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EXPECTATIONS OF SUCCESS IN CHANCE AND SKILL  
TASKS AS AFFECTED BY SOCIAL CLASS

By

Daniel L. Schultz

B.A., University of Wisconsin, 1971

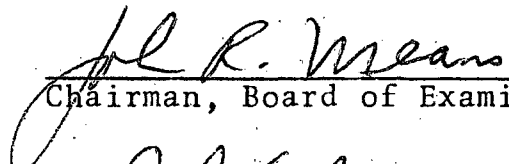
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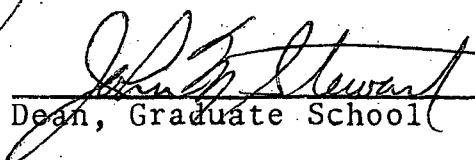
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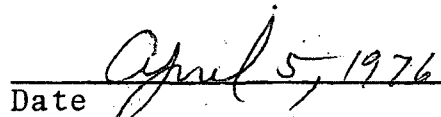
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Expectations of Success in Chance and Skill Tasks as Affected by Social Class (100 pp.)

Director: John R. Means LAM

The present study was undertaken to determine whether social class membership has the same effect on expectations of success in chance and skill tasks as does internality and externality as measured by the Rotter I-E Scale. Low social class Ss were predicted to have higher expectations of success in chance conditions and to experience more atypical shifts in expectation than high social class Ss. High social class Ss were predicted to expect better performances in skill conditions.

One hundred and seventy-one introductory psychology students at the University of Montana were administered the Rotter I-E Scale and the Hollingshead Two Factor Index of Social Position. Their scores on these two instruments were used to categorize them into four groups including High Social Class Internals, High Social Class Externals, Low Social Class Internals, and Low Social Class Externals. Forty-eight of these Ss were recruited to play a dice game. Instructional set was manipulated for this task such that Ss were told that success in the game depended either on chance or skill or were given no such set. Prior to the last four trials on this task, Ss were asked to predict their score on that particular trial.

In this sample social class was not found to be related to locus of control as it had been in previous studies. Low Social Class Ss expected their best performance in skill, rather than chance, tasks. Low Social Class Internals and High Social Class Externals were found to display atypical shifts in expectation to a greater degree than Low Social Class Externals and High Social Class Internals. Low Social Class Ss did appear to be more responsive to subtle manipulation than High Social Class Ss.

The Personal Control Scale functioned more efficiently in identifying internals and externals differing in expectations in chance and skill tasks than the I-E Scale.

A relationship was found between locus of control and reported success in mathematics. Externals reported greater success in mathematics classes than internals.

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## CHAPTER I

### INTRODUCTION

#### Introduction

The ability of an individual to gain reinforcement for his actions may be differentially affected by his ability to achieve goals or by the lack of reinforcers in his environment. If this statement is true, individuals might be expected to develop different expectations about their ability to gain reinforcement as a product of their actions. Rotter (1966) claimed that because of the pattern of reinforcement an individual experiences, he develops a generalized expectancy regarding the nature of the causal relationship between his behavior and its consequences. One might expect a variety of factors to be involved in determining this pattern of reinforcement. An individual's ability, for example, can easily be seen to have an effect on the likelihood of his success in tasks and in his gaining reinforcement. If one has a certain amount of ability, such as intelligence, then one is likely to achieve success and its attendant reinforcement and is likely to expect that such reinