigned to an individual student.

A further indication that Overall Acceptance of Responsibility was a measure of the independent variable was its relationship with the measure first considered (changes in attitude toward teachers, teaching, and the functions of education). Overall Acceptance of Responsibility tended to be related positively to the attitude changes for the experimental group such that high acceptors changed in the expected direction while low acceptors did not change or changed in the opposite direction. For TR scoring of the attitude measure the relationship was significant ($P = .025$; one-tail; Chi Square 2x2); for SR scoring the relationship was not significant; for TR minus SR scoring the relationship was almost significant ($P = .074$; one-tail; Chi Square 2x2). This pattern of relationship was the same as the pattern of the differences between the experimental and control groups in terms of attitude changes.

Overall Acceptance of Responsibility, in its relationships with those dependent variables on which the two groups differed, and in its relationships with changes in attitude toward teachers, teaching, and the functions of education, tended to support the previous conclusion that the manipulations of the independent variable were effective. The

argument supporting this interpretation was as follows: the attitude changes for the two groups suggested that the manipulations had the expected directional effects; different levels of Overall Acceptance of Responsibility were related to different degrees of the dependent variables such that high acceptors contributed heavily to the differences between the experimental and control groups. Therefore, since, within the experimental group, the relationship of Overall Acceptance of Responsibility with the dependent variables was in the same direction as the relationship of the independent variable, assumed to be present at two levels in the experimental and control groups, with the dependent variables, and since Overall Acceptance of Responsibility for the experimental group tended to be related to the attitude changes which constituted the independent measure of the independent variable, the conclusion was drawn that the primary effect of the manipulation of the control groups was a low level of acceptance of responsibility by the members of the control groups compared to the level of acceptance of responsibility by the members of the experimental group.

The Dependent Variables

It has been indicated previously that the effects of a student-responsibility course should be different from the effects of the traditional kind of course. Acceptance of responsibility should lead to deeper learning, greater retention, greater ability to apply the learning, and greater personal changes. In addition, students who accept responsibility should feel satisfied with their learning, with the course, and be more interested in the subject matter of psychology. These were considered as likely effects of the learning experiences of

students who had accepted responsibility for their own learning. Consequently, an attempt was made to measure some of these expected effects. The choice of the dependent variables was determined to some extent, also, by the desire to have the results of this study generalizable to previous studies of teaching methods, at least in terms of the dependent variables.

The dependent variables used in this part of the study are considered below and for each of them the operations, results, and interpretations are given.

Amount of psychological understanding[1]

This was measured by a fourteen-item, four-alternative, multiple-choice test. An effort was made in its construction to choose items which tested a variety of basic psychological principles without using many technical terms. The latter condition was suggested by the expectation that the members of the experimental group, due to the kind of learning experience they would undergo, would not be as likely to have learned as many technical terms as control group 1. This kind of measure of learning was chosen instead of the regular course examination for two reasons. First, the time available for the pre-measures indicated that a short measure was necessary. Second, and more important, was the belief that the course examination would not tap the effects of the kind of learning which would probably take place for the experimental group. No overt efforts were made by the instructor of the experimental group to emphasize certain areas of content nor was there any emphasis on learning for short-term reproduction. There was, however, a consistent effort to foster a norm in the experimental group to the effect that

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[1]See Appendix C.

understanding and long-term retention of ideas and considerations were more important than the usual effects of rote memorization. For these reasons, it was felt that the multiple-choice common final examination would not be an appropriate measure on which to compare the experimental with the control groups. The measure actually used was far from being appropriate to test the expected effects of a student-responsibility course but it was impossible to arrange for the control groups to take the kind of measures which would have been more appropriate,-- case history analyses, term papers, critical evaluations of research, papers dealing with implications of psychological principles for an understanding of social problems, etc.

Hypothesis 1.- Students taught in a student-responsibility manner will have learned as much psychology by the end of the course as students taught in a teacher-responsibility manner. In operational terms, there will be no significant difference in mean gain between the experimental group and control group 1 on the Psychological Understanding Test.

Operations and results.- The score for an individual on this measure was the sum of the items answered correctly. Since these scores were probably normally distributed, a parametric test of differences was appropriate. The two groups were not significantly different in mean gain. Therefore the hypothesis was not infirmed. Table 2 indicates the data and other differences tested.

TABLE 2

DIFFERENCES BETWEEN GROUPS IN TERMS OF AMOUNT OF PSYCHOLOGICAL UNDERSTANDING

Measure	Exp. Group N = 59		Control Group N = 72		Sig. of Differences between Groups
	Mean	SD	Mean	SD	
Pre-	9.79	1.60	10.15	1.36	P = .17 (two-tail)*
Post-	10.64	1.61	10.83	1.41	P = .48 (two-tail)
Gains	0.85	1.61	0.68	1.59	P = .54 (two-tail)
Change from pre- to post-measures: exp. group					P = .00007 (two-tail)
			control group		P = .0002 (two-tail)

*Appropriate critical ratio tests used for correlated and uncorrelated group comparisons.

Proverbs measure[1]

This measure was designed to measure both the amount of psychology learned and the ability to apply this learning to a situation which is more closely related to everyday living. There were eight proverbs and the students were required to indicate by a "T" those which were more true than false and by an "F" those which were more false than true.

Hypothesis 2.- Students taught in a student-responsibility manner will have learned and be able to apply as much psychology by the end of the course as students taught in a teacher-responsibility manner. In operational terms, there will be no significant difference between the experimental group and control group 1 in mean gain on the Proverbs Measure.

Operations and results.- The score for an individual on this measure was the sum of the items answered "T". Since these scores were

[1]See Appendix D.

probably normally distributed, a parametric test of differences was appropriate. There was no significant difference between the groups in mean gain. Therefore the hypothesis was not infirmed. Neither of the groups showed a significant change from pre- to post measures, though the control group tended to change in a positive direction. The two groups were significantly different at the end of the course at which time the control group scored higher. Also, the two groups tended to be different at the beginning of the course in the same direction as at the end of the course. Therefore the results for this hypothesis should be viewed with caution. Table 3 indicates the data and the differences tested.

TABLE 3

DIFFERENCES BETWEEN GROUPS IN TERMS OF THE PROVERBS MEASURE

Measure	Exp. Group N = 59		Control Group N = 71		Sig. of Differences between Groups
	Mean	SD	Mean	SD	
Pre-	6.03	1.33	6.38	0.98	P = .10 (two-tail)*
Post-	5.93	1.24	6.59	0.87	P = .0007 (two-tail)
Gains	-0.10	1.27	0.21	1.06	P = .14 (two-tail)
Change from pre- to post measures:			exp. group		P = .55 (two-tail)
			control group		P = .10 (two-tail)

*Appropriate critical ratio tests used for correlated and uncorrelated group comparisons.

Interpretations.- In terms of course achievement, as measured by the Psychological Understanding Test and by the Proverbs Measure, the results were somewhat ambiguous. About all that can be said is that

the Proverbs Measure did not seem to function systematically in either the context of a teacher-responsibility course or a student-responsibility course in terms of change over time.

As mentioned earlier, the measure of the degree of acceptance of responsibility throughout the course (Overall Acceptance of Responsibility) should have been related to changes that took place during the course for the experimental group. Overall Acceptance of Responsibility tended to be positively related to the amount and direction of change from pre- to post- measures on the Psychological Understanding Test ($P = .074$; one-tail; Chi Square 2x2) and the Proverbs Measure ($P = .042$; one-tail; Chi Square 2x2). This suggested that degree of acceptance of responsibility mediated increases in psychological knowledge and ability to apply this knowledge to non-academic problems. However, this interpretation should be viewed with extreme caution because of previous indications of unreliability of the Proverbs Measure and because Overall Acceptance of Responsibility only approached a significant relationship with changes on the Psychological Understanding Test.

Student Perception and Evaluation of the Course

Certain data were obtained on the omnibus measure which was called the Course Evaluation Form.[1] This measure was given to the experimental group during the last two weeks of the course and to control group 2 after completion of the final examination. This measure obtained data on a number of factors. The control group and the experimental group were compared on the following items which were

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[1]See Appendix F.

selected before analysis as items which would be likely to differentiate the experimental from the control group.

Item 2. How much understanding of human behavior would you say you've acquired in this course?

much _____ some _____ little _____ none _____

The significance of the difference between the proportion of each group who answered "much" was tested. The difference was not significant (P = .53; two-tail; critical ratio).

This item probably measured a self-estimate of amount of learning. It will be recalled that the experimental group and control group 1 did not differ significantly in psychological knowledge at the end of the course as measured by the fourteen-item test. Assuming that the two control groups were sufficiently equivalent in amount of learning in the course as well as being equivalent in that they were both subjected to the same teaching method manipulation, we can characterize this result in the following way: the self-perceptions of the experimental group tended to match their relative performance. This should be compared to the results obtained by Faw (7) and Asch (3). The former's "student-centered" class did better on the course examination than the "teacher-centered" class but thought they would have learned more if they had been in a "teacher-centered" class. The latter's students thought the "student-centered" class better in helping them to learn the content of the course but they actually scored lower than the students in the "teacher-centered" class. There were certain limitations in these studies related to the results reported. Both of Faw's groups spent two hours a week listening to lectures in the course. In terms of the measure of learning,— the final examination,—

the "student-centered" group probably was given more direction and summarized material by the lecturer than Asch's "student-centered" group which did not listen to lectures. Also, the latter group was told that the final examination would not count toward grades. Hence, there is a possibility that the motivation of its members was not as strong as the motivation of the members of the "teacher-centered" group for whom the final examination did count. Thus for each of these studies, certain factors may have tended to "contaminate" the results; the seeming contradiction in these results may have been more apparent than real. The result in the present study would tend to support this interpretation.

Overall Acceptance of Responsibility was positively related to the responses to item 2 by the experimental group (P = .09; two-tail; Chi Square 2x2).

Item 5. How much do you feel you have profited from your experience in this course as compared to other courses?

much less _____ less _____ about the same _____ more _____ much more _____

The significance of the difference in the proportion of each group responding "more" or "much more" was determined. The experimental group gave a higher proportion of such replies, and the difference approached significance (P = .08; two-tail; critical ratio).

Probably this item tapped a more complex factor than the previous item since it might imply much more than a self-perception of learning just in the context of this one course. It is interesting to note that while the difference between the groups was not significant,

still, for the experimental group, responses to this item were positively and significantly related to Overall Acceptance of Responsibility ($P = .0001$; two-tail; Chi Square 2x2).

Item 7. Have you become interested during this semester in taking further courses in psychology (assuming that you could arrange your courses as you would like)?

yes _____ no _____

There was no significant difference between the proportion of each group answering "yes." However, those who answered "yes" were asked to indicate those courses they would like to take from a list of courses with their titles which are given at the undergraduate level at the University of Michigan. The two groups were compared in terms of the mean number of choices per student; the experimental group indicated more choices than the control group and the difference was close to significance ($P = .057$; two-tail; critical ratio).

Guetzkow, Kelly, and McKeachie (10) had their students indicate the courses they would like to take from a list of undergraduate courses comparable to the list used in the present study. They found that the students who were in the highly-structured, recitation sections ("teacher-centered") showed a higher mean number of choices. It is difficult to compare this study with the present one in that the independent variable was different. However, it does seem that the student-responsibility manipulation of the present study facilitated the development of high interest in the field of psychology. This interpretation tends to be supported by the relationship of Overall Acceptance of Responsibility with the number of choices indicated by the experimental group. The

relationship was positive and significant (P = .013; two-tail; Chi Square 2x2).

Item 8. If you knew that Psych. 31 next semester would be the same kind of experience as it has been for you this semester, would you recommend it to other prospective students?

no _____ yes _____

comment (if you wish)

Because in the comments invited after this item, a large number of students in the experimental group made qualifying remarks to a "yes" answer, the proportion of "no" responses was compared for the two groups. The experimental group gave a lower proportion of such answers and the difference was significant (P = .04; two-tail; critical ratio).

This seems to indicate that the experimental group found the course more satisfying than did the control group. This is interesting in view of the fact that for the first few weeks of the course, the experimental group was negative in its reactions to the course. Presumably, as the course progressed and the students adapted to the new situation and as they accepted more responsibility, their reactions became positive (see Chapter III). This final positive reaction seems to be represented in the data here considered. This interpretation gains support from the relationship between Overall Acceptance of Responsibility and responses to this item (from "no" through "yes" to "it depends on the kind of person") (P = .005; two-tail; Chi Square 3x3).

Item 10. Why do students <u>not</u> participate in discussions in Psych. 31?

This item was designed to test the depth of learning of certain parts of psychology and also the ability to generalize this learning to

a concrete experience situation. The experimental group gave more reasons per student than the control group but the difference was not significant. However, when the responses were coded by the experimenter and by an outside coder[1] into two general categories, there was a significant relationship between the independent variable as represented by the control and experimental groups and the pattern of reasons given. For this test, only agreements between the two coders were used.

One category was labelled, "dynamic, motivational, or self-related reasons (locus of reason is inside the individual)" and included such statements as "fear of ridicule," "afraid of being analysed," "introvert," "ill at ease," "fear of being wrong," etc. The second category was labelled, "static, situational, or non self-related reasons (locus of reason is outside the individual)" and included such statements as, "to put some life in the course," "boredom," "because a few often monopolize the time," etc. The first category was believed to represent a more analytical understanding of psychological factors related to the behavior of participation in discussions.

The experimental group gave more responses in the first category then in the second with the control group showing the reverse pattern. The difference between the control and experimental groups for the two categories of responses was significant ($P = .0002$; two-tail; Chi Square 2x2).

This result indicates that the experimental group was able to apply its learning to this problem while the control group was less able to make this transfer. However, the experimental group spent practically the whole semester in discussions. Hence its members

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[1] W.J. McKeachie.

probably were faced with this problem to a greater degree than the members of the control group. That the members of the experimental group were able to apply their understanding of this problem may have been due to their "ego-involvement" in that very problem.

Item 11. Why do students participate in discussions in Psych. 31?

The purpose of this item was the same as for the previous one. And here also, the experimental group gave more reasons per student, though not significantly so, than the control group.

The responses were coded by the experimenter and two other outside coders.[1] Responses on which all three coders agreed were used. The same two categories of coding were used. There was no significant relationship between the experimental and control groups and the responses in terms of the two categories.

On the surface this seems like a strange result in view of the results with the previous item. One would expect that those who showed more understanding of why students do not participate in discussions would also show more understanding of why students do participate. However, if, as was suggested previously, the reason for the transfer of the psychological knowledge was the "ego-involvement" of the experimental group with the problem of non-participation, then this present result becomes more understandable. For the experimental group, participation was not the problem that non-participation was. The members of the experimental group were not as concerned with finding out why some of their class mates did talk in class as they were with discovering why the others did not talk. Therefore the experimental

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[1] A. Crofoot and M.J. Rosenberg.

group was probably fairly similar to the control group in terms of the degree of "ego-involvement" in understanding the reasons for participation and hence would not be expected to differ from the control group.

To summarize some of the results related to student evaluations of the course, Table 4 was constructed. It indicates the pattern of differences between the experimental and control groups in terms of those evaluation factors with which it was possible to determine the relationship of Overall Acceptance of Responsibility. The pattern was consistent though not based in every case on significant differences. The results tend to be consistent with the interpretation that the differences between the groups were due to different degrees of acceptance of responsibility.

TABLE 4

PATTERN OF DIFFERENCES BETWEEN EXPERIMENTAL AND CONTROL GROUPS AND RELATIONSHIPS BETWEEN THE SAME FACTORS AND OVERALL ACCEPTANCE OF RESPONSIBILITY ONLY FOR THE EXPERIMENTAL GROUP

Factors Assessed in the Course Evaluation Form	Differences between Exp. and Control Groups	Relationships with Overall Acceptance of Responsibility
Self-perception of learning item 2	P = .53*	P = .09**
Self-perception of value of course item 5	P = .08	P = .0001
Intensity of interest in psychology item 7	P = .057	P = .013
Satisfaction with the course item 8	P = .04	P = .005

*Values based on critical ratio tests of differences between proportions. Tests were two-tail.

**Values based on Chi Square tests of relationship. Tests were two-tail.

Some Limitations of the Group Comparison of Effects of Acceptance of Responsibility

In addition to the usual proviso which can be made regarding drawing conclusions from data based on less than perfect measuring instruments, there are other more specific reasons for caution in interpreting the results obtained.

Nowhere in this study were there controls for the possible differential effects of the personalities and skills of the different instructors involved, in conjunction with the teaching method manipulation used by each. While this constituted a basis for justified reservations regarding the interpretations of the findings, still it was unlikely that such a factor had much influence. Support for this comes from the study conducted by Guetzkow, Kelly, and McKeachie (10). In that study, three methods of teaching were used and eight instructors. The methods were, (a) a highly structured recitation-drill procedure, (b) a discussion method, and (c) a study-tutorial method. A conclusion of the study was that the "instructor-method interaction" was not significant.

The reliability of certain of the measures in the present study can be questioned. The Psychological Understanding Test, containing only fourteen items, may have been too short for significant differences between groups to appear. In addition to deficiencies due to its length, the Proverbs Measure may have been still more unreliable. There was no clear proof of this other than the fact that, in contrast with the former measure, it did not show significant changes from pre- to post-measures for the two groups.

Considerable reservation should be exercised in accepting the interpretations of differences on the items of the Course Evaluation Form.

These were single items which were interpreted as measuring various, fairly general factors. While the pattern of differences found was fairly consistent, these results and their interpretations should be considered as suggestive only.

Summary

A method of teaching called student-responsibility teaching, was described. It emphasized a relatively neglected dimension of both teacher and student behavior,— student acceptance of responsibility,-- which, on theoretical grounds, should facilitate more learning, better retention of the learning, and greater ability to apply the learning by the student.

Acceptance of responsibility due to intrinsic motivation to learn was the independent variable. The manipulation of this variable by the student-responsibility method of teaching was expected to allow those students who were intrinsically motivated to accept responsibility easily and quickly. The extrinsically motivated students would be forced to accept responsibility by the pressures exerted by the instructor and by the class and this responsible behavior was expected to generate positive effects so that some of these students would become intrinsically motivated to learn. The teacher-responsibility manipulation of the independent variable would tend to prevent any change to or development of intrinsic motivation to learn as well as to suppress the intrinsic motivation already present in some of the students.

Two sections of Introductory Psychology were taught by the author using the student-responsibility manipulation (the experimental group) while three sections taught by two other instructors were handled in the traditional, teacher-responsibility manner (control group 1).

The effectiveness of the different manipulations was checked by determining the pattern of changes in attitude toward teachers, teaching, and the functions of education which occurred for the experimental group and control group 1. The changes tended to be as expected indicating that the manipulations were effective to some extent in fostering acceptance of responsibility in the experimental group and in preventing changes in the control group. A measure of degree of acceptance of responsibility throughout the course served to substantiate the tentative conclusion above. This measure was only obtained for the experimental group. It tended to be related to the independent measure of the independent variable. It also tended to be related to the variables in which there were differences between the experimental and control groups. This was considered to indicate that the differences found between the two groups were due primarily to variations in the independent variable,— acceptance of responsibility due to intrinsic motivation to learn.

The experimental group and control group 1 were compared in terms of pre- and post-measures of certain variables. Two predictions were made: (1) the experimental group would learn as much psychology by the end of the course as the control group and (2) the experimental group would learn as much psychology and be able to apply it to a non-academic problem as the control group. Predictions (1) and (2) were not infirmed but certain characteristics of the measures suggested that the results should be viewed with caution.

The experimental group was compared with control group 2, a large lecture section of the same course, in terms of various items in an omnibus measure getting at various kinds of reactions to Introductory

Psychology and also measuring the amount of psychology learned and applied to a concrete behavioral problem. No predictions were made regarding the performance of the two groups on these items.

The results of the comparisons were as follows: the two groups probably were not different in self-perception of amount of learning. The members of the experimental group felt they had profited a great deal from the course while the members of the control group did not feel so positive. The members of the experimental group indicated greater interest in taking further courses in psychology than the members of the control group. Few members of the experimental group would not recommend this course to other prospective students whereas more of the control group would not do so. The members of the experimental group showed a deeper understanding of the reasons why students do not participate in class discussions than the control group. However, there probably was no difference between the groups in depth of understanding of why students do participate in class discussions.

Degree of acceptance of responsibility, a measure of the independent variable for the experimental group, showed positive, significant or almost significant relationships with increase in psychological knowledge, with increase in the ability to apply such knowledge, with self-perception of amount of learning, with self-perception of the value of the course, with intensity of interest in the field of psychology, and with satisfaction with the course (the last four relationships based on measures given at the end of the course only).

Figure 1 indicates in a schematic manner the design of the complete study including that part which has just been reported.

Independent Variables	Dependent Variables
Group Comparison of Effects of Acceptance of Responsibility	
1. Degree of acceptance of responsibility due to intrinsic motivation to learn. manipulations: teacher-responsibility for control groups and student-responsibility for exp. group. measure: change in attitude toward teachers, teaching, and the functions of education; Overall Acceptance of Responsibility measure for exp. group.	1. Amount of psychological knowledge learned. measure: Psychological Understanding Test. 2. Ability to apply psychological knowledge. measure: (a) Proverbs Measure. *(b) "Why do students not participate?" *(c) "Why do students participate?" 3. Self-perception of amount of learning. measure: *"How much have you learned?" 4. Evaluation of the worth of the course. measure: *"How valuable was the course?" 5. Interest in psychology. measure: *"Further courses you would like?" 6. Satisfaction with the course. measure: *"Recommend this course to others?"
Predictions of Behavior Early in the Course (Exp. Group)	
1. Dep-indep of traditional authority figures. measure: Guessing Test—4-alternative items in primitive culture terms; (a) "Direction only" scoring (b) "Direction and extent" scoring	1. Subjective reactions (like-dislike, pref. for TR or SR procedures, amount of felt learning) plus acceptance of responsibility. measure: coding of reaction reports for first two weeks. 2. Frequency of participation. measure: tally of freq. of participation during first two weeks.
2. Need Achievement. measure: projective measure developed by McClelland and his associates (13).	Same two dependent variables as indicated immediately above.
Predictions of Behavior Late in the Course (Exp. Group)	
1. Overall Acceptance of Responsibility. measure: coding of reaction reports, observations by instructor, responses to Course Evaluation Form (data summed for the whole semester).	1. Subjective reactions (like-dislike, pref. for TR or SR procedures, amount of felt learning). measure: coding of reaction reports, observations by instructor, responses to Course Evaluation Form (for last two weeks only). 2. Frequency of participation. measure: tally of freq. of participation during eleventh to fourteenth weeks.

Fig. 1. Overall design of the study.

*Data came from responses to a single item of the Course Evaluation Form.

CHAPTER III

MOTIVATION AND COURSE BEHAVIOR

In the previous chapter acceptance of responsibility by students was considered as it affected the responses of students considered as groups. This group comparison procedure served to indicate certain effects of acceptance of responsibility at a level which implied minimal concern with the individuals who made up these groups.

In the present chapter will be reported a different approach to understanding acceptance of responsibility as a factor in the behavior of students. This attempt represents a moving in on the problem of understanding acceptance of responsibility by trying to predict this response early in the course from certain motivational variables and by trying to predict the effects of acceptance of responsibility on behavior at or near the end of the course. For this part of the study there was little previous research to point the way in predicting course-related behavior by individual students.

Recently, Wispe (16) approached this problem when he identified three groups of students by their responses to a series of pictures similar to the TAT pictures. His three groups were: (a) the personality-insecure group (51 per cent of the sample), (b) the satisfied group (26 per cent of the sample), and (c) the independent group (23 per cent of the sample). He found that the personality-insecure student had

unfavorable attitudes toward permissive teaching, the satisfied student was favorably disposed toward either directive or permissive teaching, and the independent student preferred permissive teaching. The present study continued Wispe's work by specifying certain characteristics of students which were expected to be related to the response of approval or disapproval of the teaching method used. Also, these characteristics were expected to be related to other responses to the course.

Other research, not specifically related to methods of teaching, has demonstrated the relevance of certain motivational variables to behavior which is similar to classroom or course-related behavior. Probably the most systematic work in this area has been done by McClelland and his associates (13) with need Achievement and more recently still, need Affiliation.

The Design of the Study

The decision was made to attempt to predict two classes of behavior by the students in the experimental group at two times in the course,— at the beginning and at or near the end. The two classes of behavior were: (a) relatively private reactions to the course (liking for the course, preference for either teacher-responsibility class procedures or student-responsibility procedures, and amount of learning subjectively felt) plus acceptance of responsibility and (b) amount of individual participation in class discussions. These behaviors constituted the dependent variables.

"Dependence-independence of traditional authority figures" and need Achievement were used as the independent variables for predictions to behavior at the beginning of the course and degree of acceptance of

responsibility throughout the course as the independent variable for predictions to behavior at the end of the course (see Figure 1).

The Dependent Variables

The behavior of students varies. Some behavior seems to depend on obvious aspects of course administration. Some examples of such behavior would be: conferences with the instructor to discover relative standing in the course, asking or answering content-related questions in the classroom, overt verbal criticism of tests, etc. However, other behavior has been perplexing to the instructor because it seems to be independent of formal aspects of the course. Thus, how can behavior similar to the following be understood,— attempts to gain special attention from the instructor or fellow students, general disruptive classroom behavior, overt, non-specific criticism of the course or the instructor, etc.? The present study represents an attempt to understand some behaviors which seem to be in the same general category as those indicated immediately above.

Some students like a course while others do not. Some students would like the procedures of the course changed while others would oppose such changes. Some students feel that a course has been worthwhile while others do not and for either of these groups these evaluations do not always parallel the grade that was received. These "common sense" observations point to several kinds of student behavior with which this study was concerned.

One concern was with a general subjective reaction to the course and its effects. Originally, four relatively private kinds of behavior were distinguished,— relatively private in that the behavior is usually

kept secret from the instructor and to a lesser extent, from fellow students. The first was degree of acceptance of responsibility for behavior appropriate to the goals of the course, whether explicit or implicit. The second was the degree of liking or dislike for the course or specific aspects of it. The third was preference for certain mechanisms or class procedures. The fourth was the amount of learning which a student felt he was accomplishing. To a greater extent for the latter three than for the first, these behaviors or responses would be subjective evaluations of some aspect of the course.

The decision to choose these behaviors rather than others was based on a number of considerations. One concern of those who administer courses is the reputation which courses have or acquire. To a considerable extent, the reputation of a course among students is a function of the satisfaction with the course experienced by students who have already taken it. These students communicate their evaluations to prospective students. The latter, if they take the course, are likely to be influenced in their initial reactions, at least, by the expectations they already have. If such expectations are "negative", the student will tend to resist the possible intellectual stimulation of the course. Resistance to a course is likely to cause the student to consider passing the course a chore rather than the intellectually stimulating experience it should be. Such a student is likely to try to "get by" with a minimum of work. If the course is one in which memorization of material is likely to be all that is necessary to pass the final examination, then this is the procedure such a student is likely to adopt. The long term effects of such behavior for the student, for the course, and for the institution, would be undesirable. Understanding,

as compared with rote learning, is more likely to occur when the course is liked. Thus, in terms of this "public relations" consideration, liking for the course is an important factor.

Most educators would agree that a university education should involve more than the learning of facts and obtaining satisfactory grades. A student should have the opportunity to discover and develop fields of interest above and beyond the minimum "objective" requirements of the courses taken. Learning which will persist, and have an influence on self-evaluations, evaluations of others, and evaluations of the cultural milieu is less likely to occur where intrinsic motivation to learn is restricted by formal and rigid requirements which are relatively insensitive to individual styles and preferences. This points up the relevance of the category of behavior called "preference for teacher-responsibility or student-responsibility class procedures."

The frequent complaints by students that examinations often do not measure accurately the understanding acquired in a course indicate that students may be able to evaluate their progress and understanding. Since formal tests and examinations are not always good measures of this understanding or are not good measures for particular students, the response of "self-evaluation of learning" may get at a neglected but possibly valid indication of the effectiveness of teaching.

All of these considerations have practical implications. Theoretically, the four kinds of responses considered should be related to the two independent variables used to predict behavior early in the course. These theoretical implications and relationships will be developed later.

To measure these responses,-- acceptance of responsibility,

liking-dislike of course, preference for TR or SR class procedures, and amount of learning subjectively felt,-- a number of procedures were used. The primary one was coding of reaction reports which were turned in every two weeks. The students were required to answer three questions on the reaction report form: (a) How do you feel about the class procedures and class decisions? What is good and bad about the class procedures and class decisions? (b) In what ways could the classroom procedures be improved? What reasons do you have for these suggestions? and (c) What reactions do you have to what you have been reading or discussing in or out of class? Four coding categories were established, defined by specific responses given by students in the reaction reports.[1] As mentioned previously, the four categories were: (a) acceptance of responsibility, (b) liking for the course, (c) preference for student- or teacher-responsibility procedures, and (d) amount of learning subjectively felt.

The experimenter and two others coded the reaction reports.[2] The coding was done without any knowledge of how the students scored on the independent variables. Only the experimenter knew the students personally. The degree of agreement between the experimenter and the other two coders was not much different from the degree of the agreement between the other two coders themselves. Consequently, personal knowledge of the students probably made little difference in the coding by the experimenter.

The inter-coder reliabilities for each category and for all categories combined are indicated in detail in Appendix G. Reliabilities

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[1]See Appendix G for a detailed specification of the coding categories.

[2]Carol R. Slater and N.A. Carrier.

in terms of product-moment r were calculated. For the separate categories, r ranged from .49 to .94 and for all categories combined, r ranged from .76 to .82. All the r's were significantly greater than zero.

Because of the substantial agreement between the three coders, it was decided to sum the coded data from each coder for each student. Unfortunately, not enough students made comments which could be put into all four categories so that the N's for the categories, even for the first two weeks when practically everyone turned in a reaction report, were quite low in relation to the possible N for each. Therefore the decision was made to use the summed data for all categories combined. This procedure was possible since the hypotheses predicted the same pattern for each of the separate categories.

A second source of data was the observation by the experimenter of student behavior both in the classroom and in the experimenter's office during consultations. Almost all of these observations provided acceptance of responsibility data. The principal student behavior involved was either asking for a term paper topic or asking for approval of a topic already chosen by the student. The former was scored as rejection of responsibility, the latter as acceptance. Certain other student behaviors were precoded by the experimenter but such behavior occurred infrequently.[1]

A third set of data was obtained at the end of the course from responses to the Course Evaluation Form. A number of the items were precoded by the experimenter in terms of the four categories of behavior previously mentioned. In addition, free comments on the form, whether invited or not, were coded by the experimenter using the category

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[1]See Appendix G for more detail.

specifications for the reaction reports. The amount of data obtained by this coding was much less than that obtained from the direct responses to the items ("yes" or "no"; "much" or "little"; etc.).

The data from the three sources were combined additively. Since the reaction report data were composed, in most instances, of data summed for two or three of the coders, those data obtained from the Course Evaluation Form were doubled in an attempt to make such data equivalent in weight.

Because there was a steady decrease in the number of reaction reports turned in from the beginning to the end of the course,[1] the data were quite representative of the total group for the first two weeks of the course, less representative for the third and fourth, and fifth and sixth weeks, and very unrepresentative for the seventh to the fourteenth weeks. Since all the students took the Course Evaluation Form, the data for the fifteenth and sixteenth weeks were completely representative of the total group.

Data on this dependent variable ranged from a minus value to a plus value since each statement in a reaction report, or observed behavior, or response to an item in the Course Evaluation Form could either indicate rejection of responsibility (scored minus one), acceptance of responsibility (scored plus one), dislike of the course (scored minus one), liking for the course (scored plus one), etc. Henceforth, this dependent variable, summed across the four categories will be referred to as "subjective reactions plus acceptance of responsibility."

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[1]The only requirement that was reinforced verbally by the instructor throughout the course was that students were to accept responsibility for their own behavior.

The second dependent variable was amount of participation in class discussions. The choice of this behavior was suggested by practical and theoretical considerations. Practically, participation by students constitutes a "problem" for the instructor. How should he handle the student who monopolizes a great deal of the class time? What should he do about the silent student? What is the latter student like? Are there any approaches which are more likely to "draw him out" than others? These are practical questions and any information about students which might increase the understanding of why they do or do not participate is desirable. Participation is a means by which a student checks the correctness of his understanding of various parts of the content of the course. This is a mechanism which facilitates learning. Hence, frequency of participation should be related to amount of learning. For these practical and theoretical reasons, frequency of participation is likely to be an important behavior.

The frequency of participation data were obtained by the experimenter who tallied participations by students during the complete group discussions which took place during the second hours of twice-weekly, two-hour sessions. During the first hour of each session, the total group was split into small discussion groups at which time reliable records of participation were impossible to obtain. A record of absences was made and chairman duties were recorded for each student. The participation score was the number of participations per student per session present and not acting as chairman, divided by the number of such sessions in consecutive two-week periods. Since, in some sessions, the classes were involved in making class procedural or grading decisions, when no participation records were kept, the computation of

the average number of participations per session was based, for certain two-week periods, on fewer than the usual four sessions.

Participation data were most representative of the total group during the first two weeks (no absences and no chairman duties) and representativeness dropped steadily, though not greatly, throughout the semester. Compared to the subjective reactions plus acceptance of responsibility data, the frequency of participation data were more representative throughout the whole semester except for the last two weeks (thirteenth to fourteenth) during which participation data were obtained. During the fifteenth and sixteenth weeks the students discussed the present study and during this period no participation data were recorded.

The measurement of frequency of participation was very reliable since this involved only tabulating the number of participations per session for each student. The reliability of the behavior itself was checked by comparing frequency of participation for the ninth and tenth weeks with that for the eleventh and twelfth weeks. These two periods were chosen because, by then, the students should have become accustomed to the course and its procedures and participation should have stabilized. Over these four weeks, participation was quite reliable (P less than .00001; two-tail; Chi Square 2x2).

The Independent Variables

Dependence-independence of Traditional Authority Figures

One way of relating to other individuals is by depending on these people for various kinds of satisfactions or by rejecting this kind of relationship and "depending" on one's own resources for the

same satisfactions. This dimension of relationship from dependence to independence may be further specified as to the kind or class of people with which the relationship is established. One class of such people includes those who have been, in the past, or are, at present, in authority positions for the individual concerned.

Parents, policemen, teachers, etc., qualify as authority figures for most people. The reasons for this are probably many but one of the most important is related to early socialization practices. Parents, in our culture, are the primary authority figures; they mediate, often in an arbitrary manner, the rewards and punishments which the growing child experiences. From the child's point of view, doing what the parent desires, or leaving decisions to the parents, coming to the parent for comfort when emotionally disturbed, or coming to the parent for help in meeting, overcoming, or escaping physical dangers or challenges, leads, in many cases, to a satisfying, pleasurable state of affairs such as expressions of affection and concern by the parents. These behaviors, when repeated often enough, and when they lead to the effects above, tend to mediate the establishment of some relatively permanent predisposition to relate to the parent in just such a way and for just such reasons, and this kind of relationship, in anticipation and in actuality, becomes pleasurable. These socialization practices would seem to be especially related to the development of a strong dependence on the parent.

Teachers have been invested with the power to reward or punish the behavior of their students. It would be expected that the child who is psychologically dependent on his parents would easily become dependent on his teacher. This may occur because of the exercise of

power over the child by the teacher, because the child generalizes his predisposition to dependence to the teacher, and, finally, because the parents reward dependent behavior toward the teacher. Because of these factors, the teacher usually becomes a secondary authority figure for the child who is dependent on his parents. The remarks above indicate how the condition of dependence on parents and secondarily on teachers may become established. Some of the conditions favoring the development of independence will now be indicated.

As for the development of psychological dependence, the behaviors of the parents probably are quite crucial in the development of psychological independence. Some parents, when their children reach that age when the former think they should begin to "fend for themselves", apply pressures to their children to behave in an independent manner in some areas of behavior at least. Their children should dress themselves, should get out and play with other children, should handle their own squabbles with playmates, should make decisions regarding the way they handle their work and free time (usually within some limits imposed by the parents), should think seriously about their future careers,— in general, throughout the period from childhood to adulthood, they should behave more and more independently, should come to depend less and less on the parents for decision making, emotional support, and physical protection and support.

Not all parents apply such pressures at the same stage of development nor in relation to the same areas of behavior. But many parents, aware of the general cultural value ascribed to independence as a way of life, do make some efforts to force their children in this direction.

Children respond to these pressures in different ways. Everyone starts out in life being dependent on the parents for the satisfaction of biological needs. The condition of psychological dependence develops very easily from this prior condition of biological dependence. Independence training may "take" well with one child and poorly with another. This may be due to the age at which such training is instituted, to the scope of behavior involved, to the intensity of psychological dependence present, to the agreement or contradiction of peer group values and pressures related to the training, and probably also to certain personality or temperamental factors of which little is known.

It is possible to consider two kinds of independent people. One is the person who prefers to behave independently in as many situations as possible and the other is one who behaves independently in certain situations as a revolt against the parents or parent surrogates. The negative reactions of the latter toward the parents may be the result of processes involving complex personality factors such that an unconscious dependence is reacted to by behaving in the opposite manner consciously; or they may stem from disappointments with the parental ideal because of previous behavior by the parents; or they may stem from feelings of rejection by the child if the parents force him into independent behavior when he has developed a strong dependence on them. The reactive independent, in many cases, will find additional support from the peer group. One might speculate that such people would be likely to be quite dependent on the peer group, this being, in effect, a continuance of the earlier dependence on the parents.

The school teacher, being an easily identifiable parent substitute, often will come to have the same properties as the parents,

eliciting expectations and reactions which are historically appropriate to the parents. Thus independent students will perceive the directive teacher as a block to the satisfaction of their desires to behave independently.

How would dependence or independence be related to the behavior of students in a university course? The dependent student, since he obtains satisfaction from a dependent relationship with an authority figure, would be likely to try to establish the same kind of relationship with the instructor. He would prefer to have the instructor make decisions for him; he would approve of class procedures which would allow him to maintain the dependent relationship; he would feel satisfied with a teacher-responsibility method of teaching. In a student-responsibility class he would anticipate frustration of his need for a dependent relationship with the instructor and hence would have negative evaluations of the course and would not be likely to accept responsibility quickly. The independent student, on the other hand, would perceive a student-responsibility class as one in which he would not be forced to behave in a dependent manner; he would anticipate being free to behave independently in many situations. Since independence of traditional authority figures had previously been satisfying, he would, in this class, anticipate satisfaction of his need to be independent and hence would evaluate the course positively. For these theoretical reasons, the variable of dependence-independence of traditional authority figures was considered to be a promising predictor of the dependent variables.

Certain objectives of a liberal education were considered to be relevant to the choice of this independent variable. An educated person should be able to assess his problems, his own potentialities, and make

considered decisions independently. This ability is not likely to be developed or improved under a system of education which requires conformity by students. Certainly, it was not expected that one exposure to a student-responsibility course would change dependent students into independent students. But there was a possibility that these students would learn, at least, that there was another way of approaching education which could also be satisfying.

The measuring instrument

A search of the literature indicated that there are no measures already developed which tap this particular factor alone. The closest approach to one is the F Scale (1), an omnibus measure of a certain personality syndrome which includes many factors other than dependence-independence. Consequently, a measure of dependence-independence of traditional authority figures was constructed by the author.

This dependence-independence measure might be described as a semi-projective test. It was composed of six items, each with four alternatives. The "lead" to each item was a description of some situation which was set in terms of the conditions of some primitive culture or combination of primitive cultures and had, as the principal character, someone with a strange name. An effort was made to develop "leads" and alternatives which would be difficult to identify with common situations in our culture,— to make the situation as ambiguous as possible. The four alternatives of each item dealt with possible behaviors in relation to either a traditional authority figure or a peer group authority figure. Also, each alternative involved either a dependent or independent behavior. To help prevent identification of the

situation with some situation in our culture and particularly with the personal experience of the respondent, the measure was called a guessing test and each item included as the final statement of the "lead",— "Guess what ' ' did."

To obtain as much information as possible from this measure, respondents were required to rank each alternative from 1 to 4 where 1 represented the most likely behavior and 4 the least likely.

For this measure it was possible to derive two ways of scoring the responses.[1] The first was by summing the dependent reactions on the six items, summing the independent reactions, and then calculating the net effect, either dependent or independent (henceforth referred to as "direction only" scoring). The second method involved, in addition to the operations above, calculating the extent of the differences in rank between the dependent or independent alternatives given higher rank and their counterparts. This involved only the traditional authority alternatives as in the previous method of scoring. Consequently this latter scoring took into account the "intensity" of the reactions to the alternatives as well as their "net directionality." This scoring will be referred to henceforth as "direction and extent" scoring.

The dependence-independence measure went through a number of revisions during pre-testing[2] in which certain items from the F Scale were used as a cross-validation measure and in which also, a number of "experts" evaluated the face validity of the measure.

The original form of the dependence-independence measure was checked against eleven items of the F Scale (1, pp. 255-262). These

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[1]See Appendix H for more detail.

[2]See Appendix H for copies of the forms used in the pre-testing.

eleven items were selected from two clusters which, in terms of their meaning, should be related to dependence-independence of traditional authority figures. The clusters sampled were,-- "Authoritarian Submission" and "Authoritarian Aggression." These two clusters contained fifteen items, eleven of which were in the top half of the ranks on discriminatory power for the total scale. These eleven items were selected for cross-validation purposes. The relationship between the eleven items of the F Scale and the original dependence-independence measure was not significant for either "direction only" scoring or "direction and extent" scoring ($P = .29$ and $P = .70$; two-tail; Chi Square 2x2). An analysis of the internal consistency of the measure suggested certain revisions of which the principal one was the dropping of one item from the measure. This was done and a new item was constructed. The result of these revisions was the second form of the measure.

The relationship between the eleven items of the F Scale and the second form of the measure was not significant for either of the ways of scoring. Nineteen graduate students in psychology were asked to rank the four alternatives for each item from extreme independence to extreme dependence assuming that dependence or independence in relation to a traditional authority figure was more extreme than dependence or independence in relation to a peer group authority figure. Substantial disagreement among the "experts" occurred only for two of the items and for two alternatives only of each of these two items. On the basis of these rankings, these alternatives were reworded. The result of these changes was the final form of the measure.

The validity of the final form was checked by comparing it with the eleven items of the F Scale and with the complete F Scale.

A section of Introductory Psychology, not otherwise involved in this study, was given the final form of the dependence-independence measure and also the complete F Scale. For "direction only" scoring, the final form was related to the complete F Scale ($P = .03$; two-tail; Chi Square 2x2). For "direction and extent" scoring, there tended to be a significant relationship ($P = .06$; two-tail; Chi Square 2x2). The relationships with the eleven items of the F Scale, which were used for the previous pre-tests, were not significant though they tended in the same direction ($P = .22$ and $P = .13$; two-tail; Chi Square 2x2). For all of these relationships, high F Scale scores (high authoritarian) were likely to be associated with dependent scores and low F Scale scores were likely to be associated with high independent scores. These results suggested two things. First, the eleven items of the F Scale may have measured differently when they were isolated than when they were imbedded in the complete F Scale. This may have accounted for some of the discrepancy in P values at earlier stages in the pre-testing from the values obtained with the final form. Second, the final form of the dependence-independence measure seemed to have some validity as indicated by its relationship with the complete F Scale. The degree of the relationship indicated that a considerable amount of the variance in the dependence-independence measure was still not accounted for by the F Scale. Some of the remaining variance could have been due to the factor of dependence-independence of traditional authority figures. This interpretation tended to be supported by the substantial agreement among the "experts" in their rankings of the alternatives.

Hypothesis 1

Dependence-independence of traditional authority figures will be monotonically related to subjective reactions plus acceptance of responsibility early in the course.

Independent students, when they have learned how the course will be run, will anticipate satisfaction of their desires to behave independently, to use their own initiative, to follow their own interests, to be relieved of the necessity of acceding to a large number of demands by the instructor, to contribute to decisions affecting the procedures of the course, etc. This anticipation of future satisfaction will mediate favorable responses to the course.

Dependent students, when they have learned how the course will be run, will anticipate frustration of their desires to behave in a dependent manner toward the instructor,— to accede to reading and test assignments, to leave procedural decisions to the instructor, etc. Expectations that the instructor will make decisions and accept responsibility will, in anticipation, not be confirmed. Hence, these students will respond unfavorably toward the course.

These reactions, early in the course, would likely be determined primarily by the expectations deriving from the needs of the students and only secondarily by the effects of actual experiences in the course. It would be expected then, that the predicted relationship would more likely appear during the first two weeks of the course before the effects of experiences in the course had become too numerous and had taken over more of the determination of the reactions.

Hypothesis 2

Dependence-independence of traditional authority figures will be monotonically related to frequency of participation early in the course.

Independent students, when they have learned how the course will be run, will participate a great deal in content-related class discussions because such behavior will represent independence in relation to the instructor and because such behavior will be seen to be instrumental to the goal of learning psychology.

Dependent students, on the other hand, will not participate much because such behavior has previously been elicited by requests by the instructor and in this course the instructor will not direct the discussions formally.

Operations

In operationalizing the two hypotheses above, the decision was made to split the total group into three sub-groups,— a high, a middle, and a low group,— in terms of dependence-independence of traditional authority figures and to compare the two extreme groups if the means of the three groups were monotonic. A second decision was made to check the hypotheses for men and women separately as well as for the combined group. These decisions were based on two considerations. First, the use of high, middle, and low groups would allow the discovery of non-monotonic relationships, if they should exist, which would not be possible with a two-group comparison. Second, much of the work which has been done with need Achievement has used these procedures. To facilitate comparability of results, it was decided to use the same procedures for the treatment of need Achievement; and to have a

consistent manner of treatment throughout the study, the same decisions were made for dependence-independence of traditional authority figures and for Overall Acceptance of Responsibility,— the other two independent variables besides need Achievement.

The decision was made to use the subjective reactions plus acceptance of responsibility data and frequency of participation data which were produced during the first two weeks of the course. This decision was based on the following considerations: (a) this behavior occurred at a time which was closest to the time when the independent variable was measured; (b) theoretically, as indicated earlier, the independent variable might have its strongest effect during the first two weeks of the course; and (c) the data obtained during this period were more representative of the total group and of sub-groups in terms of the independent variable than for later periods during the first half of the course (see Figures 2 and 3 for indications of the differential representativeness of the dependent variables for dependence-independence of traditional authority figures).

The three sub-groups of the independent variable were: (a) dependents; (b) moderate independents; and (c) high independents. The sub-groups were determined by breaking into equal thirds the distribution of scores for the experimental group and control group 1 combined. When the splitting points were applied to the experimental group only, the moderate independent group turned out to contain a larger number of students than either of the other groups. However, this grouping was retained because the larger sample on which it was based was likely to be a more representative sample of the students taking Introductory Psychology. For the experimental group, the splitting

points were the same for each sex.

The predictions based on the dependence-independence measure may have been reduced in efficiency due to some selective factor operating such that fewer dependent students were found in the experimental group than in control group 1. To document this possibility, percentages scoring in a dependent manner for the two methods of scoring were computed. For "direction only" scoring, 27.9 per cent of the control group and 15.5 per cent of the experimental group were dependents; for "direction and extent" scoring, 34.9 per cent of the control group and 24.1 per cent of the experimental group were dependents. Also, within the dependent group, the control group scored more extremely in the dependent direction. With the procedure of splitting the distribution into equal thirds to get three groups, even though the cutting points were determined on the basis of the combined experimental and control groups, there still would be some tendency for the dependent group of the experimental group to be both smaller and less dependent than the dependent group based on the combination of control and experimental groups.

The Mann Whitney test was used to compare groups (12, 15). This test is non-parametric and its power compares quite favorably with the t-test, especially for small samples.

Results and interpretations

While the hypothesis that dependence-independence of traditional authority figures would be monotonically related to subjective reactions plus acceptance of responsibility early in the course was not confirmed when tested by "direction only" scoring (see Figures 4, 5, and 6), it

was confirmed when tested by "direction and extent" scoring (see Figures 7, 8, and 9) for the total group (P = .05; one-tail; Mann Whitney) and for the women (P = .05; one-tail; Mann Whitney), but not for the men. For the total group and for the women, the high independents reacted more favorably than the dependents.

The hypothesis that dependence-independence of traditional authority figures would be monotonically related to frequency of participation early in the course was not confirmed (see Figures 10, 11, 12, 13, 14, and 15).

Since the latter hypothesis was not confirmed, and since participation and its measurement were quite reliable, some discussion of possible reasons for the result is appropriate. As in almost any prediction to human behavior, there is the possibility that the most relevant independent variable was not used. However, while realizing this possibility, there still were some indications in the data suggesting another possibly relevant factor. For "direction only" scoring, there was a significant non-monotonic relationship for the total group (P = .05; two-tail; Mann Whitney) and for the men (P = .05; two-tail; Mann Whitney) such that the high independents and the dependents participated more frequently than the moderate independents. These relationships were not significant with "direction and extent" scoring. They may suggest that the factor of "intensity" of needs or predispositions might be more related to frequency of participation than the factor of "directionality." This was a speculation, however, which could not be checked in this study.

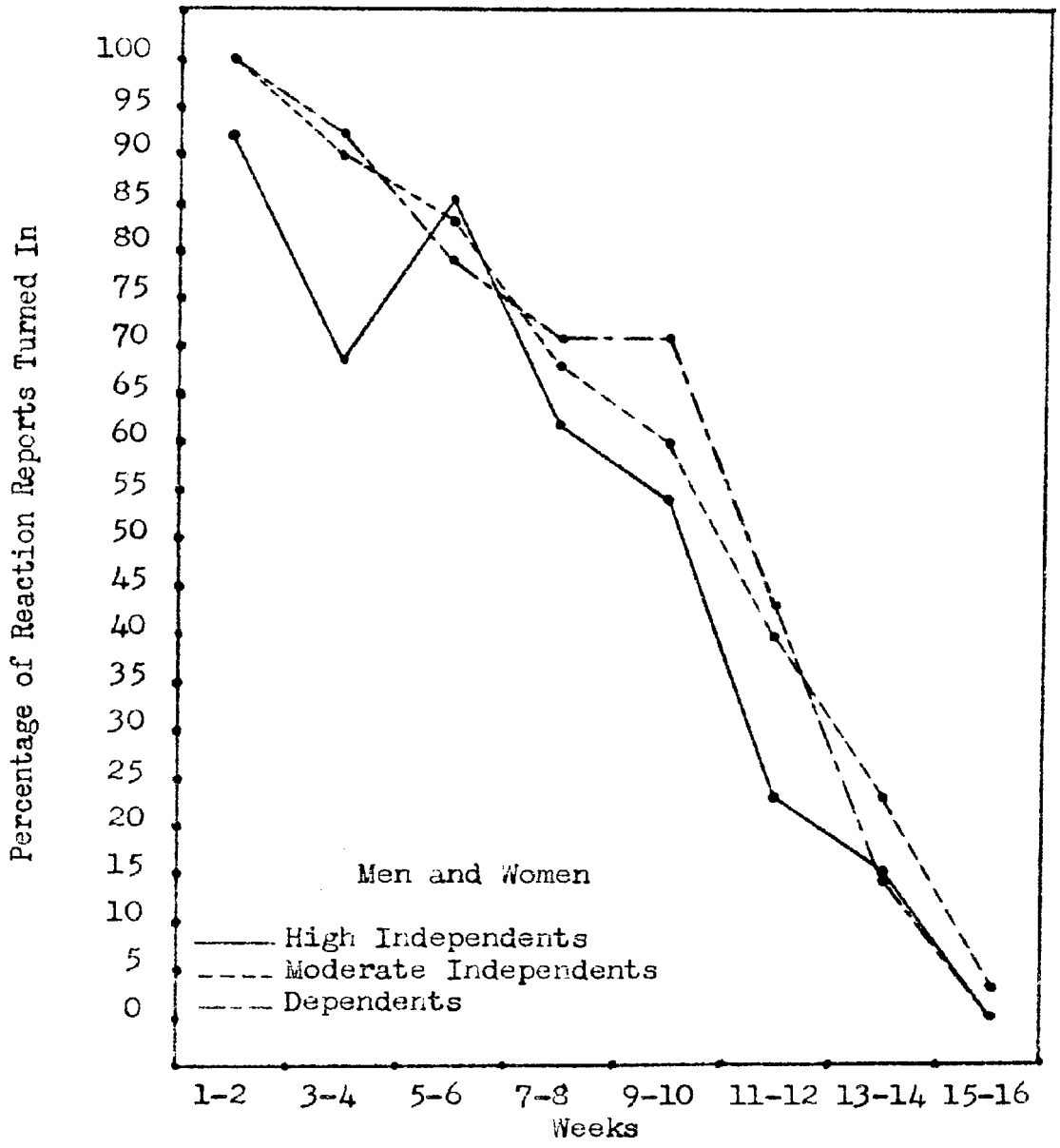


Fig. 2.--Representativeness of subjective reactions plus acceptance of responsibility data for sub-groups in terms of dependence-independence of traditional authority figures ("direction and extent" scoring). Size of groups: high indep 16
mod indep 28
dep 14

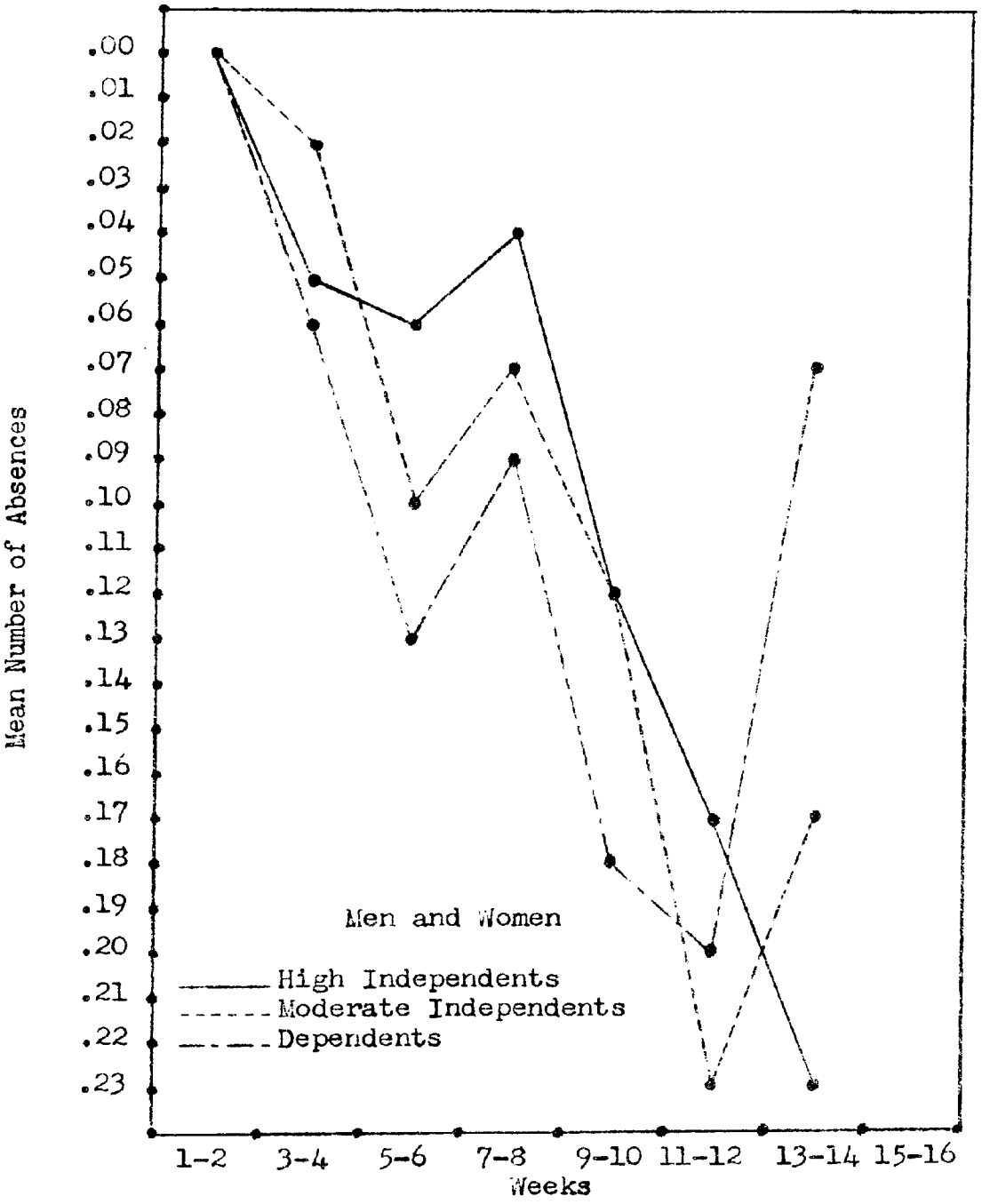


Fig. 3.--Representativeness of frequency of participation data for sub-groups in terms of dependence-independence of traditional authority figures ("direction and extent" scoring).
Size of groups: high indep 16
mod indep 28
dep 14

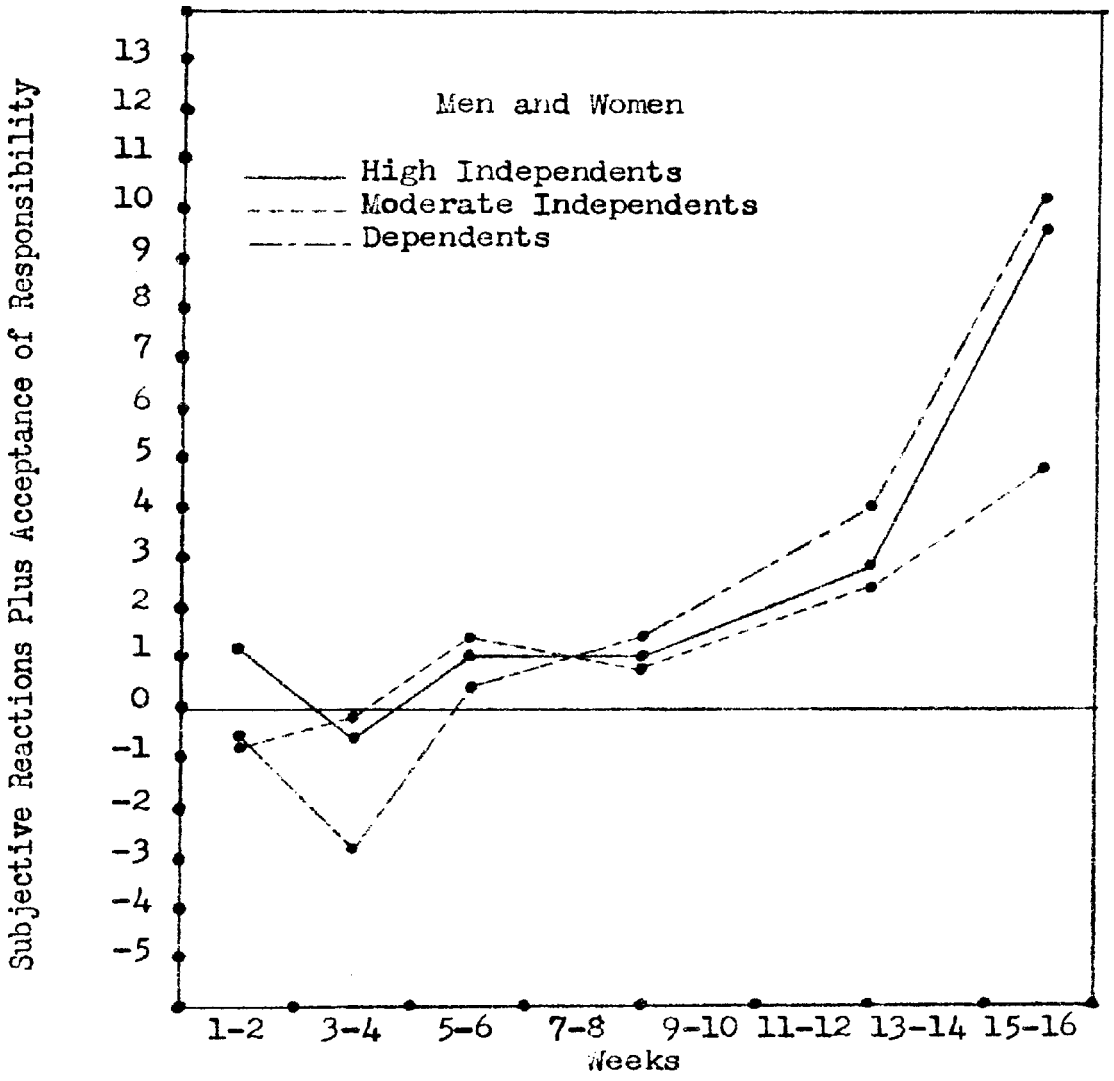


Fig. 4.—Effect of dependence-independence of traditional authority figures ("direction only" scoring) on subjective reactions plus acceptance of responsibility. Points represent means. Size of groups and range of scores for first two weeks:

high indep	13	+13 to -10
mod indep	31	+ 8 to -14
dep	8	+ 6 to -10

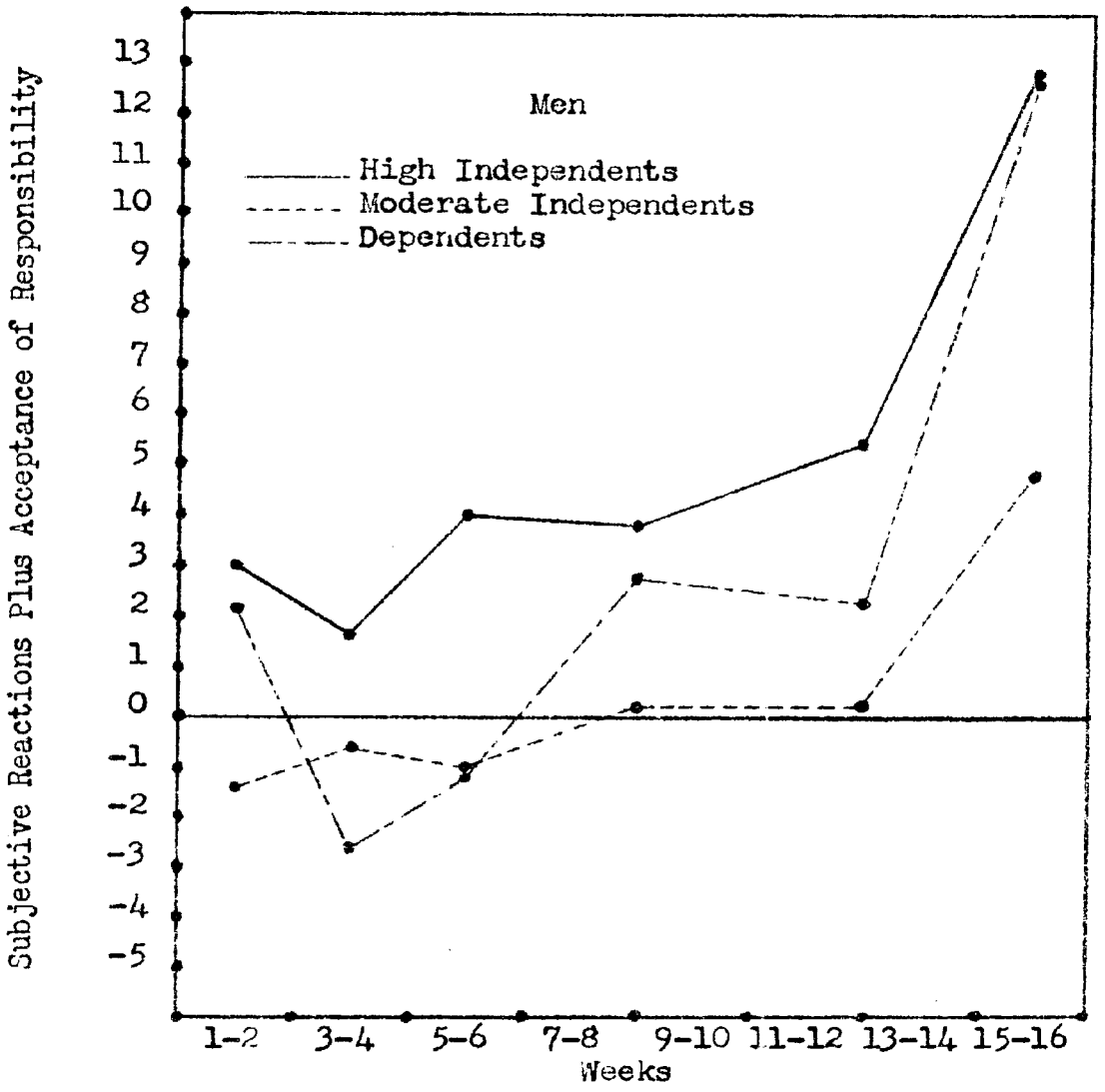


Fig. 5.—Effect of dependence-independence of traditional authority figures ("direction only" scoring) on subjective reactions plus acceptance of responsibility. Points represent means. Size of groups and range of scores for first two weeks:

high indep	5	+13 to -4
mod indep	13	+ 8 to -6
dep	4	+ 6 to -2

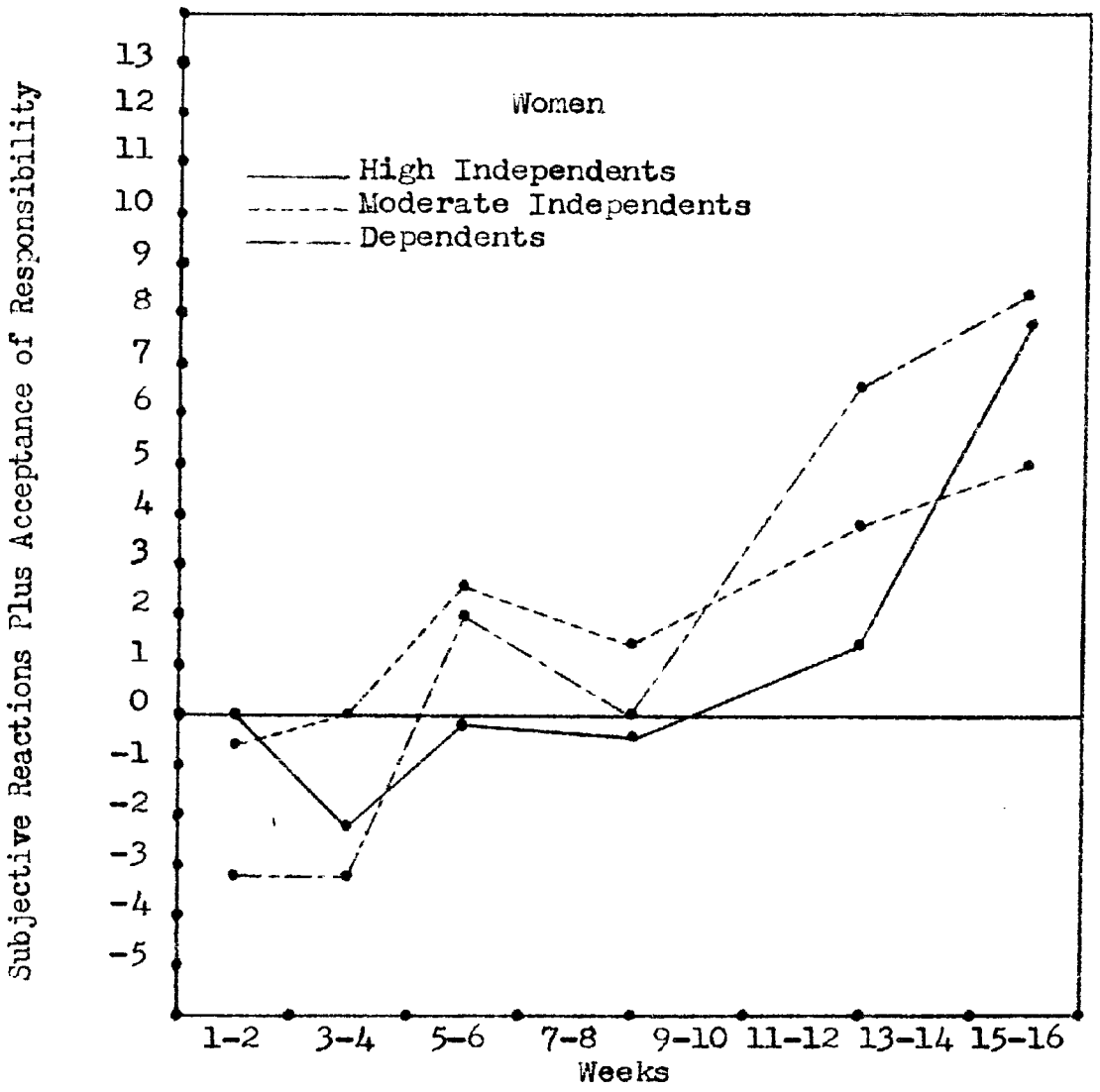


Fig. 6.--Effect of dependence-independence of traditional authority figures ("direction only" scoring) on subjective reactions plus acceptance of responsibility. Points represent means. Size of groups and range of scores for first two weeks:

high indep	8	+5 to -10
mod indep	18	+7 to -14
dep	4	+1 to -10

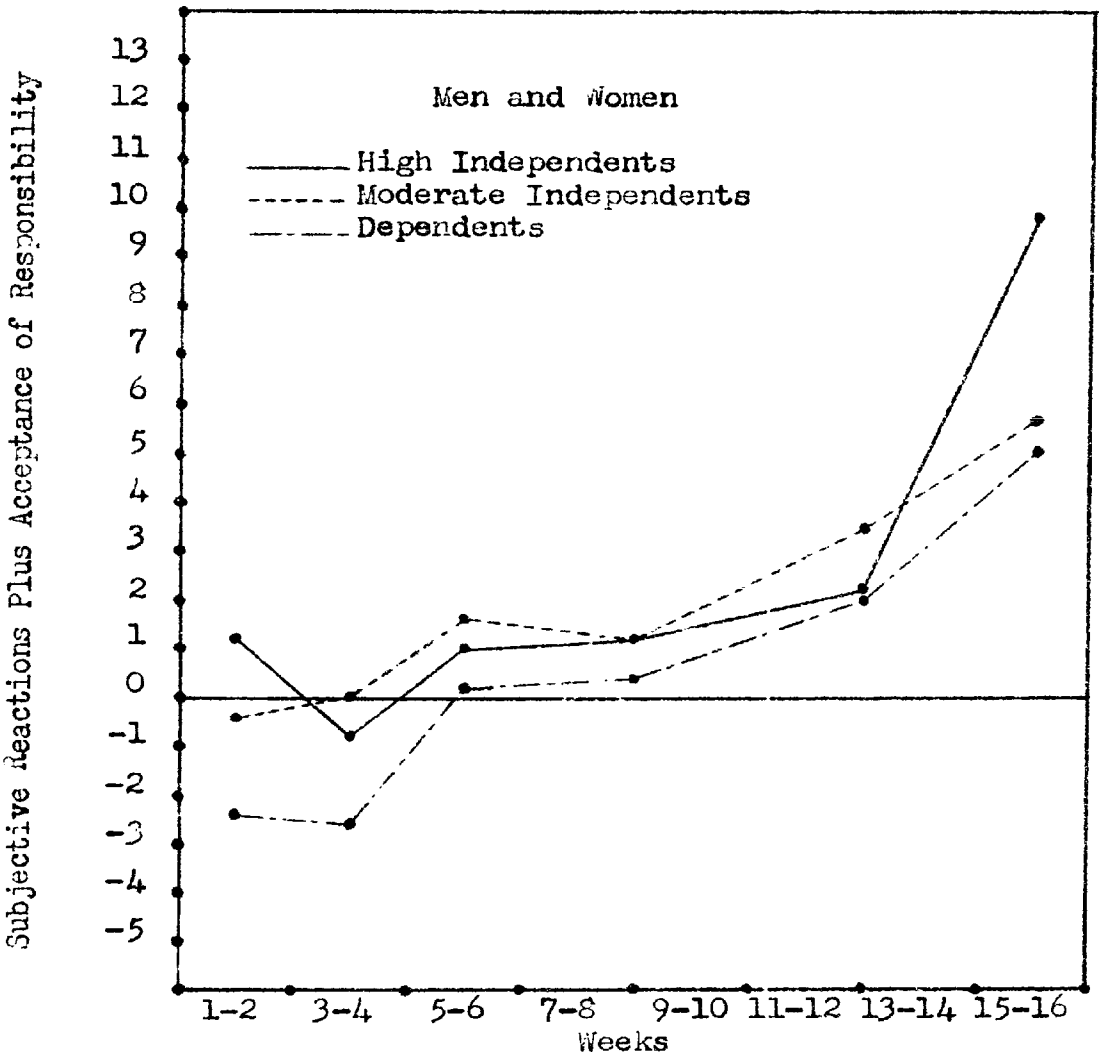


Fig. 7.--Effect of dependence-independence of traditional authority figures ("direction and extent" scoring) on subjective reactions plus acceptance of responsibility. Points represent means. Size of groups and range of scores for first two weeks:

high indep	15	+13 to - 5
mod indep	25	+ 7 to -10
dep	12	+ 2 to -14

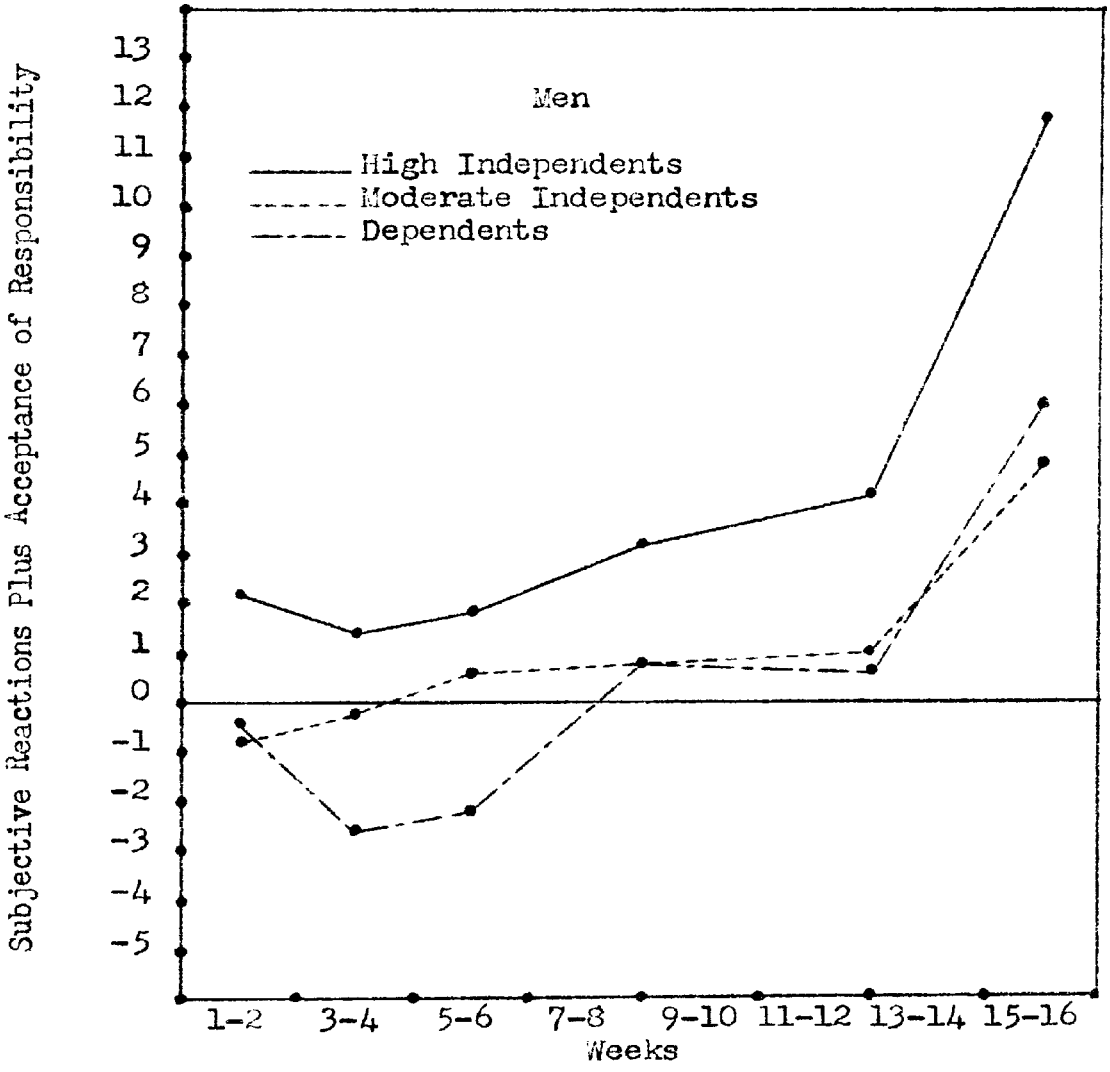


Fig. 8.--Effect of dependence-independence of traditional authority figures ("direction and extent" scoring) on subjective reactions plus acceptance of responsibility. Points represent means. Size of groups and range of scores for first two weeks:

high indep	7	+13 to -4
mod indep	9	+ 6 to -6
dep	6	+ 4 to -6

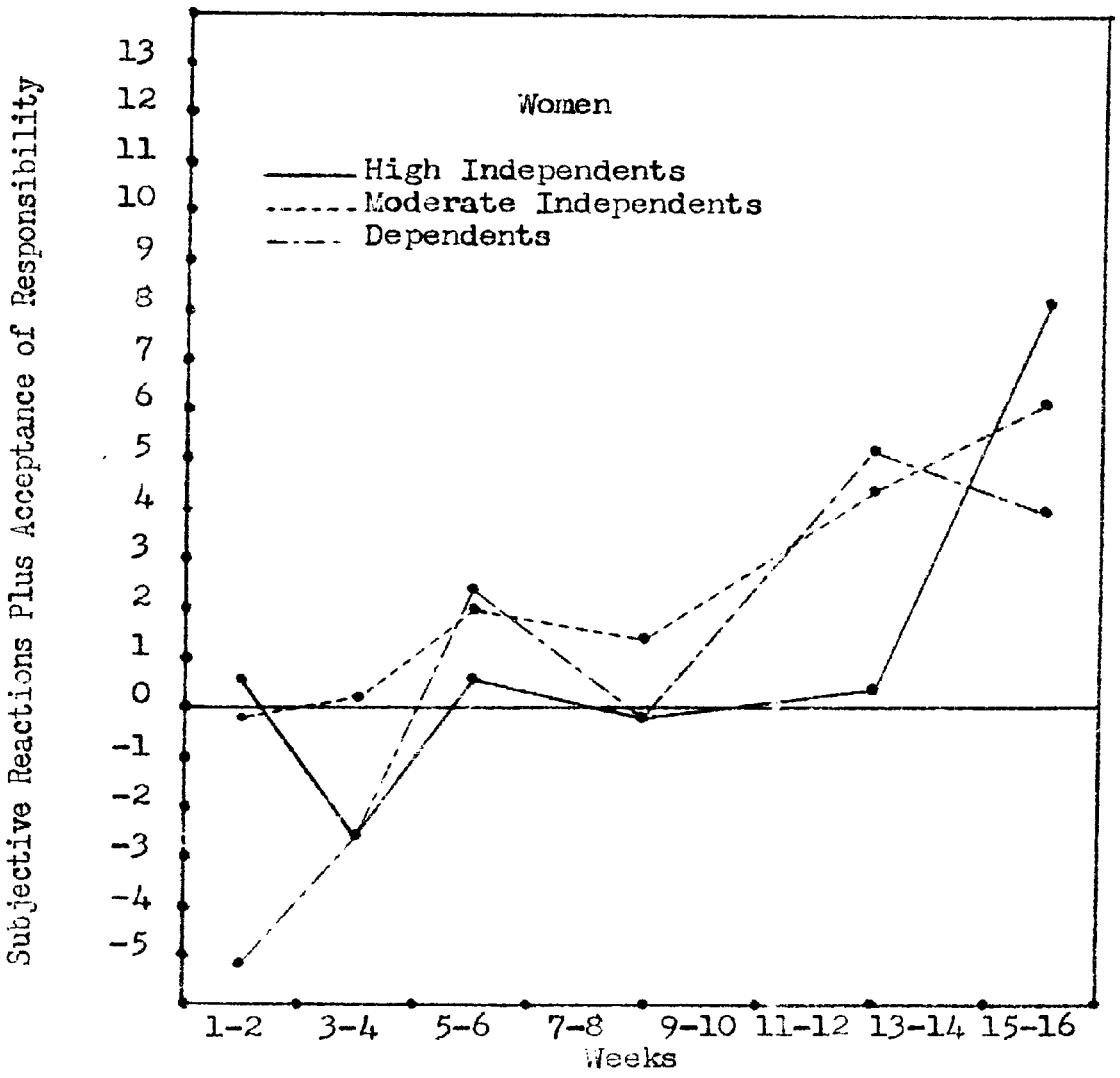


Fig. 9.--Effect of dependence-independence of traditional authority figures ("direction and extent" scoring) on subjective reactions plus acceptance of responsibility. Points represent means. Size of groups and range of scores for first two weeks:

high indep	8	+5 to - 5
mod indep	16	+5 to -10
dep	6	+1 to -14

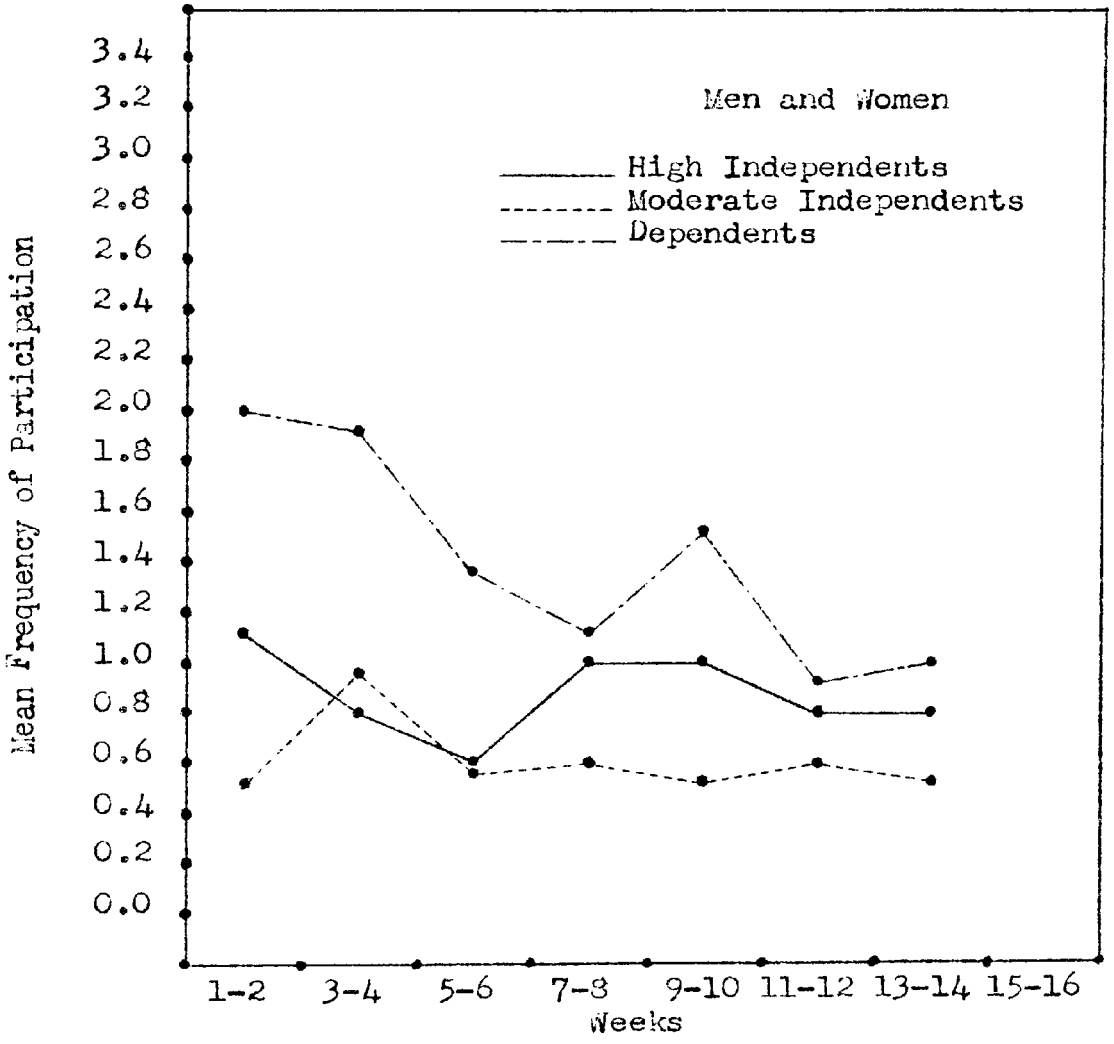


Fig. 10.--Effect of dependence-independence of traditional authority figures ("direction only" scoring) on frequency of participation. Size of groups and range of scores for first two weeks:

high indep	14	4.0 to 0
mod indep	31	5.0 to 0
dep	8	5.0 to 0

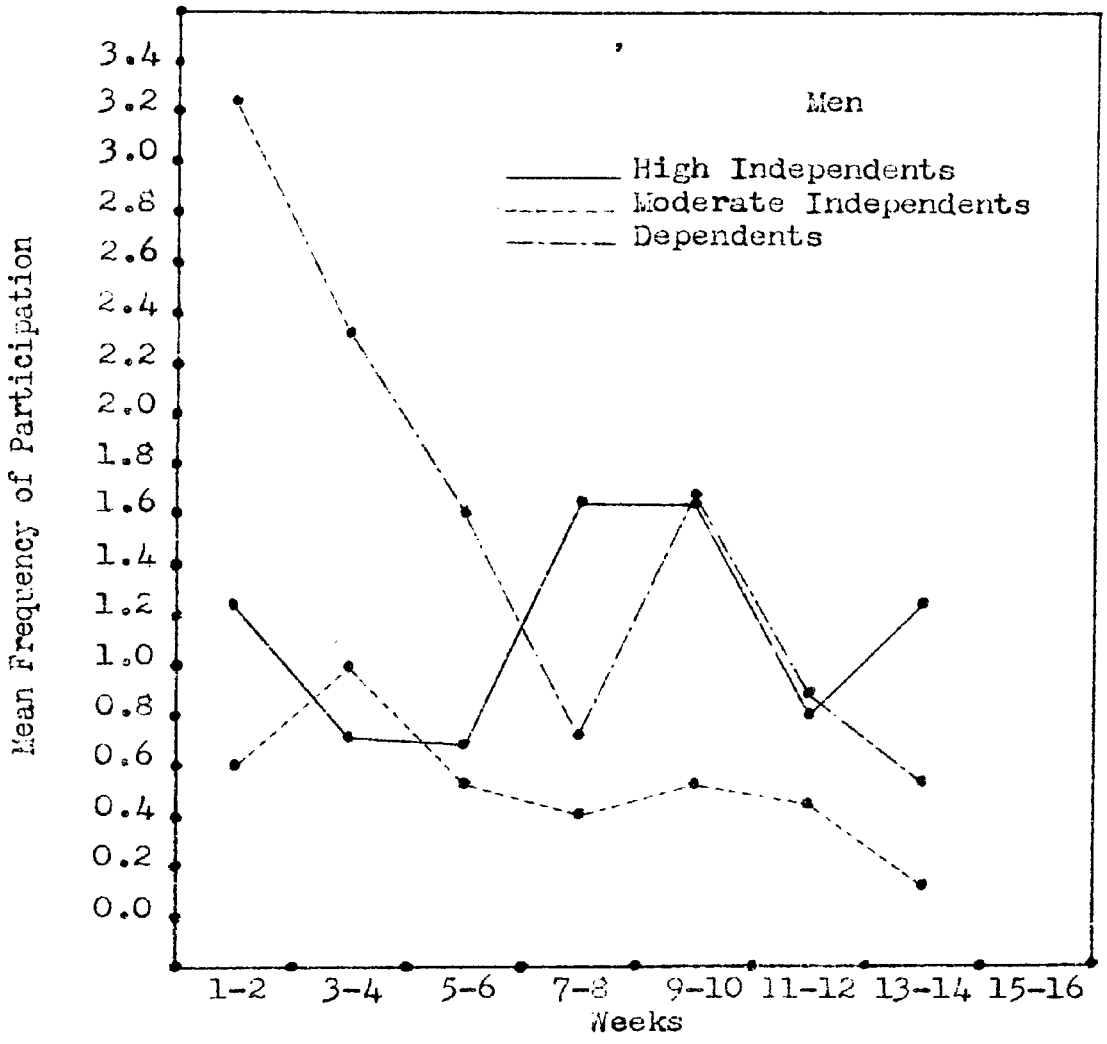


Fig. 11.--Effect of dependence-independence of traditional authority figures ("direction only" scoring) on frequency of participation. Size of groups and range of scores for first two weeks: high indep 5 4.0 to 0
mod indep 13 5.0 to 0
dep 4 5.0 to 0

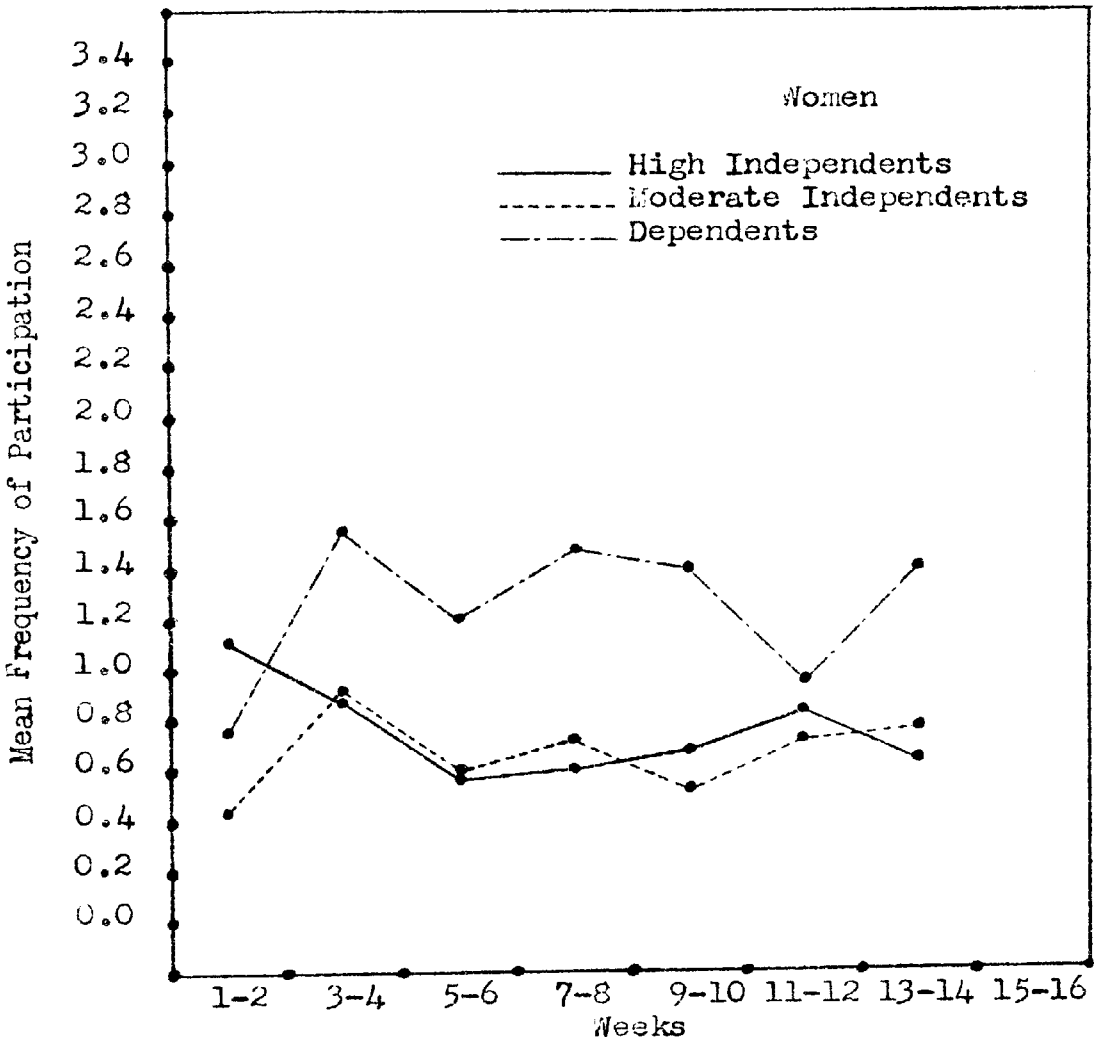


Fig. 12.--Effect of dependence-independence of traditional authority figures ("direction only" scoring) on frequency of participation. Size of groups and range of scores for first two weeks: high indep 9 4.0 to 0
mod indep 18 3.0 to 0
dep 4 2.0 to 0

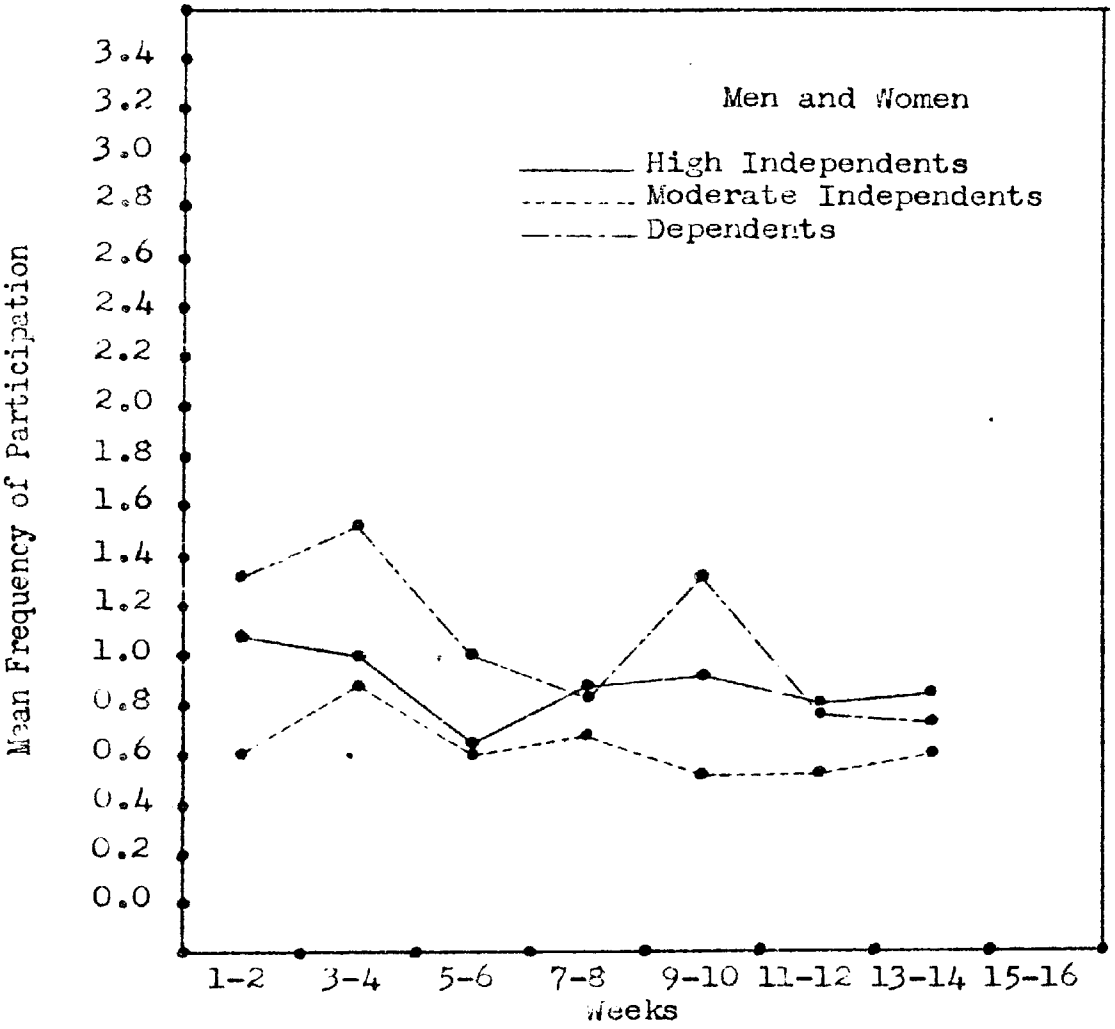


Fig. 13.--Effect of dependence-independence of traditional authority figures ("direction and extent" scoring) on frequency of participation. Size of groups and range of scores for first two weeks:

high indep	16	5.0 to 0
mod indep	25	4.0 to 0
dep	12	5.0 to 0

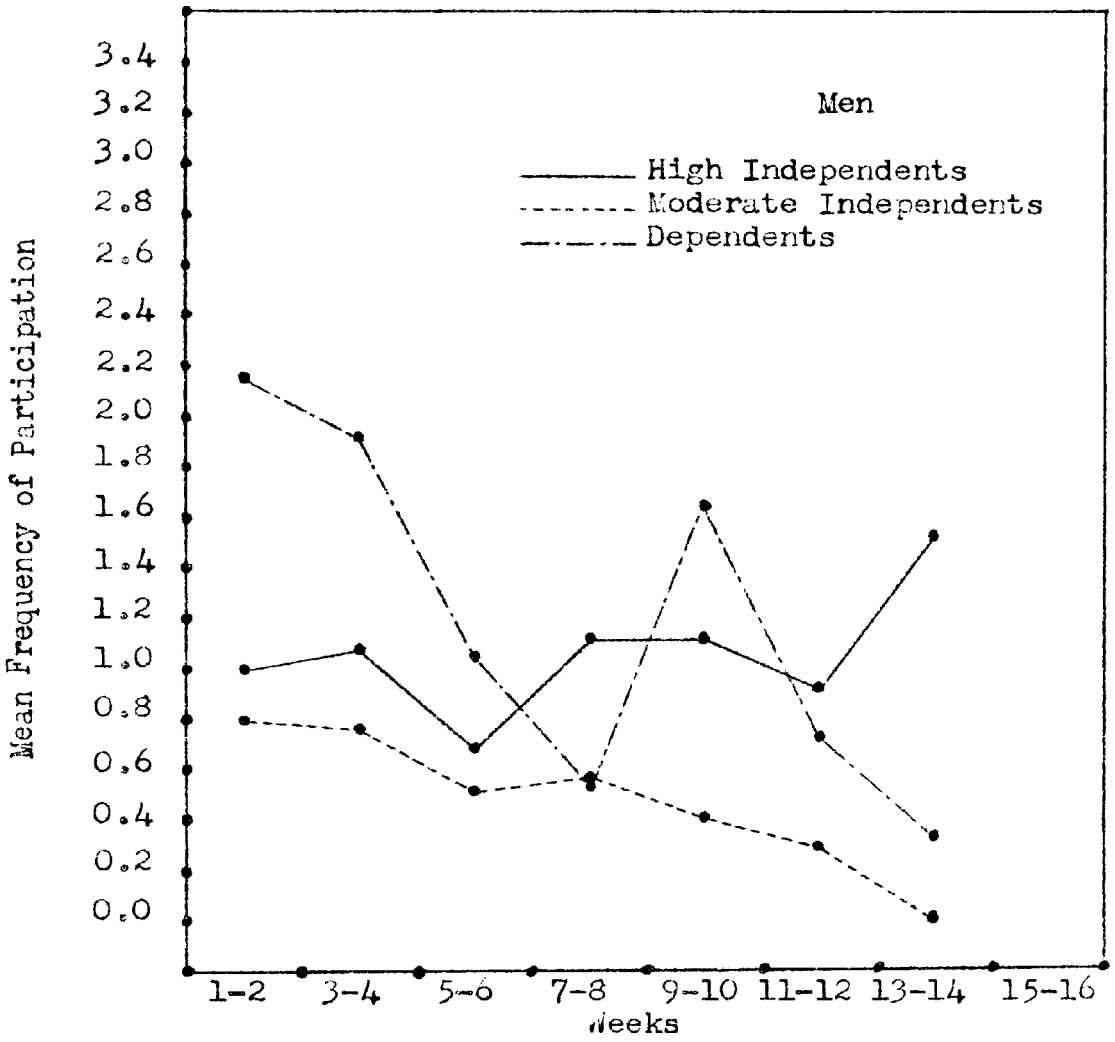


Fig. 14.--Effect of dependence-independence of traditional authority figures ("direction and extent" scoring) on frequency of participation. Size of groups and range of scores for first two weeks:

high indep	7	5.0 to 0
mod indep	9	4.0 to 0
dep	6	5.0 to 0

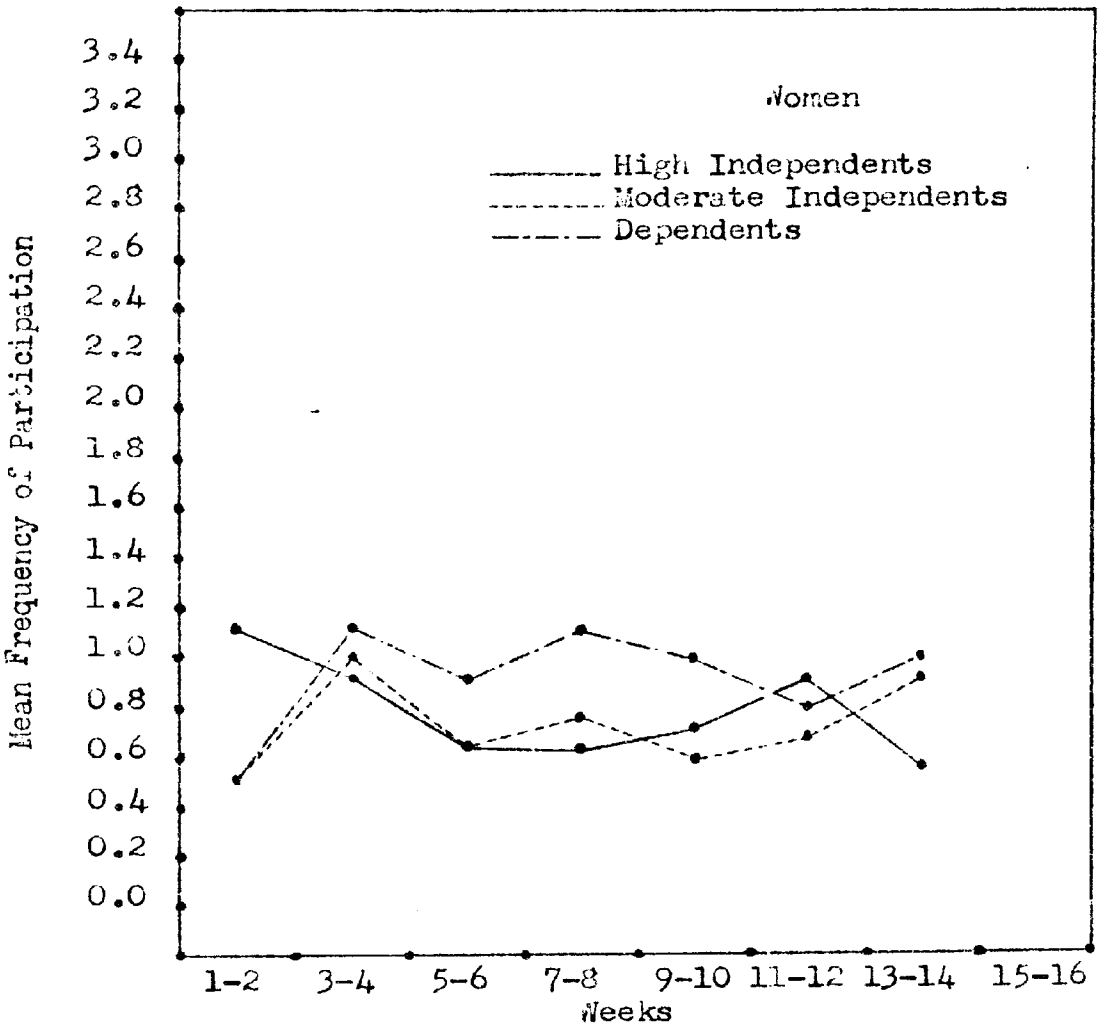


Fig. 15.--Effect of dependence-independence of traditional authority figures ("direction and extent" scoring) on frequency of participation. Size of groups and range of scores for first two weeks:

high indep	9	4.0 to 0
mod indep	16	3.0 to 0
dep	6	2.0 to 0

Need Achievement

Taking a course in college is, for most students, an achievement task. General knowledge of the various kinds of reactions of students to the grade received indicates that some students feel satisfied with a low grade, others only with a high grade. Also, some students work much harder than others. This indicates that students differ from each other in terms of "something" related to achievement.

This "something" has been called, "Need Achievement",— a motive, the goal of which is successful competition with some standard of excellence. Since the level of the standard is primarily subjectively determined within a range of discriminable positions,— "A to C", for instance,— we see how one student can be satisfied with a C while another considers a C a failure. Also, differences in amount of work done seem to be related to the intensity of the need or motive.

McClelland and his associates (13) have done a great deal of work with need Achievement and as a necessary prerequisite have developed a measure of the motive. This measure is projective in nature, with subjects being required to respond to certain pictures with stories which are directed by four questions which spell out the structure of a story with a plot. The stories are scored in terms of a number of achievement-related categories. A numerical score per subject is possible by summing the scores for the stories produced.

The authors have made a number of suggestions which are relevant to the present study. They feel that a high score represents an individual with relatively high motive intensity and also with a positive orientation to achievement, ie., an expectation of or hope for success, while a low score represents a relatively low motive

intensity and also a negative orientation to achievement, ie., an expectation of or fear of failure.

The achievement measure has been demonstrated to have experimental validity in a number of ways. It has been found to be positively related to performance for both men and women (13, pp. 230, 236, and 176). Thus high need Achievers work harder and learn more than low need Achievers. It has been found for men only that there is a significant increase in mean need Achievement score from measures taken in a neutral condition (no specific attempt to arouse the motive) to measures taken in an achievement arousal condition (specific attempts to arouse the motive). Thus, for men, increased motive arousal leads to an increased mean need Achievement score (13, p. 164). For women there is no increase due to change in conditions where the arousal condition instructions try to tap the values or goals of leadership and intelligence,— instructions which worked for the men. However, when women were required to produce stories under neutral and arousal conditions where the instructions for the latter condition were related to social acceptability as a value or goal, the mean need Achievement score showed a significant increase. This suggests that the need to achieve in women is probably related to social acceptance (13, p. 180).

Some further suggestions by these authors (13, pp. 207-214) are quite relevant to the present study. They point out that there are three determinants of a need Achievement score: (a) achievement cues which are internal to the individual; (b) achievement cues in an immediately preceding experience; and (c) achievement cues in the pictures themselves. The question arises whether scores determined primarily by one of these determinants are more valid for predicting

certain kinds of behavior than others. The authors describe those individuals, whose scores are primarily due to internal cues, as autonomous need Achievers,— people who have an extensive need for Achievement which is aroused a great deal of the time. These individuals should study steadily throughout a course. Other individuals, whose scores are primarily due to external cues, should study sporadically,— probably in spurts,— before tests and examinations. The authors believe that scores obtained under neutral conditions are likely to be determined primarily by internal achievement cues.

In the present study, the need Achievement measure was administered at the beginning and end of the course. For both administrations the neutral condition of presentation was used.[1] Scores obtained at the beginning of the course probably can be said to have been obtained under neutral conditions; but at the end of the course, students were probably subjected to achievement-arousing cues from their experiences in other courses in which final examinations were imminent and hence those scores were likely more determined by external cues. Since achievement in the introductory psychology course, taught by the student-responsibility method, required steady work throughout the course, the need Achievement scores obtained under neutral conditions at the beginning of the course should more likely predict achievement-related behavior by the students.

In the present study, the need Achievement scores were based on responses to four pictures which have been used extensively in previous research (13, p. 375; pictures B, A, H, and G) (see Figure 16 for copies of the pictures used).

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[1]See Appendix I.



Fig. 16.—Need Achievement pictures used in the present study.

The scoring system used was system C (13, pp. 147-148). The reliability of the scoring by the experimenter was determined, in accordance with accepted practice (13, pp. 185-186), in terms of three indices of inter-scorer reliability. The criterion scorer was Mr. Joseph Veroff who scored the stories produced by twenty of the students of the experimental group. The protocols were selected randomly from the pre- and post measures. The rank order correlation between the criterion scorer and the experimenter was .89. Agreement in terms of the initial decision to score a story was 90 per cent. Agreement in terms of sub-categories was 84 per cent. These indices of agreement indicated that the scoring by the experimenter was sufficiently reliable for the purposes of the study.

Hypothesis 3

Need Achievement will be monotonically related to subjective reactions plus acceptance of responsibility early in the course.

High need Achievers will anticipate being successful in this course. In spite of its differences from other courses, it still will be perceived as an achievement situation and such students will interpret its possibilities in terms of their expectations of success. Such expectations will redintegrate positive affect from previous success experiences and hence the subjective reactions will be favorable; acceptance of responsibility will be perceived as instrumental to success and hence there will be a high degree of this response.

Low need Achievers will anticipate the possibility of failure in the course and such anticipations will redintegrate negative affect so that their subjective reactions will be unfavorable. Their negative

evaluations will prevent them from accepting responsibility early. The perceived differences in this course will not influence their "fear of failure" response because, though different, the course will still be perceived as an achievement situation.

Hypothesis 4

Need Achievement will be monotonically related to frequency of participation early in the course.

High need Achievers will interpret participation in class as a response which will be likely to be instrumental to success in the course. Hence, they will participate a great deal.

Low need Achievers, motivated by "fear of failure" will see participation in class discussions as less likely to be instrumental to their need than the high need Achievers. Alternatively, to the extent that a low score may indicate a low intensity of positive orientation toward achievement, to that extent these students will not participate as much as the high need Achievers. In either case, a low frequency of participation would be expected.

Operations

As with the dependence-independence variable, and for the same reasons, the subjective reactions plus acceptance of responsibility data and frequency of participation data which were produced during the first two weeks of the course, were used. Figures 17 and 18 indicate the differential representativeness of these data in terms of high, middle, and low need Achievement groups. These sub-groups were differentiated independently by sex and were determined by dividing the distribution of scores into equal thirds. In accordance with considerations indicated

previously, scores from the pre-measure were used. For testing the differences between groups the Mann Whitney test was used.

Results and interpretations

The hypothesis that need Achievement would be monotonically related to subjective reactions plus acceptance of responsibility early in the course was confirmed for the total group (P = .05; one-tail; Mann Whitney) and for the women (P = .03; one-tail; Mann Whitney), but not for the men (see Figures 19, 20, and 21). For the total group and for the women, the high need Achievers were more favorable in their reactions than the low need Achievers.

In attempting to account for the failure of the hypothesis with the men, a suggestion by McClelland and his associates (13) to the effect that the meaning of achievement for men may differ from that for women, might be relevant. For men, achievement means getting ahead in terms of leadership and intelligence; for women, achievement may mean being accepted socially by others. Were the characteristics of this course related more to the value or goal of social acceptance than to the values or goals of leadership and intelligence? Certainly, it provided experiences characterized by a great deal of interaction among the students. This interaction took place principally during the first hour of the two-hour session when small group discussions took place. The impression of the instructor is that, in addition to interaction in terms of the content of the course, interaction of a purely social nature occurred frequently. Possibly, anticipations of social acceptance or fears of social rejection by the women accounted for the significant results. For the men there were no significant differences hence any

interpretation of their behavior would be difficult.

The hypothesis that need Achievement would be monotonically related to frequency of participation early in the course was not confirmed (see Figures 22, 23, and 24). None of the differences between sub-groups were significant. Apparently, need Achievement was not sufficiently related to frequency of participation for any significant difference to occur.

A consideration of the relationships among the independent variables used to predict individual behavior is relevant here. Confirmations of predictions to a dependent variable carry more weight if the independent variables are not related to each other. The independent variables used in this study were plotted against each other in three-by-three tables. This permitted the appearance of non-monotonic relationships. Because the number of entries in certain cells for each plot was quite small, the patterns shown were observed and the three-by-three tables were then collapsed into two-by-two tables in accordance with the patterns shown. Possible relationships were then tested by the Chi Square procedure. Need Achievement was not related to dependence-independence of traditional authority figures or to Overall Acceptance of Responsibility for the men or the women. Dependence-independence tended to be related to Overall Acceptance of Responsibility in a non-monotonic manner. For the women and for "direction only" scoring of dependence-independence, the relationship was significant and non-monotonic such that the dependents and moderate independents either accepted a great deal of responsibility or rejected responsibility while the high independents accepted a moderate amount of responsibility ($P = .018$; two-tail; Chi Square 2x2); for "direction and extent" scoring

the relationship was not significant though the same pattern seemed to appear (P = .30; two-tail; Chi Square 2x2). For the men and for "direction only" scoring of dependence-independence, the relationship was significant and non-monotonic such that the dependents and high independents accepted a moderate or high amount of responsibility while the moderate independents rejected responsibility (P = .016; two-tail; Chi Square 2x2); for "direction and extent" scoring the relationship was not significant though the same pattern seemed to appear (P = .072; two-tail; Chi Square 2x2).

Because of the results of this analysis, and because the predictions in this study involved monotonic relationships, the conclusion was drawn that the results obtained were not influenced by the relationships among the independent variables.

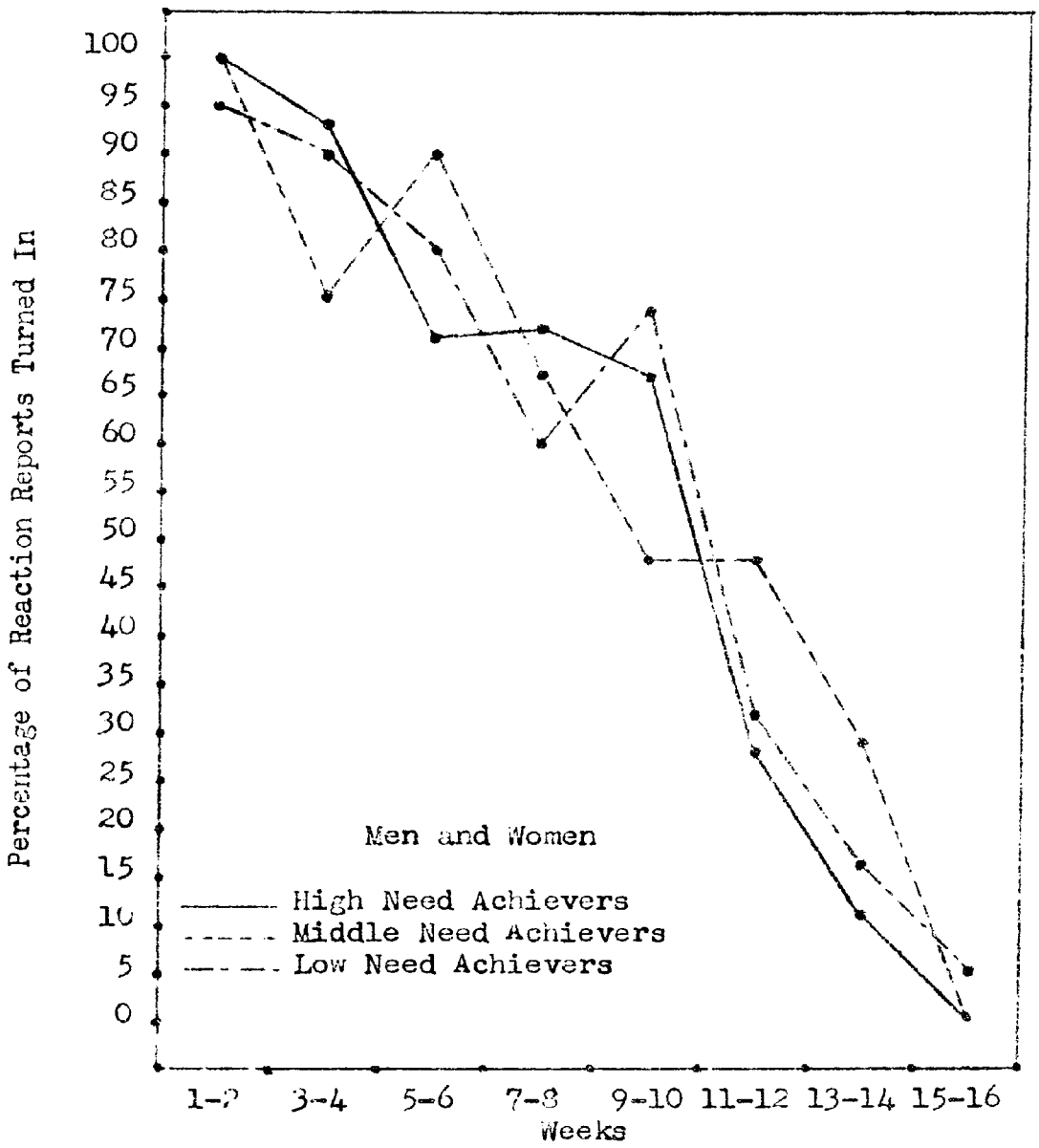


Fig. 17.--Representativeness of subjective reactions plus acceptance of responsibility data for sub-groups in terms of need Achievement. Size of groups: high n Ach 18
mid n Ach 21
low n Ach 20

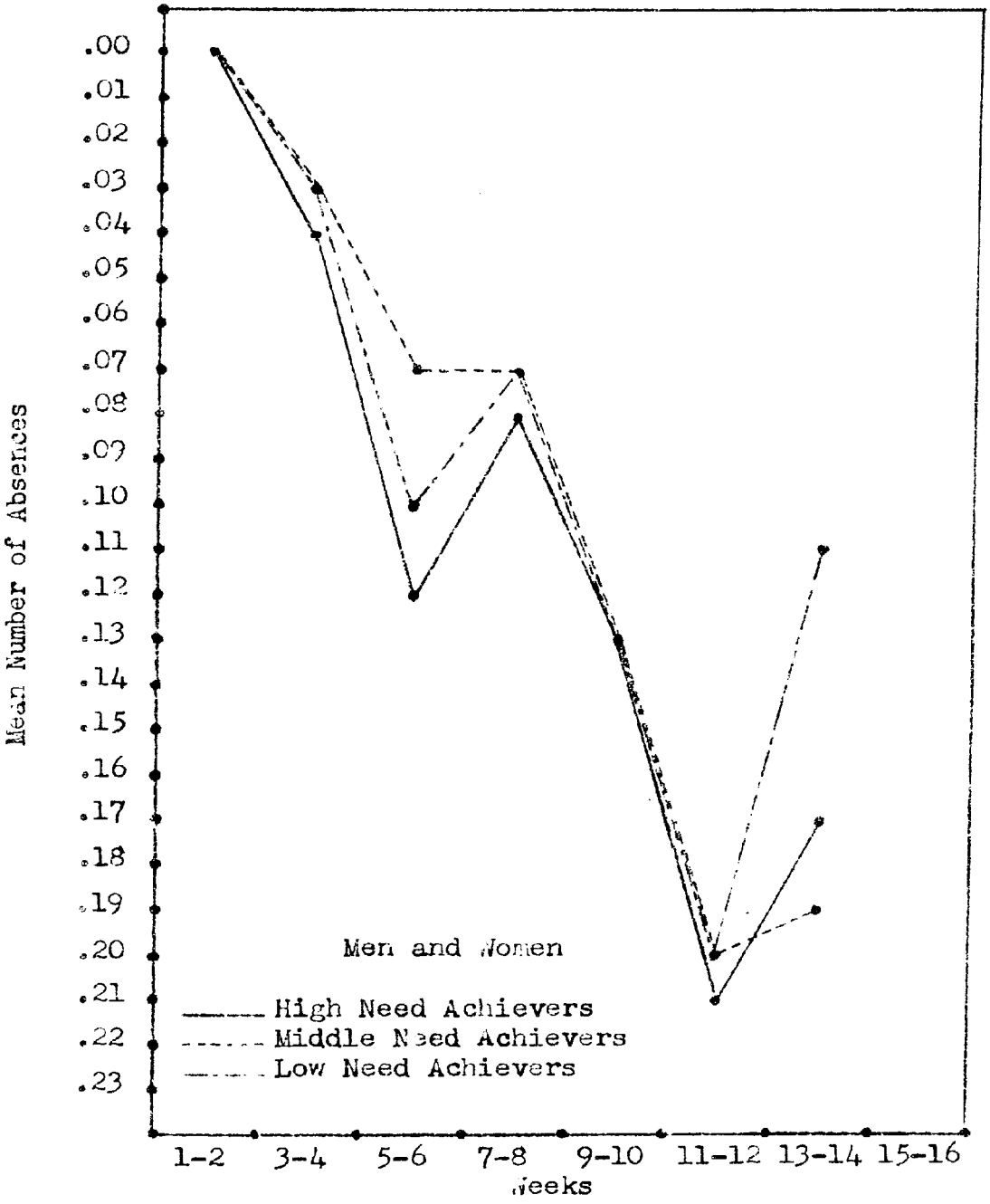


Fig. 18.--Representativeness of frequency of participation data for sub-groups in terms of need Achievement. Size of groups:
high n Ach 18
mid n Ach 21
low n Ach 20

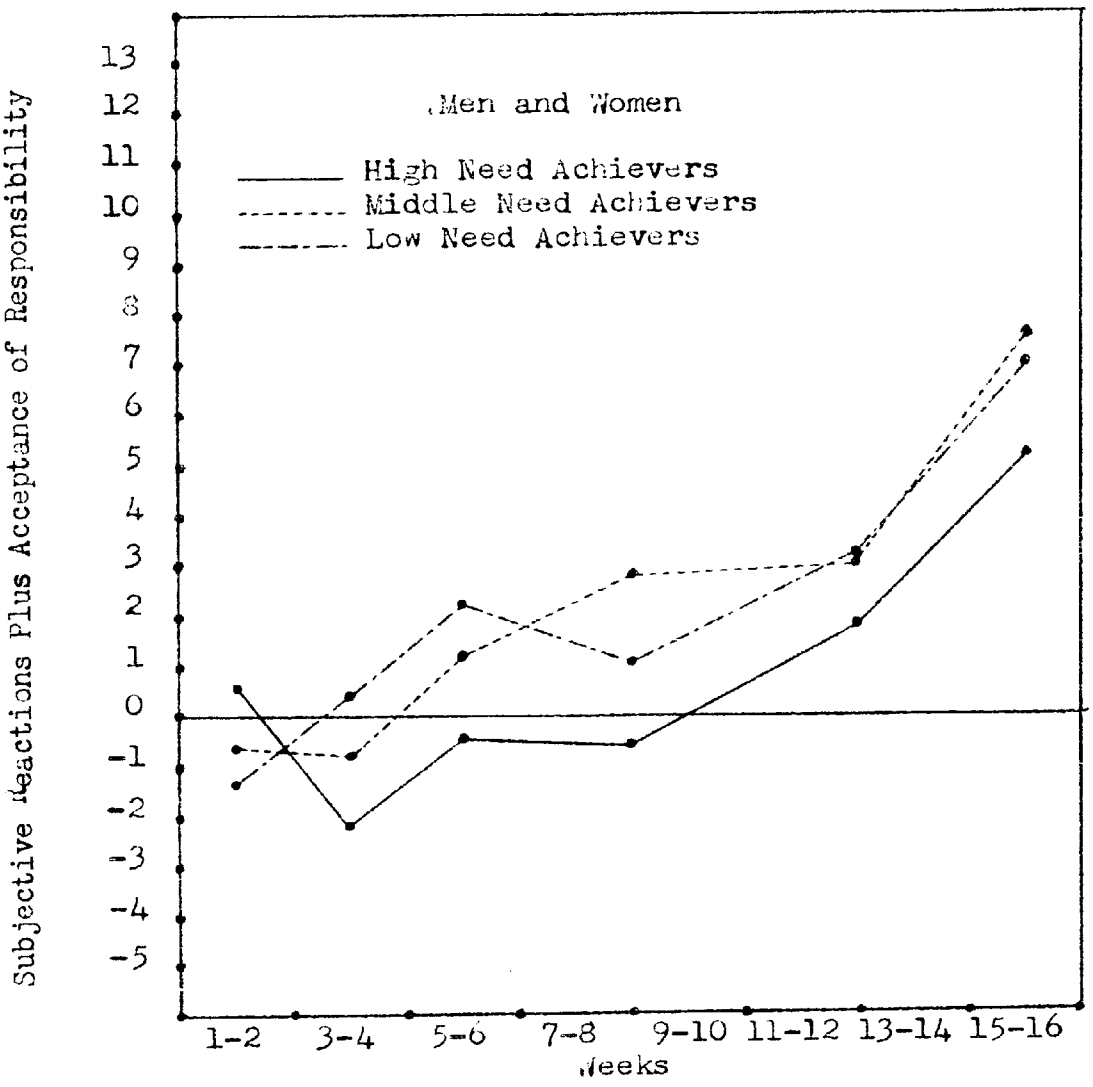


Fig. 19.--Effect of need Achievement on subjective reactions plus acceptance of responsibility. Points represent means. Size of groups and range of scores for first two weeks:

high n Ach	15	+ 8 to -14
mid n Ach	19	+ 6 to -10
low n Ach	19	+13 to -10

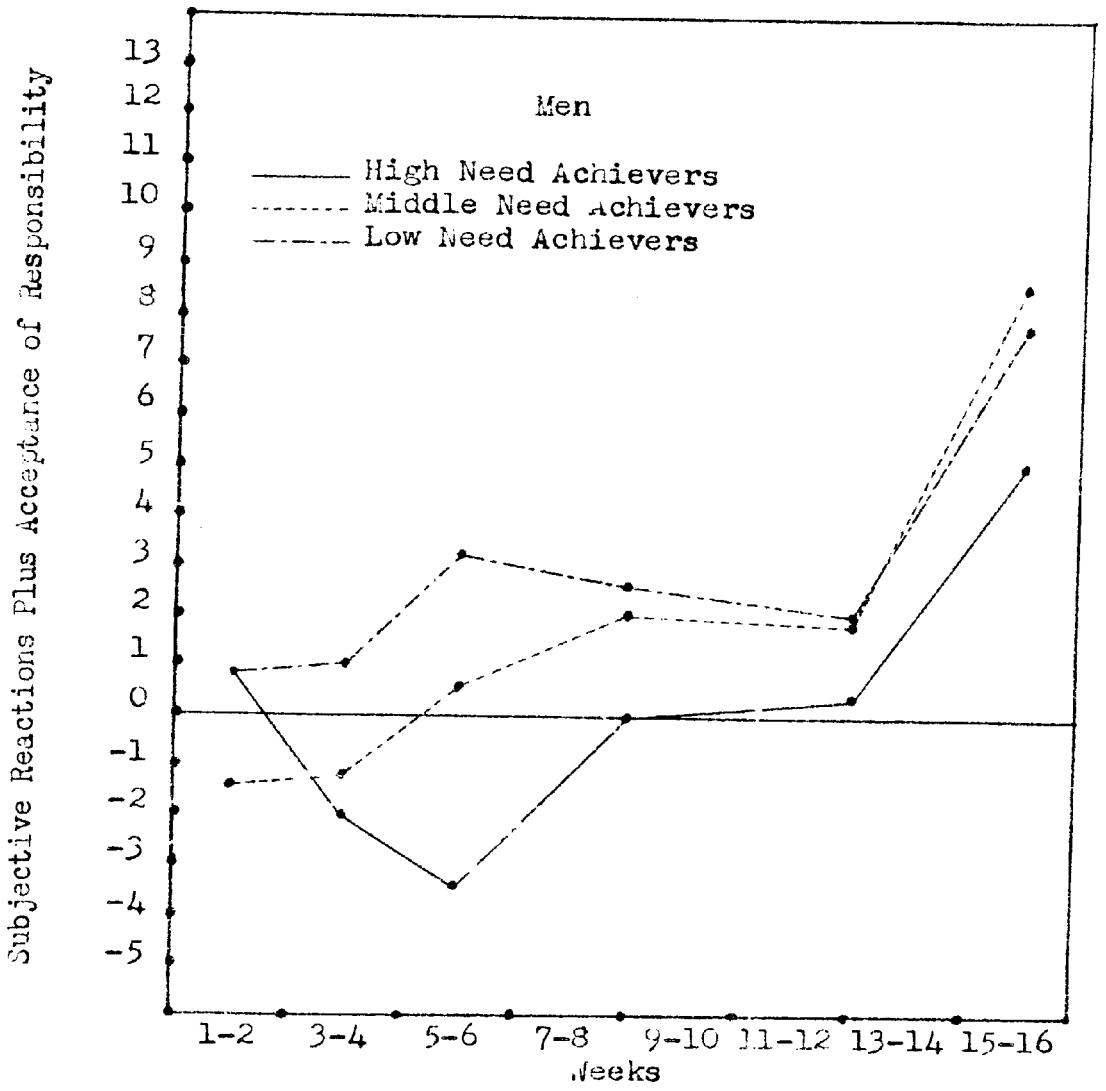


Fig. 20.—Effect of need Achievement on subjective reactions plus acceptance of responsibility. Points represent means. Size of groups and range of scores for first two weeks:

high n Ach	7	+ 8 to -3
mid n Ach	7	+ 6 to -4
low n Ach	9	+13 to -6

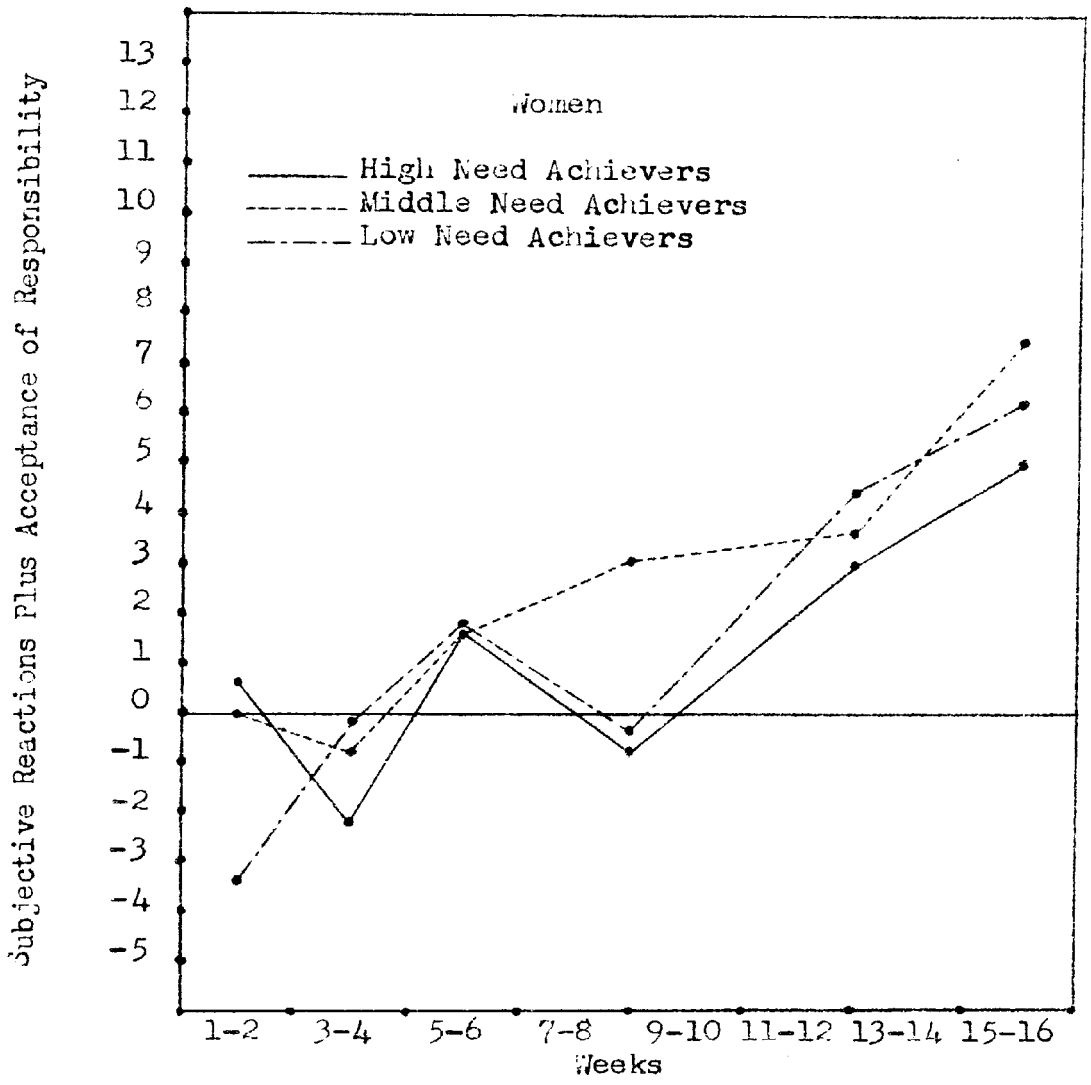


Fig. 21.--Effect of need Achievement on subjective reactions plus acceptance of responsibility. Points represent means. Size of groups and range of scores for first two weeks:

high n Ach	8	+5 to -14
mid n Ach	12	+6 to -10
low n Ach	10	+7 to -10

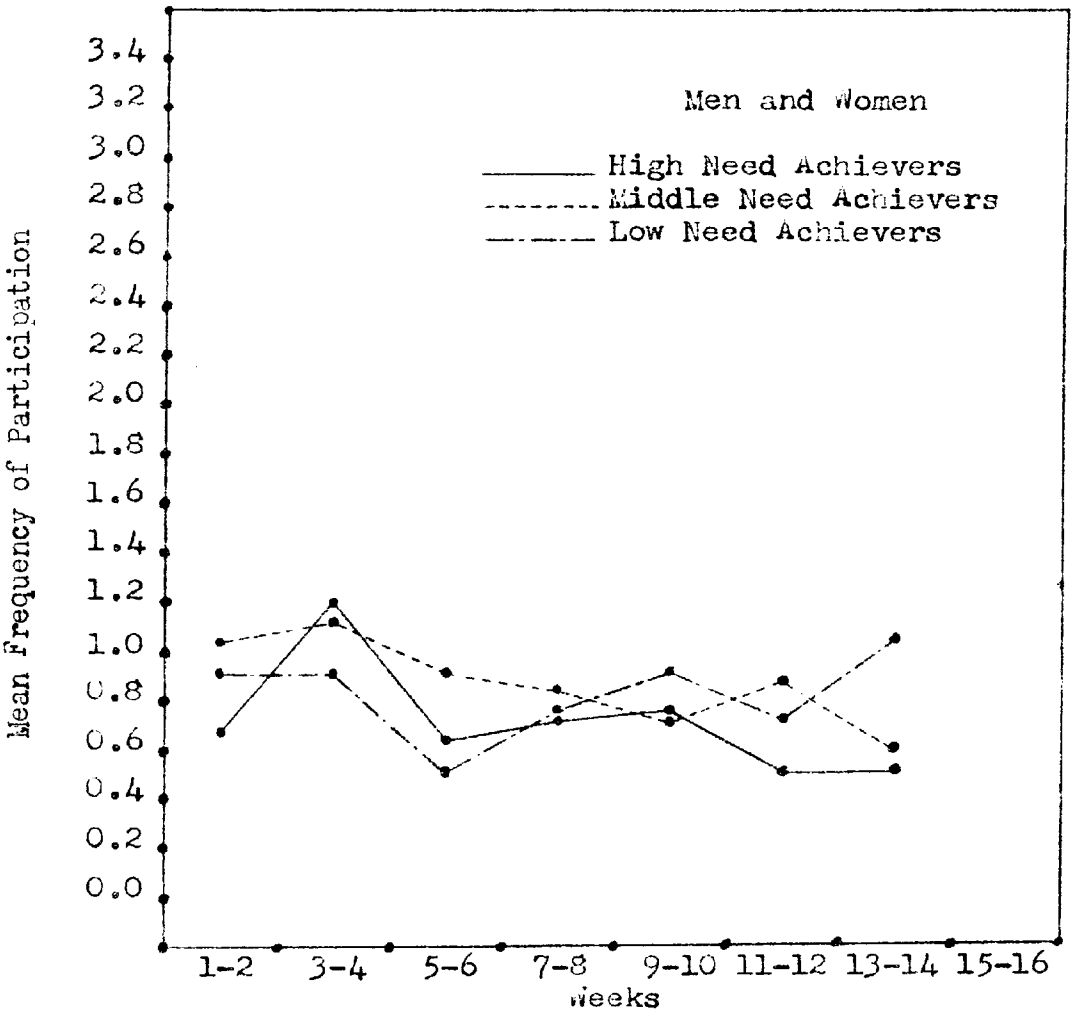


Fig. 22.--Effect of need Achievement on frequency of participation. Size of groups and range of scores for first two weeks:

high n Ach	15	4.0 to 0
mid n Ach	19	5.0 to 0
low n Ach	20	5.0 to 0

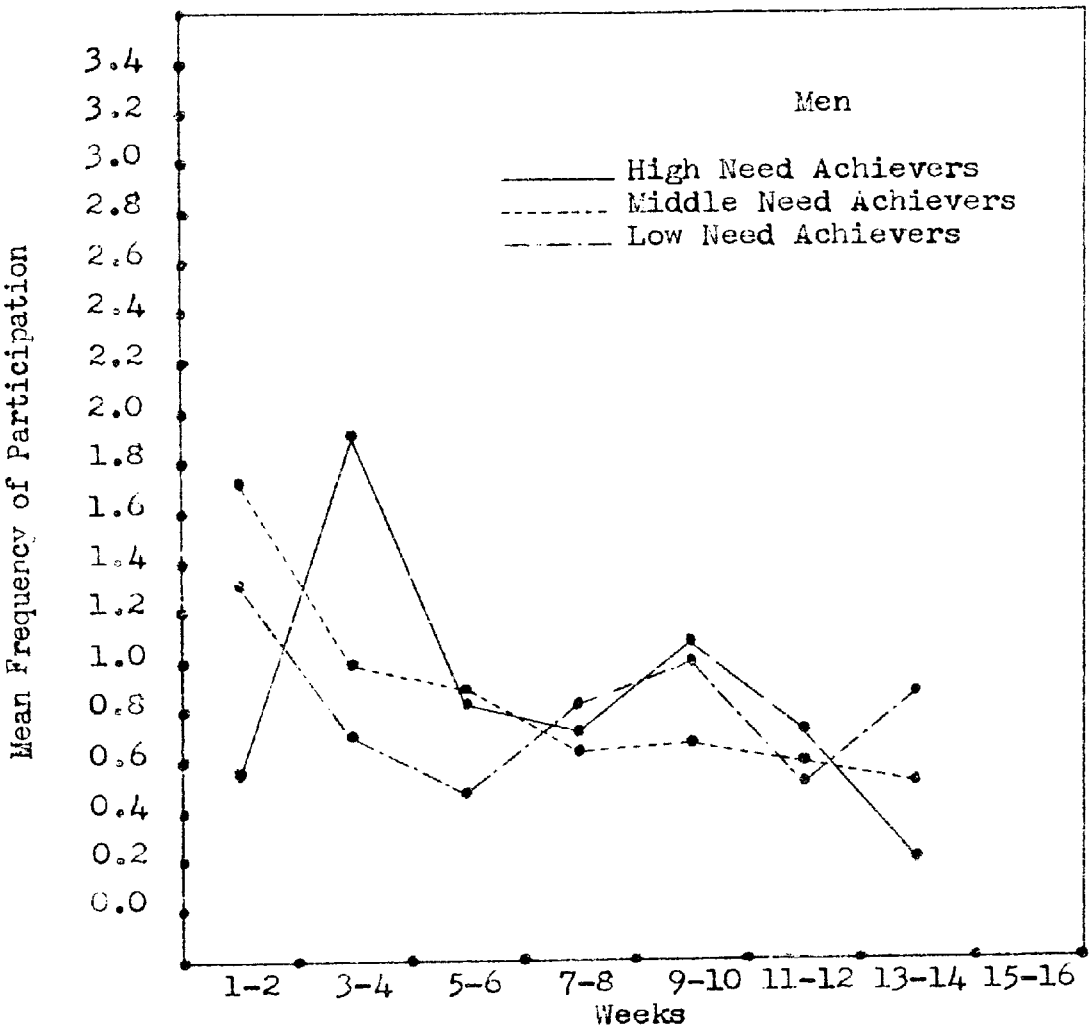


Fig. 23.--Effect of need Achievement on frequency of participation. Size of groups and range of scores for first two weeks: high n Ach 7 4.0 to 0
mid n Ach 7 5.0 to 0
low n Ach 9 5.0 to 0

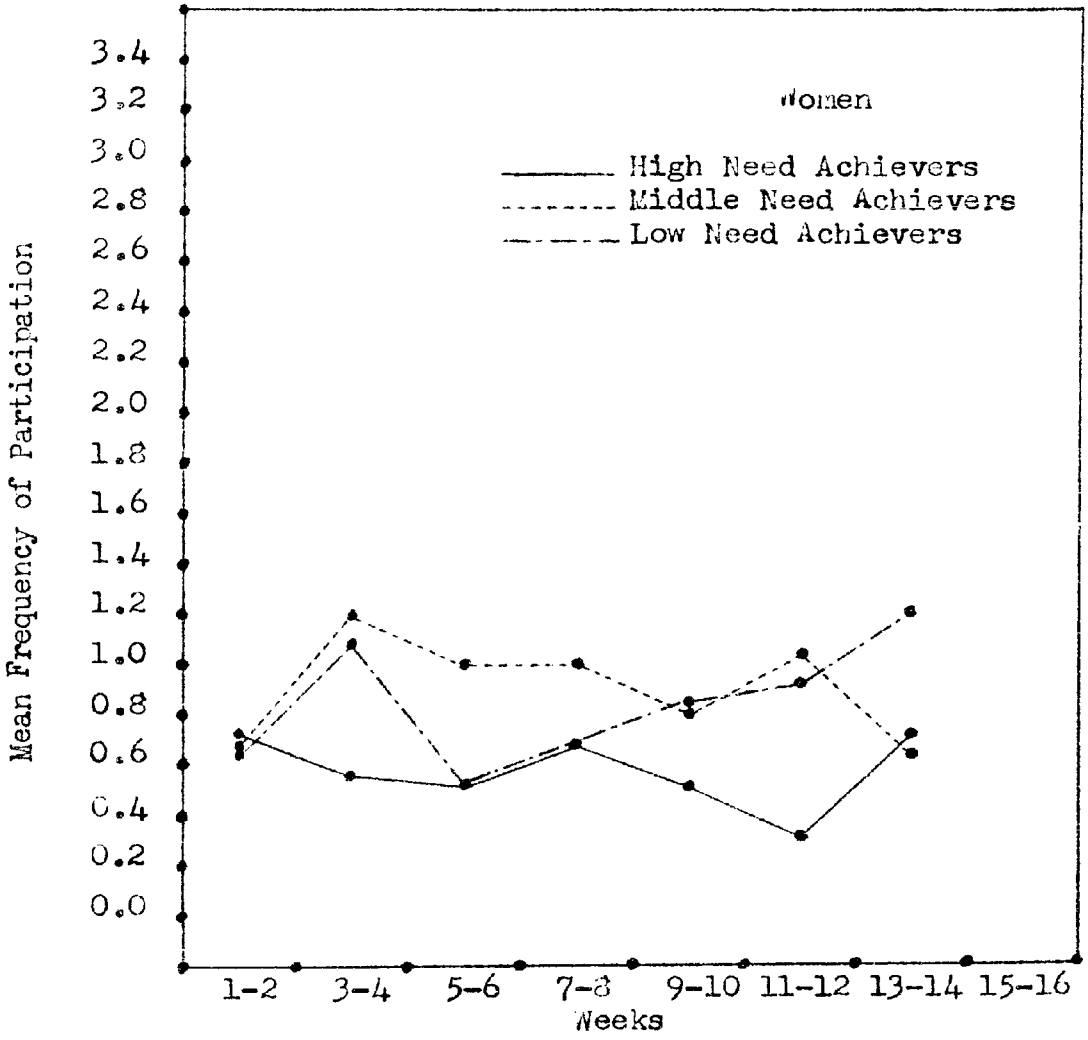


Fig. 24.--Effect of need Achievement on frequency of participation. Size of groups and range of scores for first two weeks:

high n Ach	8	4.0 to 0
mid n Ach	12	2.0 to 0
low n Ach	11	3.0 to 0

The Relationship of Acceptance of Responsibility with Final Reactions in the Course

Two general psychological propositions formed the basis for using a measure of a response (Overall Acceptance of Responsibility) to predict behavior late in the course. One was that many responses produce an emotional effect, either positive or negative, with the further result that the quality of this emotional effect tends to become associated with the original response. The second proposition was that positive and negative affect are intimately related to learning in that either facilitates the establishment of associations between noticed aspects of the total situation.

In the context of this study, the first proposition implied that the response of accepting individual responsibility for behavior leading to learning would produce positive emotional effects. The feelings of satisfaction which presumably would be experienced due to the exercise of individual initiative, individual mastery of content, would become associated with the response of acceptance of responsibility. The second proposition implied that the positive evaluation of the response of acceptance of responsibility would mediate the establishment of associations between such aspects of the situation as absence of the usual formal class procedures, self-perceptions of the learning that has occurred, participation in discussions, etc., and the positive evaluation of the response of acceptance of responsibility. In general, the positive affect produced by responsible behavior should have generalized to many aspects of the situation. In Chapter II it was demonstrated that this response was related to positive evaluations of many aspects of the course such as satisfaction with the course and

interest in psychology. Such relationships would tend to support the theoretical arguments above.

The measure of Overall Acceptance of Responsibility came from three sources: (a) coding of the reaction reports; (b) observations by the instructor; and (c) certain responses to the Course Evaluation Form.[1] A composite measure was obtained by adding the data from these three sources for each student. Scores on this measure ranged from minus five (rejection of responsibility) to plus nineteen (acceptance of responsibility). The reliability of the coding of the reaction reports for this measure was represented by product-moment r's of .70, .74, and .66 among the three coders. While these indices of agreement were not as high as for the subjective reactions plus acceptance of responsibility variable, still they indicated a considerable degree of reliability for that part of the measure based on the reaction reports. Contributions from the other two sources were even more reliable since they involved the observation by the instructor of quite clearly defined behavior and the coding of responses to the Course Evaluation Form for which most of the data came from responses to "yes-no" or "some-much" items.

A question is likely to arise at this point. Was Overall Acceptance of Responsibility independent of subjective reactions? It will be recalled that acceptance of responsibility was added to the subjective reactions for the predictions to behavior early in the course. There were particular theoretical reasons for doing this and also for using Overall Acceptance of Responsibility as an independent variable for the predictions to behavior late in the course. Some of these

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[1]See Appendix G for more detail.

reasons have already been indicated at the beginning of this section.

The original intention was to predict the four sub-categories of behavior,-- acceptance of responsibility, liking for the course, preference for teacher-responsibility or student-responsibility class procedures, and amount of learning subjectively felt,-- early in the course from dependence-independence of traditional authority figures and need Achievement. Due to the small amount of data produced for each of these sub-categories, and since the originally conceived predictions were the same for each, the data for these four sub-categories were combined. It was expected on theoretical grounds that early acceptance of responsibility would occur more often for high independents and for high need Achievers. However, it was further expected that once responsibility had been accepted and as responsibility was accepted repeatedly thereafter, this response itself would take over from dependence-independence and need Achievement a greater amount of the determination of the "sign" of the subjective reactions to the course. Consequently, it was expected that the relationship between Overall Acceptance of Responsibility and subjective reactions would be strongest late in the course and that dependence-independence and need Achievement would not be related to subjective reactions late in the course. This expectation tended to be confirmed (see Figures 4, 7, 19, and 25). For the reasons indicated above, Overall Acceptance of Responsibility was likely to be theoretically independent of the subjective reactions.

In terms of measurement procedures, Overall Acceptance of Responsibility was relatively independent of subjective reactions for the last two weeks of the course since the former was based on data produced throughout the semester.

Hypothesis 5

Overall Acceptance of Responsibility will be monotonically related to subjective reactions late in the course.

High acceptance of responsibility will mediate favorable evaluations of the course probably through the processes indicated earlier. These positive evaluations will be reflected in the subjective reactions. Low acceptance of responsibility or rejection of responsibility will be associated with negative evaluations of the course probably because students behaving this way will still prefer traditional class procedures which will have been denied to them. This will lead to some degree of frustration and negative affect which will be reflected in the subjective reactions. For both groups, the process of generalization of affect will probably be relevant to the effects predicted for each.

Hypothesis 6

Overall Acceptance of Responsibility will be monotonically related to frequency of participation late in the course.

High acceptors of responsibility will have experienced the benefits of participation and hence will participate a great deal. For low acceptors of responsibility, resistance to participation will be a function of their negative evaluations of the course. Again, generalization of affect due to acceptance of responsibility, will probably contribute to differential frequencies of participation.

Operations

Three groups in terms of Overall Acceptance of Responsibility were established,-- a high, a middle, and a low group. This was done independently by sex. The distributions were divided into equal thirds.

The Mann Whitney test of differences was used.

The subjective reactions variable was comprised of (a) liking-dislike of the course, (b) preference for teacher-responsibility or student-responsibility class procedures, and (c) amount of learning subjectively felt,-- which were measured during the fifteenth and sixteenth weeks of the course. The data were provided by coding the reaction reports, observations by the instructor, and by responses to the Course Evaluation Form. Most of the data came from the latter source.

A decision had to be made regarding the frequency of participation variable. Participation data for the thirteenth and fourteenth weeks (the last two-week period during the course for which such data were available) were provided by only forty-nine of the fifty-nine students. For the preceding two-week period (eleventh and twelfth weeks), fifty-eight students were present and provided data. To increase the relevance of possible conclusions to the sub-groups, it was decided to use the combined data for the eleventh to fourteenth weeks.

Results and interpretations

The hypothesis that Overall Acceptance of Responsibility would be monotonically related to subjective reactions late in the course was confirmed for the total group ($P = .003$; one-tail; Mann Whitney) and for the men ($P = .0009$; one-tail; Mann Whitney), but not for the women, though the data for the latter group showed a trend in the predicted direction (see Figures 25, 26, and 27). For the total group and for the men, high acceptors of responsibility were more favorable in their reactions than the low acceptors.

The hypothesis that Overall Acceptance of Responsibility would

be monotonically related to frequency of participation late in the course was confirmed for the total group (P = .01; one-tail; Mann Whitney) and for the men (P = .02; one-tail; Mann Whitney), but not for the women though the data for the latter group tended in the predicted direction (P = .10; one-tail; Mann Whitney) (see Figures 28, 29, and 30). For the total group and for the men, high acceptors of responsibility participated more frequently than the low acceptors.

The results for these two hypotheses seem to justify the conclusion that the response of accepting responsibility (subject to measurement limitations) was related to certain subjective evaluations of the course and frequency of participation in class discussions,-- both late in the course. The results also tend to confirm the theoretical propositions and their implications upon which the hypotheses were based. However, this conclusion seemed more appropriate for the men than for the women.

An implication of acceptance of responsibility, which was developed in Chapter II, was that those students who accepted a great deal of responsibility would learn more and hence would do better in the course than those who tended to reject responsibility. This was the case. Grades in the course, based on term papers, case history analyses, short themes, analyses of experiments, own evaluations, and the instructor's evaluations (made independently of the products turned in), were significantly, positively, and monotonically related to Overall Acceptance of Responsibility (P less than .00001; two-tail; Chi Square 3x3). Both the men and the women showed the same pattern of relationship.

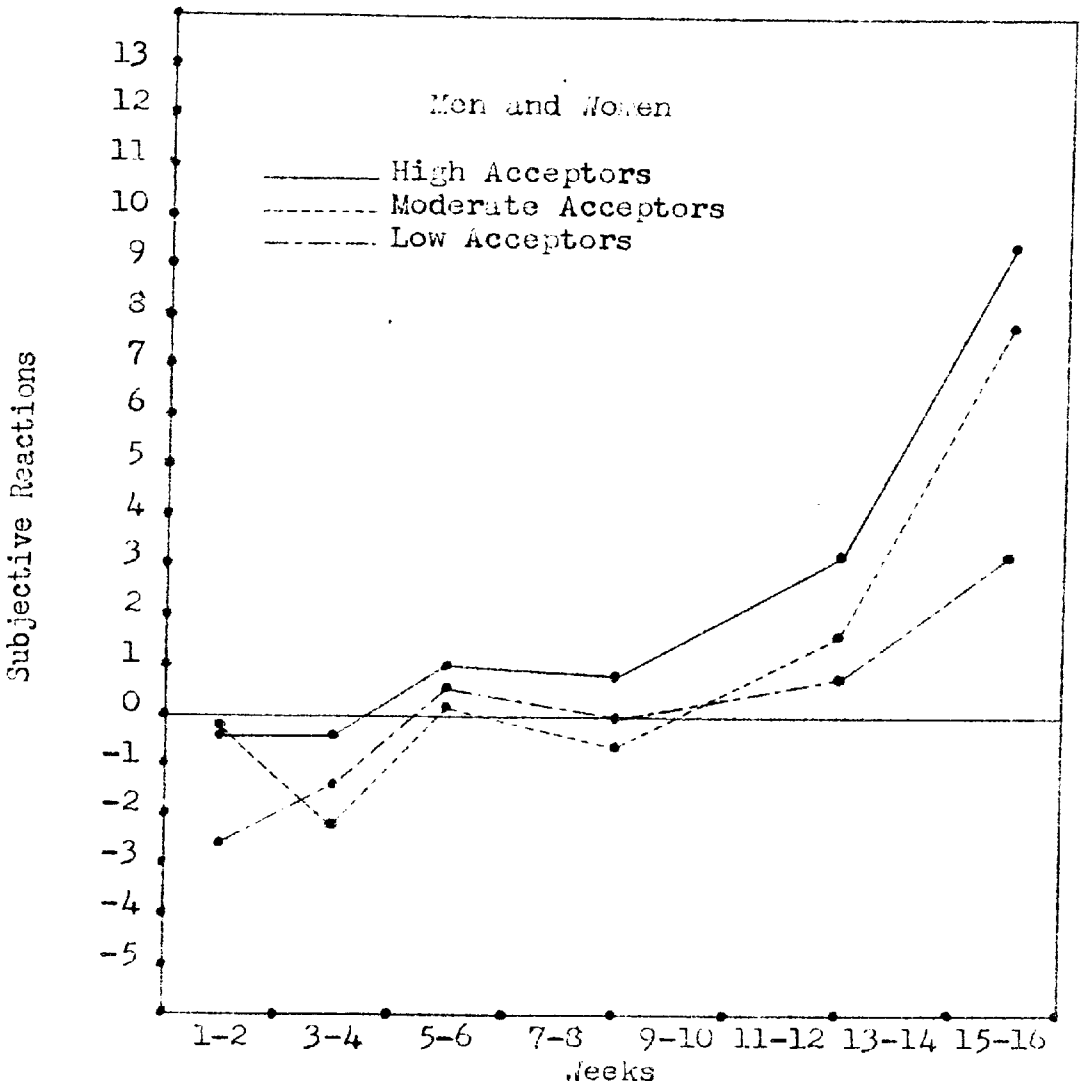


Fig. 25.--Effect of Overall Acceptance of Responsibility on subjective reactions. Points represent means. Size of groups and range of scores for last two weeks:

High accept	18	+17 to +2
Mod accept	19	+14 to -6
low accept	22	+16 to -8

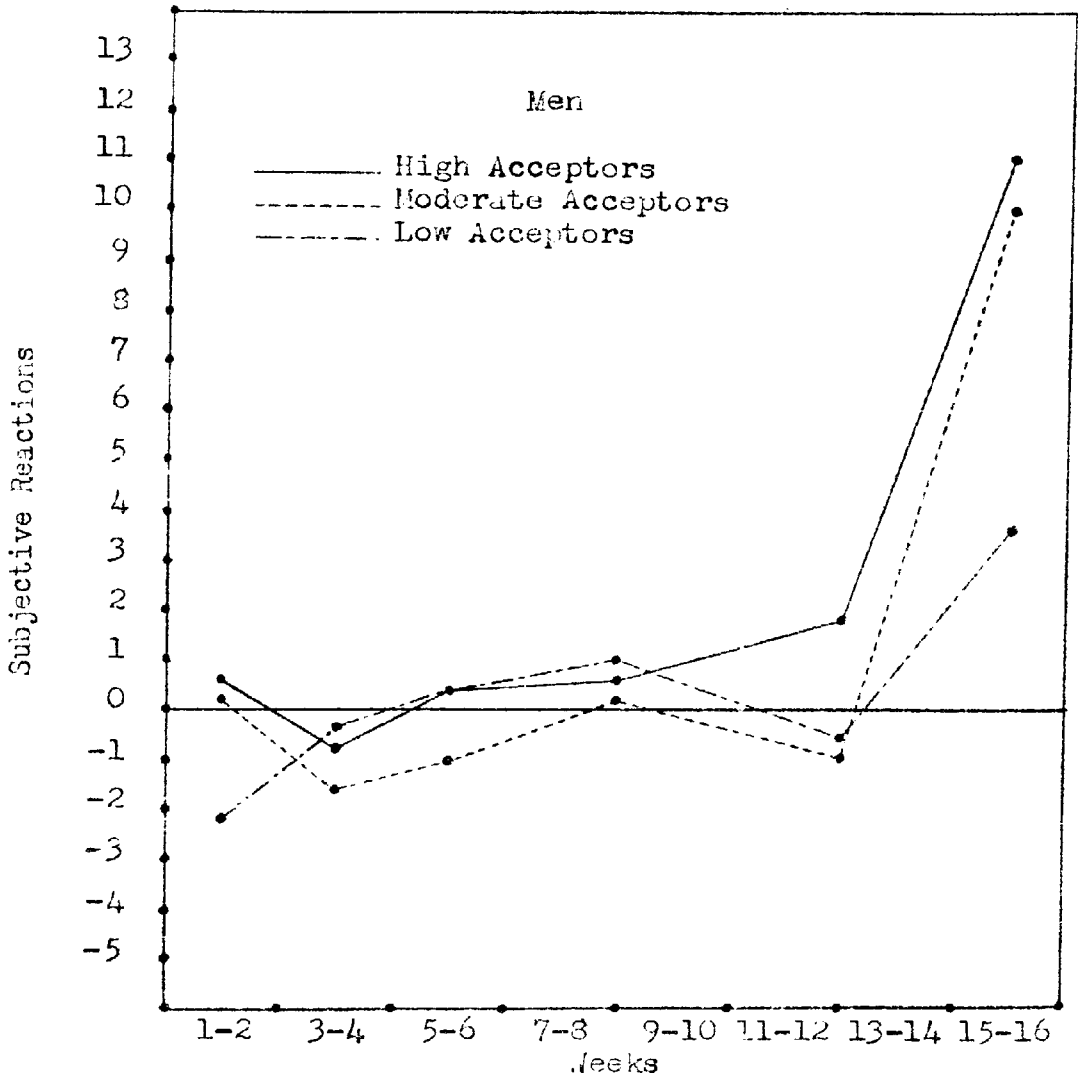


Fig. 26.--Effect of Overall Acceptance of Responsibility on subjective reactions. Points represent means. Size of groups and range of scores for last two weeks:

high accept	8	+16 to +6
mod accept	6	+14 to +6
low accept	12	+10 to -2

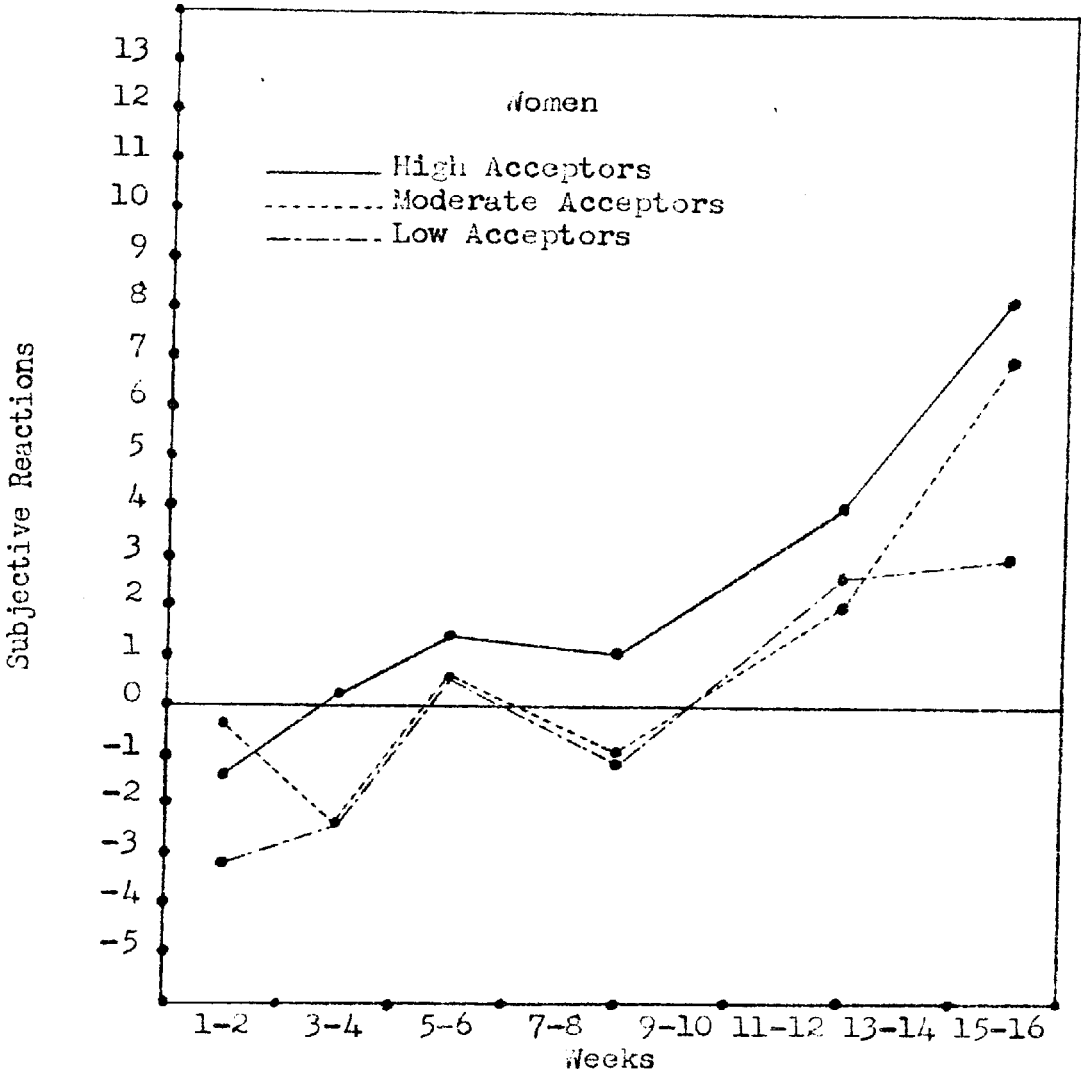


Fig. 27.--Effect of Overall Acceptance of Responsibility on subjective reactions. Points represent means. Size of groups and range of scores for last two weeks:

high accept	10	+17 to +2
mod accept	13	+14 to -6
low accept	10	+16 to -8

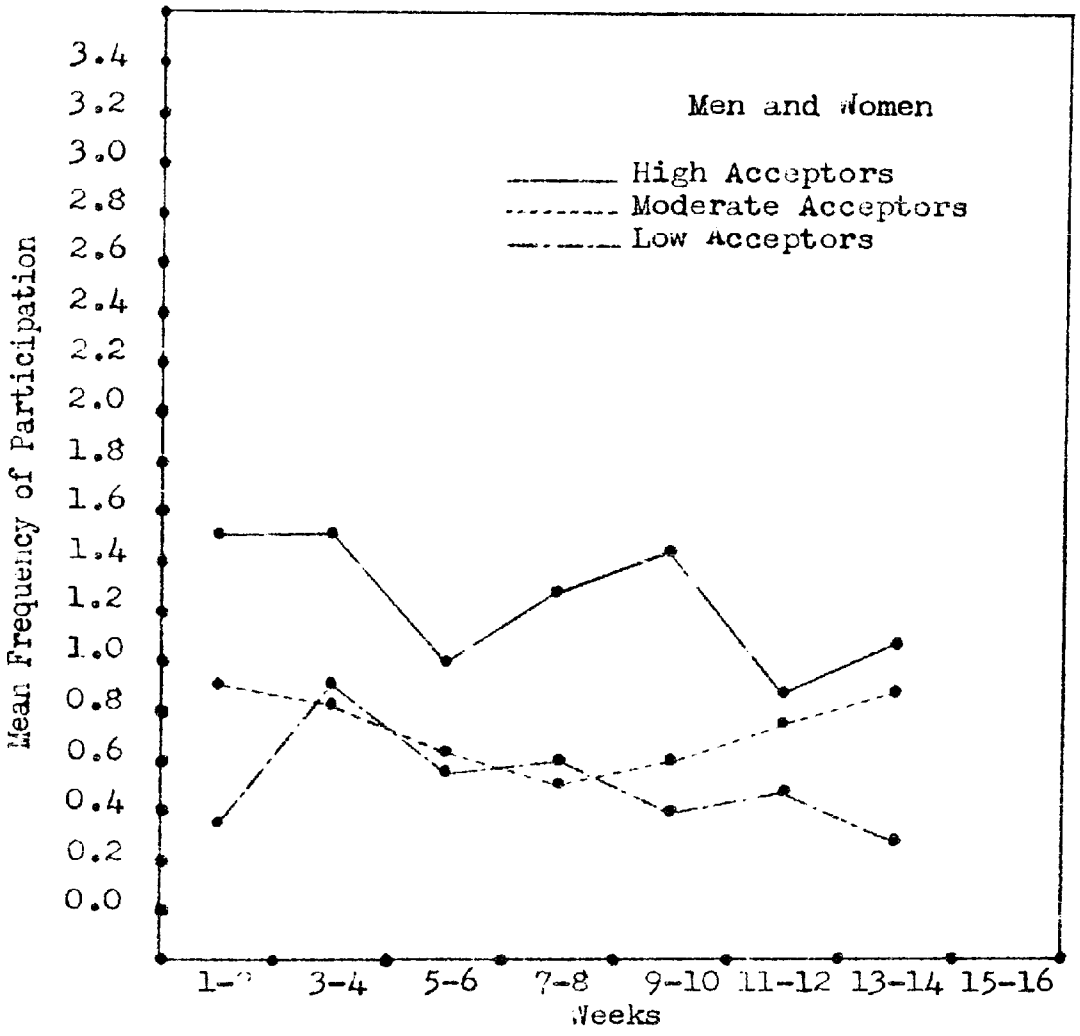


Fig. 28.--Effect of Overall Acceptance of Responsibility on frequency of participation. Size of groups and range of scores for eleventh to fourteenth weeks:

high accept	18	4.0 to 0
mod accept	19	6.0 to 0
low accept	21	2.0 to 0

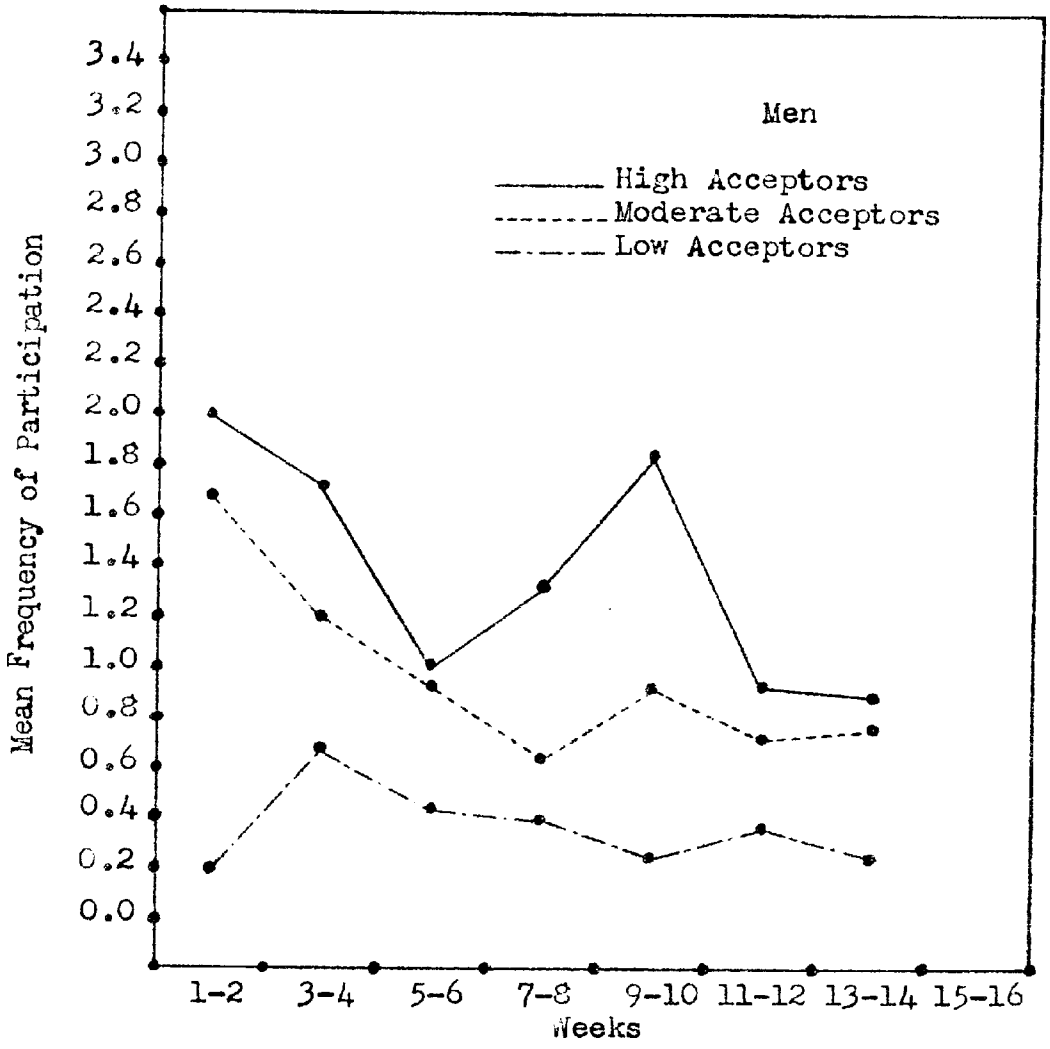


Fig. 29.--Effect of Overall Acceptance of Responsibility on frequency of participation. Size of groups and range of scores for eleventh to fourteenth weeks:

high accept	8	3.0 to 0
mod accept	6	3.0 to 0
low accept	12	2.0 to 0

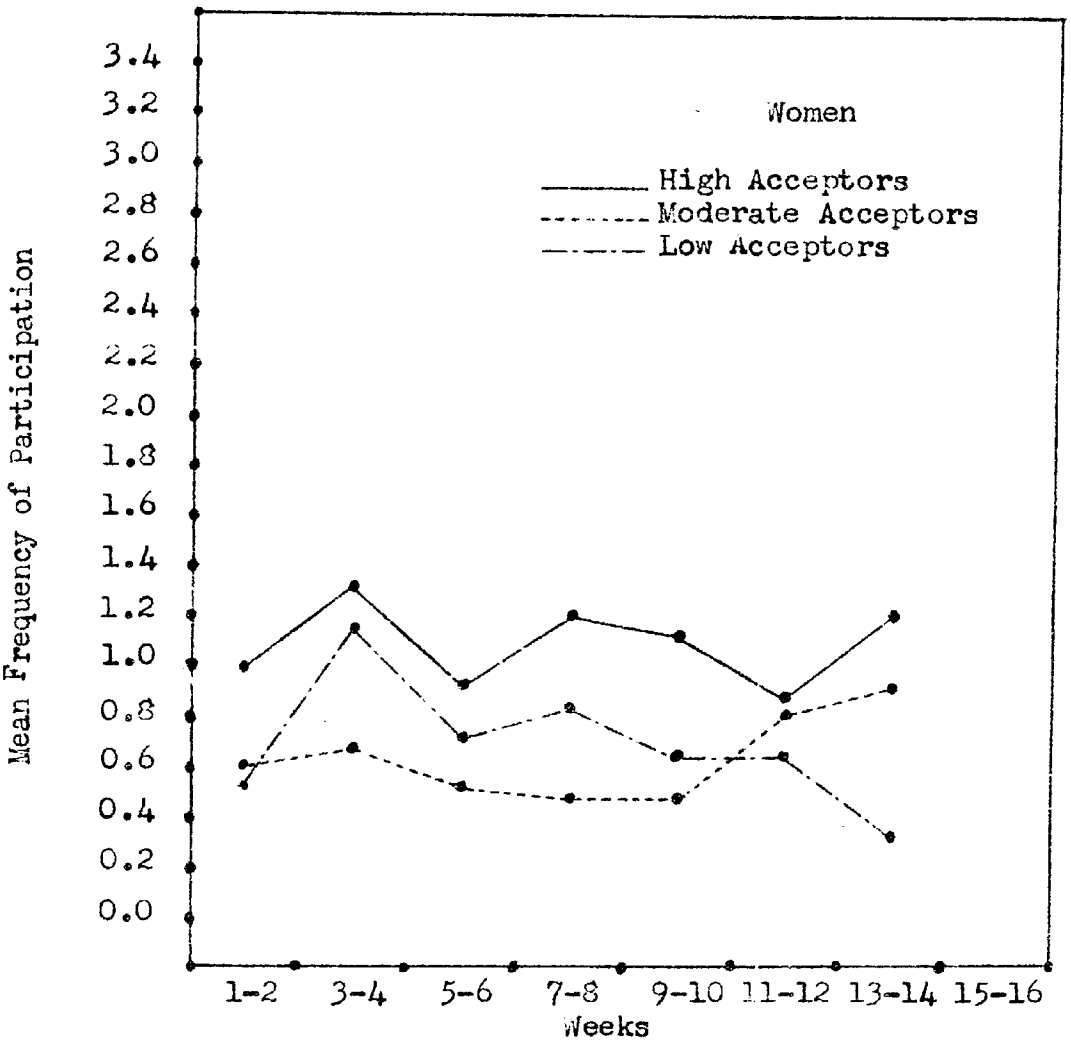


Fig. 30.--Effect of Overall Acceptance of Responsibility on frequency of participation. Size of groups and range of scores for eleventh to fourteenth weeks:

high accept	10	4.0 to 0
mod accept	13	6.0 to 0
low accept	9	2.0 to 0

CHAPTER IV

GENERAL INTERPRETATIONS AND IMPLICATIONS

There were three goals of this study. The first was to determine the effects upon students of a "new" dimension of teaching methods,— student acceptance of individual responsibility for learning. The second was to demonstrate that the response of acceptance of individual responsibility along with certain other reactions could be predicted differentially from certain motivational factors. The third was to demonstrate certain differential effects of acceptance of individual responsibility upon behavior and attitudes late in the course. The three goals can be considered as parts of a broader purpose,— to investigate some of the ramifications of acceptance of individual responsibility by students in their course-related behavior. Each of the three subsidiary goals will now be considered in more detail.

Group Comparison of Effects of Acceptance of Responsibility

The first goal was operationalized by comparing an experimental group taught by the student-responsibility method with control groups taught by the traditional teacher-responsibility method in terms of certain outcomes of the course. To what extent was this goal realized?

The independent variable,— acceptance of responsibility due to intrinsic motivation to learn,— for which the teaching methods were manipulations, seemed to be a crucial factor in the differences which

were found between the groups. The independent variable was complex in that it involved a response which could be observed (acceptance of responsibility) plus an inferred condition in the individual (intrinsic motivation to learn). This latter aspect of the variable was difficult to measure and it is not considered that the measure used was the best one. However, the implications of intrinsic motivation to learn,— far ranging interest in a field, individual initiative in following this interest, etc.,— were incorporated in the coding specifications for this measure. To the extent that sufficient important behavioral implications of intrinsic motivation were used in the coding specifications, to that extent there is a possibility that Overall Acceptance of Responsibility was a measure of acceptance of responsibility due to intrinsic motivation to learn.

The group comparison results seemed to indicate that relatively high degrees of acceptance of responsibility did have effects in certain directions. Some of these effects were: greater satisfaction with the course, greater interest in the field of psychology, and greater ability to apply psychological knowledge to a concrete behavioral problem. These differences, however, should be considered as suggestive only due to certain limitations in the measures used which have been indicated earlier.

In terms of an outcome similar to formal course achievement, relatively high acceptance of responsibility did not lead to higher achievement. This might have been expected, however, because of (a) the usual limitations of multiple-choice "objective" measures which are usually used and (b) the tendency for intrinsically motivated students, when free of pressures to conform to certain patterns of behavior, to concentrate more on understanding the ideas and implications of a field

than on rote learning of content.

Motivation and Early Course Behavior

The degree of success achieved in realizing the first goal of this study has been discussed above. Now, how successful was the attempt to predict acceptance of individual responsibility and certain other reactions early in the course from motivational variables?

Predictions of human behavior usually are far from perfect and this was especially so in this study. It is very likely that many more independent variables would be necessary to increase the efficiency of prediction of those few behaviors which were considered. It is possible that "need Affiliation", "need for Structure", and the characteristic of "flexibility-rigidity" would also be related to these behaviors. However, it was found that both dependence-independence of traditional authority figures and need Achievement predicted acceptance of responsibility plus other subjective reactions for the total group and for the women.

The results obtained with the dependence-independence variable were sufficiently good to justify further refinement of the measure. This refinement probably should involve an increase in length and a further consideration of internal consistency.

Need Achievement also seemed to be good enough to warrant further work with it in this area of behavior. The different results obtained for men and women have had many precedents (13).

The Relationship of Overall Acceptance of Responsibility with Behavior Late in the Course

The third goal of this study was to demonstrate some effects of acceptance of responsibility. Overall Acceptance of Responsibility gave the clearest results of the three independent variables used for

predictions of individual behavior. It should be remembered, however, that there was a suggestion of a sex difference there also in that the results were more significant for the men.

The many relationships found with Overall Acceptance of Responsibility in the different parts of this study suggest that this variable is an important one and should receive further attention.

In this study there were a number of theoretical assumptions which were not tested adequately. Rather, the predictions that were confirmed and the significant differences found between the experimental group and the control groups were taken as supporting the validity of these assumptions. Specific studies, testing these assumptions, would be very desirable.

Some of these assumptions will be considered below. Probably the most important assumption was that acceptance of responsibility as measured in this study was due to intrinsic motivation to learn. The definition of intrinsic motivation, which was sometimes implicit and sometimes explicit, was that this condition is a relatively permanent predisposition to be interested in an area and that this interest is a goal in itself rather than a means for the attainment of other goals. More specifically, an intrinsically motivated student should study, read, and discuss material with minimal concern, on his part, about whether this will facilitate getting a good grade, will facilitate approval of himself by others, or will facilitate the satisfaction of needs to dominate, to be subservient, to affiliate, etc. It is probable, however, that behavior due to intrinsic motivation to learn is evaluated by the individual in terms of criteria which are subjectively determined and which are imbedded in his self concept. Hence, the behavior of

intrinsically motivated students will provide its own satisfactions.

A second assumption was that the student-responsibility manipulation, through the medium of the effects of acceptance of responsibility, would tend to change students from a condition of extrinsic motivation to a condition of intrinsic motivation.

A third assumption was that the teacher-responsibility manipulation would tend to prevent the operation of or development of intrinsic motivation to learn. The idea here was that in a potentially intrinsically motivated student there would be a conflict of pressures,-- pressures to conform to the instructor's requirements and pressures to behave autonomously,-- and that the former pressures would tend to prevail.

A fourth assumption was that autonomous learning behavior due to intrinsic motivation would lead to learning of a different kind and having different effects than conformity learning behavior. The former would probably result in more emotional involvement with ideas and implications and a minimum of rote learning. The latter would probably result in more intellectualized rote learning with a minimum of emotional learning and involvement. Consequently, if these implications are valid, the former learning behavior in the field of psychology would tend to produce more sensitivity to differences in observed behavior, more likelihood of attitudinal changes, and more facility in application of psychology.

In terms of methodological considerations, the attempt to understand the behavior of individual students is but one example of the attempts to understand individual behavior in many other kinds of situations. They represent a step beyond comparisons of larger groups where each member is considered to be a "standard organism" or where

individual differences are assumed to cancel each other. For the understanding of certain problems, the approach in the second part of this study is necessary; for other problems, a group comparison procedure is most appropriate. The present study,-- a group comparison of the effects of a certain response and prediction of individual behavior,-- provides an example of combining these approaches.

CHAPTER V

SUMMARY AND CONCLUSIONS

This study was comprised of two parts. First, a comparison of student-responsibility teaching with teacher-responsibility teaching was made. These two methods of teaching were considered to be manipulations of the independent variable,-- acceptance of responsibility due to intrinsic motivation to learn. Second, behavior early in the course by individual students, taught by the student-responsibility method, was predicted from a measure of dependence-independence of traditional authority figures and from the need Achievement measure; the same kinds of behavior at the end of the course were predicted from a measure of the degree of acceptance of responsibility throughout the course.

Group Comparison of Effects of Acceptance of Responsibility

Student-responsibility teaching involved a continuing effort by the instructor to induce the students to accept individual responsibility for their own learning and other course-related activities. This effort was implemented by removing many of the conditions, usually found in courses, which tend to allow and require students to leave with the instructor the responsibility for deciding class procedures, tests, examinations, content of the course, and reading assignments. In addition, acceptance of individual responsibility and various ways of implementing it were emphasized repeatedly by the instructor. The students were

required to make a number of group and individual decisions regarding the choice of textbook, the class procedures to be used, the system for determining grades, the kind and number of products to be turned in, and topics of individual interest to be followed up by individual students. The expectation was that the making of such decisions would tend to foster greater personal involvement in the success of the course and that this condition would facilitate the acceptance of individual responsibility for course-related behavior.

The two sections of Introductory Psychology taught by this method constituted the experimental group. Three other sections of the same course, taught by two other instructors in a more traditional, teacher-responsibility manner, constituted control group 1. Certain measures were given to the experimental group and control group 1 at the beginning of the course and at the end of the course. An omnibus measure, containing a number of items, was given to the experimental group at the end of the course and to a large lecture group of the same course after completion of the common final examination (control group 2).

The independent variable was the degree of acceptance of responsibility due to intrinsic motivation to learn. It was expected that the teacher-responsibility manipulation would tend to prevent the operation of or development of intrinsic motivation to learn and hence prevent acceptance of individual responsibility whereas the student-responsibility manipulation would tend to allow already present intrinsic motivation to operate and to facilitate the development of intrinsic motivation in other students through the positive effects of responsible behavior which would be required of these students.

There were two measures which contributed to an evaluation of

the effectiveness of these manipulations: (a) change in responses to a measure of attitude toward teachers, teaching, and the functions of education and (b) a measure of acceptance of responsibility throughout the course. These two measures indicated that the experimental and control groups were different in acceptance of responsibility.

The dependent variables were: (a) degree of understanding of psychology at the end of the course and (b) degree of application of psychological knowledge at the end of the course. Two predictions were made: (1) there would be no difference between the experimental group and control group 1 in mean gain of psychological knowledge and (2) there would be no difference between the two groups in mean gain of ability to apply psychological knowledge. The two predictions were not infirmed but for the second, certain factors suggested that the result should not be given much credence.

Certain significant differences were found between the experimental group and control group 2 in terms of the items of the omnibus measure. Members of the experimental group thought that the course had been more valuable than did the members of control group 2. Members of the experimental group showed more interest in further courses in psychology and indicated greater satisfaction with the course. The experimental group showed greater analytic psychological understanding in answers to the question, "Why do students <u>not</u> participate in discussions in Psych. 31?" but there was no difference between the groups in psychological understanding in answers to the question, "Why do students participate in discussions in Psych. 31?" Also, there was no difference between the two groups in terms of self-perceptions of amount of learning.

The measure of the amount of individual responsibility accepted

throughout the course, which could only be obtained for the experimental group, was positively and significantly, or nearly significantly related to increase in psychological understanding, to changes in the ability to apply psychological knowledge, to self-perceptions of amount of learning, of the value of the course, with intensity of interest in the field of psychology, and with satisfaction with the course.

Certain limitations on the validity of the results and ensuing interpretations were pointed out. Subject to these limitations, the tentative conclusion was made that acceptance of responsibility due to intrinsic motivation to learn seemed to mediate effects in students, some of which previously had been found as effects of both "teacher-centered" and "student-centered" methods of teaching. Two of these effects were: (a) a high interest in psychology and (b) high satisfaction with the teaching method. Some suggestions for further research were made, focussed principally on more precise specification of the student-responsibility manipulation and on the elaboration of other possible effects of this manipulation.

Motivation and Course Behavior

The possibility of differential behavior by individual students in a class gave rise to the attempt in this part of the study to predict individual behavior by students in the student-responsibility classes from certain motivational variables. Two motivational variables were used as independent variables and a response variable was used as the third independent variable. The first was dependence-independence of traditional authority figures. A measure of this variable was developed by the experimenter. It was composed of six items, each with four

alternatives. For each item, two of the alternatives represented a dependent and an independent reaction to a traditional authority person and two of the alternatives represented the same two reactions to a peer authority person. The "lead" for each item was set in terms of the conditions of some primitive culture. The subject was required to rank the four alternatives in terms of the likelihood of occurrence for the person indicated in the "lead." Two methods of scoring were developed: (a) a method which involved only the direction of preference across all six items ("direction only" scoring) and (b) a method which involved, in addition, an inclusion of the intensity of the preference measured by the rank discrepancy between the two traditional authority alternatives across all six items ("direction and extent" scoring).

The second independent variable was need Achievement and the measure used was the one developed and refined by McClelland and his associates (13),— a projective measure based on the scoring of stories produced in response to certain standard pictures. The scoring of the experimenter was sufficiently in agreement with a criterion "expert" scorer for the experimenter's scoring of stories produced by the students in the experimental group to be used.

The experimental group took the measures of the first two independent variables at the beginning and at the end of the course.

The third independent variable was the amount of acceptance of individual responsibility throughout the course (Overall Acceptance of Responsibility),— a response variable, which was mentioned in the first part of this chapter. This variable was measured by coding reaction reports turned in every two weeks, by the observation by the experimenter of precoded categories of behavior, and by responses to precoded items of

the omnibus measure (Course Evaluation Form) given at the end of the course.

There were two dependent variables for the predictions to behavior early in the course. The first was subjective reactions plus acceptance of responsibility and comprised acceptance of responsibility, liking for the course, preference for student-responsibility or teacher-responsibility class procedures, and self-perception of amount of learning. Since not enough students produced enough data for each of the sub-elements, the data on the four of them were combined, giving an index of favorable or unfavorable evaluation of the course.

The second dependent variable was frequency of participation in class discussions. This was measured by the experimenter by tabulating the frequency of participation of each student for each period in which the discussion was concerned with the content of the course. The average frequency of participation per student per two-week period constituted the frequency of participation score.

For the predictions to behavior at the end of the course, the independent variable was Overall Acceptance of Responsibility. The subjective reactions dependent variable was the same variable as described above with acceptance of responsibility data removed. The frequency of participation variable was the same as indicated above.

Since the subjective reactions data which were obtained for the first two and the last two weeks of the course were most representative of the total group, those data, for those periods, were used for checking the predictions to behavior early in the course and late in the course. The most representative participation data were obtained during the first two weeks. For predictions to frequency of participation late in the

course, data produced during the eleventh to the fourteenth weeks were used.

Six predictions were made. In operationalizing these predictions, the total experimental group was divided into three sub-groups of approximately equal size, independently by sex, for each of the independent variables. Each prediction was checked for the total group, and for men and women separately. Since a monotonic relationship was predicted in each hypothesis, the extreme sub-groups were compared with each other,-- high independents with dependents, high need Achievers with low need Achievers, and high acceptors of responsibility with low acceptors of responsibility.

The first prediction was that dependence-independence of traditional authority figures would be monotonically related to subjective reactions plus acceptance of responsibility early in the course. While the prediction was not confirmed for "direction only" scoring, it was confirmed for "direction and extent" scoring for the total group and for the women, but not for the men. For the total group and for the women, high independents were more favorable in their reactions than the dependents.

The second prediction was that dependence-independence of traditional authority figures would be monotonically related to frequency of participation early in the course. For neither of the ways of scoring was this prediction confirmed.

The third prediction was that need Achievement would be monotonically related to subjective reactions plus acceptance of responsibility early in the course. The prediction was confirmed for the total group and for the women, but not for the men. For the total group

and for the women, high need Achievers were more favorable in their reactions than the low need Achievers.

The fourth prediction was that need Achievement would be monotonically related to frequency of participation early in the course. The prediction was not confirmed.

The fifth prediction was that Overall Acceptance of Responsibility would be monotonically related to subjective reactions late in the course. The prediction was confirmed for the total group and for the men, but not for the women. For the total group and for the men, high acceptors of responsibility were more favorable in their reactions than low acceptors of responsibility. The data for the women showed a trend in the predicted direction.

The sixth prediction was that Overall Acceptance of Responsibility would be monotonically related to frequency of participation late in the course. The prediction was confirmed for the total group and for the men, but not for the women. For the total group and for the men, high acceptors of responsibility participated more frequently than low acceptors of responsibility. The data for the women showed a trend in the predicted direction.

The relationships among the independent variables were considered. Need Achievement was not related to dependence-independence of traditional authority figures or to Overall Acceptance of Responsibility. Dependence-independence of traditional authority figures tended to show a non-monotonic relationship with Overall Acceptance of Responsibility for both ways of scoring the former. For the women, the dependents and moderate independents either accepted a great deal of responsibility or rejected it while the high independents accepted a moderate amount

of responsibility. For the men, the high independents and dependents accepted a moderate or high amount of responsibility while the moderate independents rejected responsibility.

The conclusion was made that high acceptance of responsibility due to intrinsic motivation to learn was the crucial factor in the differences between the experimental and control groups and also in producing the positive subjective reactions and high frequency of participation late in the course.

APPENDIX A

A CHRONOLOGICAL ACCOUNT OF COURSE EVENTS

FOR THE EXPERIMENTAL GROUP

First Week

Section 31
- Pre-measures administered.
- Introductory course sheet given out.
- Class vote (27 to 1 in favor) that each student choose his text individually.
- Class vote (26 to 1 in favor) that the first hour be spent in small group discussions and the last hour in discussion by the total group.

Section 32
- Pre-measures administered.
- Introductory course sheet given out.
- Class vote (29 to 0 in favor) that each student choose his text individually.
- Class vote (25 to 3 in favor) that the first hour be spent in small group discussions and the last hour in discussion by the total group. For the last hour, students would rotate chairman duties.

Second Week

Section 31
- Reaction report forms given out.

Section 32
- Reaction report forms given out.

Third Week

Section 31
- Class vote (15 to 7 in favor) that students rotate chairman duties for discussions during the second hour.
- Feedback on first reaction reports was given to class.

Section 32
- Class vote (21 to 3 in favor) that each student produce something relevant to psychology to be the basis of at least part of the final grade; the choice was to be left to the student.
- Feedback on first reaction reports was given to class.

Fourth Week

Section 31 The use of case history material was started.
Section 32 The use of case history material was started.

Fifth Week

Section 31 Class vote (25 to 0 in favor) that each student choose the product or products he will produce for grades; he should check with the instructor after he has chosen the topic.
Some comments were made to the class emphasizing the student-responsibility theme of the course and implementations were suggested; critical comments were directed at those who were abusing their freedom in the course.

Section 32 The same comments as indicated above were made.

Sixth Week

Section 31 Class vote (13 to 6 in favor) that the grades in the course be determined in the following ways:
(1) 60% of grade to be based on a term paper or its equivalent (three case history analyses, short themes, analyses of experiments, oral reports to class, or panel discussions). One additional product equivalent to one third of a term paper could be counted.
(2) 30% to be based on "own estimate."
(3) 10% to be based on the instructor's estimate.
(2) and (3) to be independent of (1)

Seventh Week

Section 32 Class vote (unanimous) to adopt the grading system decided by the other section with the proviso that if own estimate and instructor's estimate differed by more than one grade, the instructor and the student concerned would get together and come to a decision.

Eighth Week

Section 32 Class decided to drop the case histories for a while to concentrate on "learning" and "perception."

Ninth Week

Instructor decided to hold individual consultations with those students who were indicating extreme dislike for the course to find out the reasons and to suggest (if appropriate) that the course did not require that they be present in class if they felt they would learn more by work outside of class.

During the fourteenth week the post-measures were administered and during the fifteenth week feedback on the study was given.

APPENDIX B

THE INTRODUCTORY COURSE SHEET

Psychology 31

Fall Semester 1953-54 Sections 31 and 32

A. This course will be run somewhat differently from the manner you probably expected. The following are the conditions which will hold for this course.

(1) There will be no final examination.

(2) There will be no semester tests.

(3) There will be no formal lectures by the teacher.

(4) There will be no assigned readings either in a text or in outside sources.

(5) Each student will turn in at two week intervals a reaction report incorporating (a) your feelings about and evaluation of the class procedures and class decisions, (b) your suggestions for improving the course, and (c) your reactions to the content of what you have been reading, what has been discussed in class, or what has been discussed outside of class. You will receive sheets prepared for this purpose.

B. This still leaves a large area of course behavior "up in the air." It is here that you, the students, have entire responsibility for making decisions and carrying them out.

(1) Textbook.
You are to decide (a) whether you will all use the same text or whether each will decide for himself.
(b) if you decide to use the same text, then you must further decide which one it will be.

Following is a list of commonly used texts with some comments.

Johnson D.M. Essentials of Psychology (chatty, easy to read, but not a very deep treatment)

Murphy G. An Introduction to Psychology (nicely written but principles hard to pull out)

Ruch F.L. Psychology and Life (a wealth of information but deficient in theoretical organization)

Stagner and Karwoski Psychology (fairly difficult but rewarding)

Cole L. Human Behavior (a challenging but very difficult book)

Hilgard E.R. Introduction to Psychology (being used by all other sections; however, some students may find it too elementary)

(2) Class Procedures (within the limits set by A above)
The following are class procedures which have been used previously. You are to decide on one or a combination of these. You may also suggest other procedures. This list is not necessarily comprehensive.

(a) A system whereby the chairmanship of the class periods rotates through all the members of the class. This procedure will work equally well whether previously determined topics are discussed or whether topics are discussed as they arise from the class.

(b) A system whereby the class splits up into several active discussion groups for part of the session and representatives of each group present the results of the discussions to the whole class for the remainder of the session. Under such a system, the teacher moves from one group to another as his help is requested. One advantage of this system is that each member of the small group has an opportunity to raise and answer questions and participate frequently in the discussion. One disadvantage is that interesting comments and illustrations raised in one group, which do not appear in the presentation of the results of the discussion, are missed by the remainder of the class.

(c) A system whereby groups of three or four students work up and present some topic in a comprehensive manner. This presentation has most frequently been in the form of a planned panel discussion. One advantage of this system is that in the working up of a topic, the participants must delve quite deeply into and obtain an increased understanding of that topic.

(3) Products.
The following have been produced previously in courses of this nature. Again, this list is only suggestive; you may add if you wish. You are to decide on none, or one or more of these products.

(a) A comprehensive term paper on some broad topic.

(b) One or more short themes on fairly particular topics.

(c) One or more critical analyses of experiments or investigations.

(d) One or more analyses of case histories.

(e) A panel presentation of some topic (see B (2) (c) above).

(4) Grades.
Letter grades must be turned in at the end of the semester. It is your responsibility to decide the way or ways in which such grades are determined. If you should decide to require one or more products (see B (3) above), then these products could form the basis of evaluation for grades. If you decide these products should be evaluated, you probably would wish the teacher to make the evaluations, though this is not absolutely necessary. There is one further procedure which has been used. This requires each student to turn in at the end of the semester the grade felt deserved. This report is usually given a weight in the computation of the final grade,-- a weight decided on by the class.

(5) The content of the course.
All textbooks are divided into sections corresponding usually to such conceptual areas as motivation, perception, learning, abilities etc. It is felt that whatever class procedure is decided upon, it would be necessary to spend at least the first part of the semester working on these conceptual areas.

Sometimes the course content has been oriented around social problems rather than around the conceptual areas mentioned above. Some typical social problems that have been used are,-- delinquency, marital adjustment, problems of old age, etc. These social problems have been used as the focus of attention and in the treatment of the problem the psychological concepts above have been applied.

So you will have to decide (a) whether the complete semester will be spent on psychology as organized and presented in texts or (b) whether to spend the first part of the semester following textbook organization and for the last part of the semester to work on social problems.

(6) Some further considerations.

(a) This kind of course allows each student to dig into and follow up any topics or problems in which he becomes interested. Since he is not beset by assignments from the teacher (both for reading and for tests), the student usually has the time for this kind of work. Probably it would be wise to get through the text first before branching out in this way.

In line with this possibility of relatively independent work, your teacher has a list of supplementary, short readings with some comments on each which should prove useful for the following up of interests. Whenever during the course you feel that you would like a copy of this list, you have merely to ask for it.

(b) It has been the custom to have films presented during the course. If you wish, this can be arranged.

APPENDIX C

THE PSYCHOLOGICAL UNDERSTANDING TEST

The purpose of the following items is to see how well you understand human behavior. For each item there is one best answer. Place an X in the space at the left of the alternative which you think is the best answer for that item.

Item 1.

How much can one rely upon the memories of honest witnesses in criminal cases?

_____ Memory for details will be good, but the overall impression will reflect the witness' biases.
_____ If the witness' story is logical, it is probably fairly reliable.
_____ The witness will probably not remember all that happened, but what he does remember will be reliable.
__X__ The witness will probably not remember all that he saw, and will add details to fit in with his overall impression.

Item 2.

The common belief that children have better imaginations than their elders is probably due to

_____ the superior vocabulary of the adults.
_____ children's delight in using their imaginations.
__X__ children's inability to distinguish fact from fiction.
_____ adults' lack of interest in imagination.

Item 3.

From which of the following could you best judge the type of emotion a person is experiencing?

__X__ The situation in which the emotion appeared.
_____ The person's total observeable behavior.
_____ Interpretation of the results of measurements of physiological changes, eg., blood pressure, pulse rate, etc.
_____ What the person tells you about it.

Item 4.

Popular psychology books often suggest that you can improve your personality by changing single traits. What is the matter with this approach to personality change?

__X__ You cannot alter one trait without changing others.
_____ You may select too superficial a trait for improvement.
_____ In trying to develop some desirable form of behavior you may overdevelop a trait.
_____ You may not pick the traits that are the biggest problem.

Item 5.

Martin is a stubborn, aggressive ten year old who resists all authority. Will he be the same way when he is nineteen?

__X__ Don't know because no one knows what will happen to him in the meantime.
_____ No, because adolescence produces changes in personality.
_____ Yes, because personality determined by experiences in infancy does not change.
_____ Don't know, because psychology deals with general laws of behavior and not with predictions of individual behavior.

Item 6.

How do most people develop very definite attitudes, either favorable or unfavorable, toward certain minority groups?

_____ By considering the pro and con arguments regarding the groups.
_____ Through personal experience with the members of each of the minority groups.
__X__ By adopting the attitude most prevalent and acceptable in the social group to which they belong.
_____ By being influenced by the propaganda of the minority groups.

Item 7.

Jimmy is generally known as the school bully and is often seen picking on smaller children. The best way of handling this might well be to

__X__ interest him in the school basketball team.
_____ warn him, but do not punish him; he will grow out of it.
_____ allow a bigger boy to "lick" him, so he will know how it feels.
_____ allow him to associate only with older children.

Item 8.

A greater percentage of people from urban communities are committed to institutions for the mentally ill than people from rural areas. Which one of the following statements is the best explanation of this fact?

_____ Rural families are physically healthier and thus have a greater capacity for resisting mental breakdowns.
__X__ Urban life is characterized by a greater number of conflict situations.
_____ Minor cases are not noticed as easily in urban communities; thus more people break down for lack of treatment.
_____ Rural residents are healthier mentally because they are of a purer racial stock.

Item 9.

We would be very interested in parts of a novel dealing with food instead of those parts dealing with sex if

_____ we were neurotic.
__X__ we lived in a society in which sex was not frustrated and good food was always hard to get.
_____ our parents forced us to read about food.
_____ books dealing with sex were hard to obtain.

Item 10.

A "sissy" is considered to be abnormal in our society because of

_____ his endocrine deficiency, especially of the sexual hormone.
_____ defects in his Y chromosome.
_____ his lack of brothers and sisters.
__X__ his lack of conformance to the group code.

Item 11.

If an orphan boy, raised by foster parents, is examined in the following areas, in which one of the areas is he most likely to resemble his real parents more than his foster parents?

__X__ Aptitudes.
_____ Interests.
_____ Attitudes.
_____ Character.

Item 12.

George cheats quite often while playing tennis. A group of his friends were overheard talking about him. Which conclusion advanced do you think is most justified?

_____ If he is dishonest in one situation, he is not to be trusted in any other situation.
__X__ George probably cheated because he wanted to win badly, but I wouldn't conclude that he is naturally dishonest.
_____ Some people are just naturally cheaters; I guess George is one of them.
_____ If he cheats in tennis, he would probably steal if he had the opportunity to do so.

Item 13.

A fortune teller advised 100 people. Eighty claimed they followed the advice and were successful. Before it can be granted that the fortune teller gave good advice, which of the following would it be necessary to know?

_____ What did the other twenty say?
_____ Did the eighty really take the advice?
_____ Did the fortune teller administer tests?
__X__ Would the eighty have been less successful if they had not followed the advice?

Item 14.

A boy tells his father that he once ate with some French soldiers and he was surprised to find that the French people had such terrible table manners. Which of the following possible replies that the father might make would be most sound?

_____ "The table manners of American people are nothing to brag about."
__X__ "It isn't well to draw such a conclusion on the basis of your limited experience."
_____ "I am not in any position to judge your conclusion because I have had no experience with French people."
_____ "It isn't well to make slanderous remarks about other people."

TABLE 5

DISTRIBUTION OF SCORES FOR PSYCHOLOGICAL UNDERSTANDING TEST

No. of Items Correct	Exp. Group N = 59		Control Group N = 72	
	Pre	Post	Pre	Post
14	0	3	0	1
13	3	2	1	7
12	3	13	9	12
11	13	16	23	30
10	18	10	19	10
9	10	11	10	7
8	10	2	8	3
7	0	1	1	2
6	1	1	1	0
5	0	0	0	0
4	1	0	0	0

TABLE 6

DISTRIBUTION OF GAINS FOR PSYCHOLOGICAL UNDERSTANDING TEST

Gains	Exp. Group N = 59	Control Group N = 72
5	1	1
4	2	1
3	6	6
2	7	14
1	22	17
0	12	18
-1	2	10
-2	6	3
-3	1	1
-4	0	1

APPENDIX D

THE PROVERBS MEASURE

Proverbs embody the wisdom of the ages but often tell only part of the truth. In the examples following, mark the proverb T if you believe it contains more truth than falsehood, and mark it O if you believe it to be more false than true.

O Familiarity breeds contempt.

T Practice makes perfect.

O The faster you learn, the faster you forget.

O A bad beginning makes a bad ending.

O A reformed rake makes the best husband.

O You can't change human nature.

O You can't teach an old dog new tricks.

O Spare the rod and spoil the child.

TABLE 7

DISTRIBUTION OF SCORES FOR PROVERBS MEASURE

No. of Items Correct	Exp. Group N = 59		Control Group N = 72	Control Group N = 71
	Pre	Post	Pre	Post
8	8	5	7	10
7	16	18	28	29
6	16	14	26	26
5	10	13	7	5
4	7	8	4	1
3	2	1	0	0

TABLE 8

DISTRIBUTION OF GAINS FOR PROVERBS MEASURE

Gains	Exp. Group N = 59	Control Group N = 71
4	1	0
3	1	1
2	4	9
1	10	13
0	19	32
-1	17	13
-2	7	3

APPENDIX E

ATTITUDE TOWARD TEACHERS, TEACHING, AND

THE FUNCTIONS OF EDUCATION

Rank the following statements from most agreement to least agreement by placing a 1 at the left of the statement with which you most agree, a 2 at the left of the statement with which you feel the next highest agreement, all the way down to 11 which represents the statement with which you agree the least.

Don't deliberate too long: trust your first impressions.

I THINK A GOOD TEACHER SHOULD BE

TR somewhat older than his students.

_____ sincere.

SR convinced that teaching requires responsibility from both teacher and students.

_____ good natured.

TR firm in manner as befitting his position of authority.

_____ patient.

SR flexible in his thinking.

_____ happy.

TR somewhat reserved in manner.

_____ very intelligent.

SR aware of what students want.

Rank the following statements from most agreement to least agreement by placing a 1 at the left of the statement with which you most agree, a 2 at the left of the statement with which you feel the next highest agreement, all the way down to 11 which represents the statement with which you agree the least.

Don't deliberate too long: trust your first impressions.

I THINK A GOOD TEACHER SHOULD

TR make clear to his students that working and studying in accordance with his directions will be more efficient than if they try to decide things themselves.

_____ stimulate his students.

SR try to get his students to accept responsibility for their own learning.

_____ foster a pleasant atmosphere in the classroom.

TR take responsibility in making sure that his students learn what is required.

_____ show respect for students' opinions.

SR willingly accept new ideas from his students.

_____ know what he is doing.

TR maintain a social distance between himself and his students.

_____ have social charm.

SR encourage students to work on their own initiative.

Rank the following statements from most agreement to least agreement by placing a 1 at the left of the statement with which you most agree, a 2 at the left of the statement with which you feel the next highest agreement, all the way down to 11 which represents the statement with which you agree the least.

Don't deliberate too long: trust your first impressions.

I THINK MY EDUCATION IS VALUABLE BECAUSE

TR it will let me in on things which have been denied me because I don't have a college degree.

_____ it will give me knowledge.

SR it will give me the means of becoming a responsible member of my community, able to make my own decisions.

_____ other people look up to college graduates.

TR it will give me the degree which is necessary to get a good job.

_____ in getting it, I feel that I am improving myself.

SR it will allow me to appreciate what happens to me, to my community, and to the world as the future unrolls.

_____ education is valued by our society.

TR it will allow me to make the amount of money that I want.

_____ I know the benefits it will give me.

SR it will give me a start in a continuing study of whatever might interest me in the future.

TABLE 9

DISTRIBUTION OF SUMMED TR RANKS FOR THE MEASURE OF ATTITUDE TOWARD TEACHERS, TEACHING, AND THE FUNCTIONS OF EDUCATION

Summed Ranks	Exp. Group N = 59		Control Group N = 70	
	Pre	Post	Pre	Post
87-88	0	1	0	0
85-86	2	7	3	1
83-84	3	7	10	3
81-82	8	7	6	8
79-80	3	1	9	11
77-78	8	5	9	7
75-76	12	7	3	7
73-74	5	4	6	8
71-72	4	5	6	5
69-70	3	3	4	2
67-68	4	4	6	7
65-66	4	1	2	2
63-64	0	1	1	4
61-62	1	2	0	2
59-60	1	3	1	2
57-58	0	0	0	0
55-56	1	0	1	0
53-54	0	0	2	1
51-52	0	1	0	0
49-50	0	0	0	0
47-48	0	0	1	0

TABLE 10

DISTRIBUTION OF SUMMED SR RANKS FOR THE MEASURE OF ATTITUDE TOWARD TEACHERS, TEACHING, AND THE FUNCTIONS OF EDUCATION

Summed Ranks	Exp. Group N = 59		Control Group N = 70	
	Pre	Post	Pre	Post
63-64	1	0	0	0
61-62	0	0	0	0
59-60	0	0	0	0
57-58	1	0	1	2
55-56	0	3	0	0
53-54	0	0	3	0
51-52	1	2	0	2
49-50	1	3	1	1
47-48	2	0	6	5
45-46	3	3	3	4
43-44	4	0	4	5
41-42	4	5	3	2
39-40	5	6	8	4
37-38	5	4	5	3
35-36	11	7	3	7
33-34	1	3	7	6
31-32	5	3	8	8
29-30	8	7	3	6
27-28	2	5	2	8
25-26	3	2	6	4
23-24	2	1	3	3
21-22	0	3	3	0
19-20	0	2	1	0

TABLE 11

DISTRIBUTION OF TR MINUS SR SUMMED RANKS FOR THE MEASURE OF ATTITUDE TOWARD TEACHERS, TEACHING, AND THE FUNCTIONS OF EDUCATION

Units	Exp. Group N = 59		Control Group N = 70	
	Pre	Post	Pre	Post
66-68	0	1	0	1
63-65	0	0	0	1
60-62	0	2	3	0
57-59	0	1	3	2
54-56	3	4	2	3
51-53	5	5	6	5
48-50	5	5	6	5
45-47	10	8	6	7
42-44	3	7	8	7
39-41	10	2	6	4
36-38	1	3	6	4
33-35	6	5	6	5
30-32	3	4	4	6
27-29	2	2	2	4
24-26	2	0	4	5
21-23	4	2	0	6
18-20	2	2	2	1
15-17	0	3	0	1
12-14	1	0	1	1
9-11	1	0	0	2
6- 8	0	2	2	0
3- 5	0	0	0	0
0- 2	0	0	1	0
-3 -1	0	0	2	0
-6 -4	0	1	0	0
-9 -7	1	0	0	0

APPENDIX F

THE COURSE EVALUATION FORM

1. How much reading did you do in this course as compared with your other courses?

   more _____ same _____ less _____

   Comment (if you wish)

2. How much understanding of human behavior would you say you've acquired in this course?

   much _____ some _____ little _____ none _____

3. Has this understanding (to whatever extent) come from reading _____

   class discussion _____ mulling things over outside of class _____

   Comment (if you wish)

4. Consider the following aspects of the course in relation to their value to you.

   (1) class discussions much value _____ some value _____

   little value _____ no value _____

   Comment (if you wish)

   (2) reading no value _____ little value _____

   some value _____ much value _____

   Comment (if you wish)

   (3) thinking and talking outside of class about things suggested by class discussions or reading.

   much value _____ some value _____

   little value _____ no value _____

   Comment (if you wish)

(4) free discussion nature of course no value _____ little value ____

some value _____ much value ____

Comment (if you wish)

(5) chance to express my own thoughts and opinions

much value _____ some value _____ little value _____ no value ____

Comment (if you wish)

5. How much do you feel you have profited from your experience in this course as compared to other courses?

much less _____ less _____ about the same _____ more _____

much more _____

6. Were you able to find time to do any reading in psychology beyond that required for term paper, themes, analyses, etc., and regular reading in your one text?

no _____ yes _____

(if yes) indicate the source or sources of this additional reading

7. Have you become interested during this semester in taking further courses in psychology (assuming that you could arrange your courses as you would like)?

yes _____ no _____

(if yes) which course or courses would you be interested in taking?

Psych. 51 (Psych of Adjustment) _____
" 55 (Psych of Religion) _____
" 62 (Social Psych) _____
" 78 (Parent-child Relationship) _____
" 94 (Psych of Management) _____
" 108 (Psych of Language Function) _____
" 109 (Market and Consumer Research) _____
" 113 (Psych of Music) _____
" 114 (Psych of Art) _____
" 117 (Sensory Basis of Knowledge) _____
" 121 (Human Traits and Abilities) _____
" 123 (Motivation and Behavior) _____
" 125 (Perception and Thought) _____
" 131 (Individual and Race Differences) _____
" 132 (Vocational Psych) _____
" 174 (Modern Viewpoints in Psych) _____
" 184 (Human Learning) _____
" 188 (Psych and Contemporary Problems) _____

Comment (if you wish)

8. If you knew that Psych. 31 next semester would be the same kind of experience as it has been for you this semester, would you recommend it to other prospective students?

   no _____ yes _____

   Comment (if you wish)

9. Did you feel frustrated in Psych. 31 this semester?

   yes _____ no _____

   (if answer is yes)

   (1) what was the block to your motive or motives?

   (2) what was the motive or motives involved?

   (3) was the frustration temporary _____ or persistent _____?

   (if answer is temporary) what happened to remove the frustration?

   Comment (if you wish)

10. Why do students not participate in discussions in Psych. 31?

11. Why do students participate in discussions in Psych. 31?

12. If you were responsible for planning next semester's course, how would you change it?

13. Have you any general comments you would like to make about the course (or particular ones for that matter)?

Following are the responses to certain items of the Course Evaluation Form which were pre-selected for comparison of experimental and control groups.

Item 2. How much understanding of human behavior would you say you've acquired in this course?

Proportion responding "much"

Experimental group	.49	N = 59
Control group 2	.44	N = 80

Item 5. How much do you feel you have profited from your experience in this course as compared to other courses?

Proportion responding "more" and "much more"

Experimental group	.63	N = 59
Control group 2	.49	N = 78

Item 7. Have you become interested during this semester in taking further courses in psychology (assuming that you could arrange your courses as you would like)?

Proportion responding "yes"

Experimental group	.91	N = 58
Control group 2	.89	N = 79

Mean number of choices made by those who responded "yes"

Experimental group	4.51	SD = 2.99	N = 53
Control group 2	3.57	SD = 2.25	N = 70

Item 8. If you knew that Psych. 31 next semester would be the same kind of experience as it has been for you this semester, would you recommend it to other prospective students?

Proportion responding "no"

Experimental group	.16	N = 56
Control group 2	.31	N = 72

APPENDIX G

MEASUREMENT OF "SUBJECTIVE REACTIONS PLUS ACCEPTANCE OF RESPONSIBILITY"

Coding Categories for Reaction Report Data

Acceptance of Responsibility

awareness of student responsibility for learning
outside reading in some area
working on own outside of class during class hours
desire to do a paper on some topic
"realize it's up to me"
"best way to improve class is to improve myself"

Rejection of Responsibility

"I don't want to be chairman"
"have goofed off the last two weeks"
"I won't do any more if my group won't"
"very little inspiration to prepare for this class"

Liking for the Course

indication of enjoyment of the course
indication of interest in the course
"am enjoying course more and more"
"everything has been interesting"
"never a dull moment reading or discussing"

Dislike of the Course

"subject matter is dull"
"I am fairly disgusted"
"discussions are boring"

Preference for Student-responsibility Procedures

"no improvement in class procedures necessary"
"approve of class procedures"
"procedures are efficient"
"decisions have been for the best"

Preference for Teacher-responsibility Procedures

"prefer a lecture"
"instructor should conduct class discussions"
"instructor should give assignments"
"need some power or strong hand to push us"
"informality defeats efficiency"
"prefer quizzes on the textbook"
"instructor should ask definite questions"
"instructor should have more to say about our grades"
"class procedure is not very effective"
"class should decide on definite topics for each day"

Much Felt Learning

indication of much learning
"have gained knowledge about humans"
"have changed my attitudes toward psychology"
"what I have learned is helping me in other classes"
"discussions are very valuable"
"have felt very enlightened by my reading"

Little Felt Learning
"can't learn from book"
"we're not as far ahead as we should be"
"discussions have been useless"
"would have learned more in a regular class"

Precoded Behaviors Observed by the Instructor

Acceptance of Responsibility

own choice of topic for paper
picking up the suggested reading list
reading more than one text

Rejection of Responsibility

asking the instructor for a topic for a paper

Coding for Course Evaluation Form

Acceptance of Responsibility "yes" to item 6

Rejection of Responsibility "no" to item 6

Liking for Course "yes" up to "yes" plus two choices (item 7) (scored plus one)
"yes" plus three or more choices (item 7) (scored plus two)

Dislike of Course "no" to item 7

Preference for Student-responsibility Procedures "yes" to item 8

Preference for Teacher-responsibility Procedures "no" to item 8

Much Felt Learning "much" to item 2
"much more" or "more" to item 5

Little Felt Learning "little" or "none" to item 2
"less" or "much less" to item 5

Free comments to any of the items were coded if they met the criteria established for coding the reaction reports.

TABLE 12

RELIABILITY OF CODING OF REACTION REPORTS*

Coder	Instructor		Coder #2		Behavior Categories
	.61	(26)**			Liking-dislike
	.74	(26)			Accept. of Resp.
Coder #2	.67	(59)			Pref. for "TR" or "SR"
	.94	(35)			Felt Learning
	.82	(61)			Four Categories Summed
	.63	(22)	.62	(22)	Liking-dislike
	.70	(25)	.66	(31)	Accept. of Resp.
Coder #3	.61	(49)	.49	(50)	Pref. for "TR" or "SR"
	.82	(32)	.81	(40)	Felt Learning
	.76	(60)	.81	(60)	Four Categories Summed

*Scores used were the sums of scores per category per coder per student for all reaction reports turned in.

**Entries are product-moment r's followed by N in brackets.

APPENDIX H

THE MEASURE OF DEPENDENCE-INDEPENDENCE

OF TRADITIONAL AUTHORITY FIGURES

The Original Form

The following is a guessing test. What I would like you to do is to read the heading and alternatives for an item and then guess which item represents the most likely behavior of the character depicted. Place a 1 at the left of the alternative you guess to be most likely, a 2 at the left of the alternative you guess to be next likely etc., till you have ranked the four alternatives.

Item 1.
Tata had been learning to fish from the reef. He saw a devil fish in a hole in the side of the reef. He wanted to catch it and he had his "come hither stick" with him.
Guess what Tata did.

_____ He asked the leader of the fishing expedition what to do and then tried to catch the fish under the supervision of the leader.
_____ He went ahead and tried to catch it before the leader could interfere.
_____ He tried to catch it while his companions looked on and made comments.
_____ He called over three companions who were nearby and asked them how to catch it.

Item 2.
Koshalan, age 7, was with a group of boys and girls engaged in making shell necklaces at the shore. Each one had to find his or her own shells and put them together. Koshalan had wandered far away from the rest of his companions and didn't notice how late it was. Finally he looked up, saw it was late, missed his companions, and started running back down the beach trying to find the path back through the forest to his village. He didn't find the path till near dark. He was hungry and cold. It took some time for him to reach the village. He hadn't been missed at the evening meal because visiting for meals was the custom and each person could decide on his own who to visit. When he arrived the evening dances were going on.
Guess what Koshalan did.

_____ He went to his own house which was empty, and ate what he could find.
_____ He hunted through the village to see if any old women had stayed in their houses who might give him something to eat.
_____ He went to his big sister, who looked after the food preparation in his house, interrupted her in the ceremonial dance, and told her he was hungry.
_____ He went to a group of his playmates and asked if they had anything to eat with them.

Item 3.
Ombomb, being 17 years old, and having been notified by the leader that he was to be initiated into manhood that evening, sat restlessly by the river's edge. He didn't know what the ceremony would be like. His older brother sometimes made vague references to it as a terrible thing but was forbidden to say anything more as were all who had passed into manhood. So Ombomb sat and worried.
Guess what Ombomb then did.

_____ He went out in his boat and poled vigorously up and down the river to try and make himself feel better.
_____ He hunted up Roma and Siku who also were to go through the ceremony and they talked and guessed about what was going to happen and told each other how they felt.
_____ He went spear fishing with three other boys who were younger and hence were not being initiated this year.
_____ He went to his household aunt who was in the yam garden and talked to her and asked her how bad it was going to be. She told him that she didn't know but that after it was over he would look back at it and it wouldn't seem too bad.

Item 4.
Omblean realized that he was supposed to irritate and oppose his father whenever he got a chance. His mother had been teaching him that for years. But he hadn't been taught what to do in case his father became too angry. His father had seven wives and all who were mothers had taught their sons the same words that would irritate their father. Omblean had irritated his father often by using these words but one day his father became too irritated and angry and he attacked Omblean.
Guess what Omblean did.

_____ He ran to where his half-brothers were gathered and "sought safety in numbers."
_____ He ran away out into the jungle and tried to get away from his father in the dense undergrowth.
_____ He ran to his mother's hut so she would protect him from his father's wrath.
_____ He didn't run away; he tried to fight back.

Item 5.
Kiteni had just endured her first betrothal feast and ceremony and was back in her ancestral "stilt" hut with her paternal uncle and his niece who was her own age. Her mother, father, brothers, and sisters were tabu to her till after her marriage. Today she had seen her future husband for the first time. She dreaded the next two ceremonies, the marriage ceremony, and living with this stranger in a strange distant village.
Guess what Kiteni did.

_____ She told her cousin about her worries as she huddled with her in the back of the hut.
_____ She poured out her fears to her paternal uncle hoping that he would reassure her.
_____ She went to the far end of the hut and sat by herself, all the while trying to force herself to be calm.
_____ She sat close to her cousin but tried to prevent her from guessing that she was troubled.

Item 6.
Dobomugau, while planting taro in his maternal uncle's garden, saw that a pig had strayed into the garden. Its tail was uncut so it might be a wild bush pig. But he strongly suspected that it belonged to a distant village. The pig was a trespasser, meat was scarce, he would have liked to kill it so he could give it to his cross-cousin for the latter and his family to eat. But would it have been wise to do so? Judgment had to be made in terms of all kinds of relationships with the pig's owners. Was a feast pending? Was a betrothal still unsettled? Did some member of his own group depend on the pig's owners for assistance in some ceremonial plan?
Guess what Dobomugau did.

_____ He went to the "big man" in the community, asked what he should do, was told to kill the pig,— and killed it safe in the knowledge that everyone in his community would support this probable "legal piracy."
_____ He got in touch with his "buanyin" or exchange partner who talked him into killing it then and there.
_____ He took it into the bush where he would be unlikely to meet anyone, killed it, skinned it, and then presented it as he had planned.
_____ After making sure that no older male relatives were around, he killed it, skinned it, and then presented it to his cross-cousin.

The Second Form

The following is a guessing test. What I would like you to do is to read the heading and alternatives for an item and then guess which item represents the most likely behavior of the character depicted. Place a 1 at the left of the alternative you guess to be most likely, a 2 at the left of the alternative you guess to be next likely etc., till you have ranked the four alternatives.

Item 1.

Tata had been learning to fish from the reef. He saw a devil fish in a hole in the side of the reef. He wanted to catch it and he had his "come hither stick" with him.
Guess what Tata did.

_____ The leader of the fishing party being near, Tata quietly asked him what to do.
_____ It never occurred to him to ask for advice; he just went ahead and tried to catch it.
_____ He tried to catch it while his companions looked on.
_____ Looking to see if his companions approved of his methods, Tata set about trying to catch the fish.

Item 2.

Koshalan, age 7, was with a group of boys and girls engaged in making shell necklaces at the shore. Each one had to find his or her own shells and put them together. Koshalan had wandered far away from the rest of his companions and didn't notice how late it was. Finally he looked up, saw it was late, missed his companions, and started running back down the beach trying to find the path back through the forest to his village. He didn't find the path till near dark. He was hungry and cold. It took some time for him to reach the village. He hadn't been missed at the evening meal because visiting for meals was the custom and each person could decide on his own who to visit. When he arrived the evening dances were going on.
Guess what Koshalan did.

_____ He went to his own house, which was empty, and ate what he was able to find.
_____ He hunted through the village to see if any old women had stayed in their houses who might give him something to eat.
_____ He searched through the group of women watching the dances looking for his mother who maybe would go back to their house and get him something to eat.
_____ He went to a group of his playmates and asked if they had anything to eat to give him.

Item 3.

Ombomb, being 17 years old, and having been notified by the leader that he was to be initiated into manhood that evening, sat restlessly by the river's edge. He didn't know what the ceremony would be like. His older brother sometimes made vague references to it as a terrible thing but was forbidden to say anything more as were all who had passed into manhood. So Ombomb sat and worried.
Guess what Ombomb then did.

_____ He went out in his boat and poled vigorously up and down the river to try and make himself feel better.
_____ He hunted up Roma and Siku who also were to go through the ceremony; they talked and guessed about what was going to happen and told each other how they felt.
_____ He preferred to handle his problems himself so when a group of his friends called to him, he pretended not to notice them.
_____ He went over to talk to the council of old wise men; he didn't expect that they would tell him what was going to happen but they were wise and experienced and they might say something that would make him feel better.

Item 4.

Omblean realized that he was supposed to irritate and oppose his father whenever he got a chance. His mother had been teaching him that for years. But he hadn't been taught what to do in case his father became too angry. His father had seven wives and all who were mothers had taught their sons the same words that would irritate their father. Omblean had irritated his father often by using these words but one day his father became too irritated and angry and he attacked Omblean.
Guess what Omblean did.

_____ He ran to where his half-brothers were gathered and "sought safety in numbers."
_____ He ran away out into the jungle and tried to get away from his father.
_____ He ran to his mother's hut so she would protect him from his father's wrath.
_____ He ran away out into the jungle but he was strongly tempted to stop and fight back.

Item 5.

Kiteni had just endured her first betrothal feast and ceremony and was back in her ancestral "stilt" hut with her paternal uncle and his niece who was her own age. Her mother, father, brothers, and sisters were tabu to her till after her marriage. Today she had seen her future husband for the first time. She dreaded the next two ceremonies, the marriage ceremony, and living with this stranger in a strange distant village.
Guess what Kiteni did.

_____ She told her cousin about her worries as she huddled with her in the back of the hut.
_____ She poured out her fears to her paternal uncle hoping that he would reassure her.
_____ She went to the far end of the hut, sat alone, and tried to control her emotions and ease her fears by herself.
_____ She sat close to her cousin but tried to prevent her from guessing that she was troubled.

Item 6.

Dobomugau had a problem to solve. All the males in his extended family had to choose an individual sacred bird which would form the motif for all the subsequent carving and ornamenting of their personal possessions. It was now his turn to decide. He had four traditional choices of the means of deciding and there were no regulations forcing him to choose one over the other.
Guess which procedure Dobomugau would be likely to choose.

_____ He could present his problem to the wise elders of his extended family. He would then accept the decision the elders themselves would make.
_____ He could have a meeting with all the male relatives of his own age group. At the meeting, after a discussion in which he could present his preferences, he would accept the decision which the group (including himself) would make.
_____ He could go off by himself and after an extended period of thinking would come back and report his decision.
_____ He could talk informally with some others of his age group and hear their suggestions. He then would go ahead and make his own decision.

TABLE 13

EXPERTS' RANKING OF ALTERNATIVES OF THE SECOND FORM OF THE DEPENDENCE-INDEPENDENCE MEASURE

Item	Expected* Ranking	Experts																		
		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
1.	1	1	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	3	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	4	3	4	4	4	1	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	3	3	3	3	2	3	4	3	2	3	2	3	3	2	3	2	2	2	2
	3	2	2	2	2	3	2	3	2	3	2	3	2	2	3	2	3	3	3	3
	4	4	4	4	4	4	4	2	4	4	4	4	4	4	4	4	4	4	4	4
3.	1	1	1	1	2	1	2	1	2	1	2	1	2	2	2	1	1	1	2	1
	2	2	2	2	1	3	1	2	1	2	1	2	1	1	1	2	3	2	1	2
	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	4	3	3	3
	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2	4	4	4
4.	1	1	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	1	2	2	2	1	2	2	2	2	2	3	2	2
	3	3	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	2	3	3
	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4
5.	1	1	1	1	1	4	1	1	1	1	1	1	1	1	1	1	3	1	1	1
	2	2	2	2	2	1	2	3	2	2	2	2	2	2	2	2	1	2	2	2
	3	3	3	3	3	2	3	2	3	3	3	3	3	3	3	3	2	3	3	3
	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4
6.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

*Rank of 1 to indicate extreme independence and rank of 4 to indicate extreme dependence.

The Final Form

The following is a guessing test. You are to read the heading and alternatives for each item and then guess which alternative represents the most likely behavior of the person depicted. Place a 1 at the left of the alternative you guess to be most likely, a 2 at the left of the alternative you guess to be next likely, a 3 at the left of the alternative which you guess to be somewhat unlikely, and a 4 at the left of the alternative which you guess to be most unlikely.

Try to spend no more than one minute per item: trust your first impressions.

Item 1.

Tata had been learning to fish from the reef. He saw a devil fish in a hole in the side of the reef. He wanted to catch it and he had his "come hither stick" with him.
Guess what Tata did.

Dep The leader of the fishing party being near, Tata quietly asked him what to do.
Indep It never occurred to him to ask for advice; he just went ahead and tried to catch it.
_____ He tried to catch it but he didn't appreciate his companions commenting even though they did it quietly.
_____ Looking to see if his companions approved of his methods, Tata set about trying to catch the fish.

Item 2.

Koshalan, age 7, was with a group of boys and girls engaged in making shell necklaces at the shore. Each one had to find his or her own shells and put them together. Koshalan had wandered far away from the rest of his companions and didn't notice how late it was. Finally he looked up, saw it was late, missed his companions, and started running back down the beach trying to find the path back through the forest to his village. He didn't find the path till near dark. He was hungry and cold. It took some time for him to reach the village. He hadn't been missed at the evening meal because visiting for meals was the custom and each person could decide on his own who to visit. When he arrived the evening dances were going on.
Guess what Koshalan did.

Indep He went to his own house, which was empty, and ate what he was able to find.
_____ He saw the group he had been with at the shore but he didn't feel that he wanted them to help him.
Dep He searched through the group of women watching the dances looking for his mother who maybe would go back to their house and get him something to eat.
_____ He saw the group he had been with at the shore and asked them if they knew where there was something to eat.

Item 3.

Ombomb, being 17 years old, and having been notified by the leader that he was to be initiated into manhood that evening, sat restlessly by the river's edge. He didn't know what the ceremony would be like. His older brother sometimes made vague references to it as a terrible thing but was forbidden to say anything more as were all who had passed into manhood. So Ombomb sat and worried.
Guess what Ombomb then did.

Indep He went out in his boat to get away from everyone, and poled vigorously up and down the river to try and make himself feel better.

_____ He hunted up Roma and Siku who also were to go through the ceremony; they talked and guessed about what was going to happen and told each other how they felt.

_____ He preferred to handle his problems by himself so when a group of his friends called to him, he answered them with reluctance.

Dep He went over to talk to the council of old wise men; he didn't expect that they would tell him what was going to happen but they were wise and experienced and they might say something that would make him feel better.

Item 4.

Omblean realized that he was supposed to irritate and oppose his father whenever he got a chance. His mother had been teaching him that for years. But he hadn't been taught what to do in case his father became too angry. His father had seven wives and all who were mothers had taught their sons the same words that would irritate their father. Omblean had irritated his father often by using these words but one day his father became too irritated and angry and he attacked Omblean.
Guess what Omblean did.

_____ He ran to where his half-brothers were gathered looking for help and protection from them.

_____ He ran off through the village, past where his half-brothers were gathered, and dodged among the huts waiting for his father to "cool off."

Dep He ran to his mother's hut so she would protect him from his father's wrath.

Indep He ran straight out into the jungle, heading for the densest undergrowth where he knew his father would have a hard time following and would probably soon "cool off."

Item 5.

Kiteni had just endured her first betrothal feast and ceremony and was back in her ancestral "stilt" hut with her paternal uncle and his two daughters who were about her own age. Her mother, father, brothers, and sisters were tabu to her till after her marriage. Today she had seen her future husband for the first time. She dreaded the next two ceremonies, the marriage ceremony, and living with this stranger in a strange distant village.
Guess what Kiteni did.

_____ She told her cousins about her worries as she huddled with them in the back of the hut.
Dep She poured out her fears to her paternal uncle hoping that he would reassure her.
Indep She went to the far end of the hut, sat alone, and tried to control her emotions and ease her fears by herself.
_____ She sat close to her cousins but tried to prevent them from guessing that she was troubled.

Item 6.

Dobomugau had a problem to solve. All the males in his extended family had to choose an individual sacred bird which would form the motif for all the subsequent carving and ornamenting of their personal possessions. It was now his turn to decide. He had four traditional choices of the means of deciding and there were no regulations forcing him to choose one over the other.
Guess which procedure Dobomugau would be likely to choose.

Dep He could present his problem to the wise elders of his extended family. He would then accept the decision the elders themselves would make.
_____ He could have a meeting with all the male relatives of his own age group. At the meeting, after a discussion in which he could present his preferences, he would accept the decision which the group (including himself) would make.
Indep He could go off by himself and after an extended period of thinking would come back and report his decision.
_____ He could talk informally with some others of his age group and hear their suggestions. He then would go ahead and make his own decision.

Scoring of the Dependence-independence Measure

Responses to the measure in terms of the traditional authority alternatives were tabulated in the following manner. The example below indicates the scoring for a particular individual.

dependence		Independence
11	(1-4)	
	(2-4)	
	(1-3)	
	(1-2)	1
	(2-3)	11
	(3-4)	1

"direction only" scoring -- indep. 2 (indep. 4 minus dep. 2)

"direction and extent" scoring -- dep. 2 (dep. 6 minus indep. 4)

In responses to the measure, the subject indicates two things: (a) a directional preference and (b) an intensity of preference.

"Direction only" scoring.- This method of scoring involves only the first kind of information. If the dependent alternative in one item is considered to be more likely, a score of dep. 1 is given for this item. If the independent alternative in another item is considered to be more likely, a score of indep. 1 is given for that item. The total score is the net result of the scores for all six items. These scores could range from dep. 6 to indep. 6.

"Direction and extent" scoring.- This method considers the rank discrepancy between the dependent alternative and the independent alternative for each item. Since there are four alternatives, the two traditional authority alternatives can be removed from each other by one to three rank positions. For this scoring, the rank discrepancies for dependence and independence are summed; then the net result is computed. The final score gets its directional quality from the

characteristic (dependence or independence) which has the greater number of rank differences. Scores could range from dep. 18 to indep. 18.

The Eleven Items of the F Scale

The following statements cover many different points of view and opinions. The best answer to each statement below is your personal opinion. You may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others and perhaps uncertain about others. Whether you agree or disagree with any statement, you can be sure that many other people feel the same way you do.

Mark each statement in the space at the left according to the following code.

+ 1: I AGREE A LITTLE	- 1: I DISAGREE A LITTLE
+ 2: I AGREE PRETTY MUCH	- 2: I DISAGREE PRETTY MUCH
+ 3: I AGREE VERY MUCH	- 3: I DISAGREE VERY MUCH

Don't deliberate too long: trust your first impressions.

_____ Obedience and respect for authority are the most important virtues children should learn.

_____ An insult to our honor should always be punished.

_____ Sex crimes, such as rape and attacks on children, deserve more than mere imprisonment; such criminals ought to be publicly whipped, or worse.

_____ Every person should have complete faith in some supernatural power whose decisions he obeys without question.

_____ If people would talk less and work more, everybody would be better off.

_____ Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.

_____ Homosexuals are hardly better than criminals and ought to be severely punished.

_____ No sane, normal, decent person could ever think of hurting a close friend or relative.

_____ What the youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country.

_____ There is hardly anything lower than a person who does not feel a great love, gratitude, and respect for his parents.

_____ Most of our social problems would be solved if we could somehow get rid of the immoral, crooked, and feebleminded people.

APPENDIX I

ADMINISTRATION OF THE NEED ACHIEVEMENT MEASURE

Instructions for Picture Interpretations

You are going to see a series of pictures, and your task is to tell a story that is suggested to you by each picture. Try to imagine what is going on in each picture. Then tell what the situation is, what led up to the situation, what the people are thinking and feeling, and what they will do.

In other words, write as complete a story as you can -- a story with plot and characters.

You will have 20 seconds to look at a picture and then four minutes to write your story about it. Write your first impressions and work rapidly. I will keep time and tell you when it is time to finish your story and to get ready for the next picture.

There are no right or wrong stories or kinds of stories, so you may feel free to write whatever story is suggested to you when you look at a picture. Spelling, punctuation, and grammar are not important. What is important is to write out as fully and as quickly as possible the story that comes into your mind as you imagine what is going on in each picture.

Notice that there is one sheet for writing each story. If you need more space for writing any story, use the reverse side of the sheet.

For each story, when three and one half minutes have expired, I will say "thirty seconds to go."

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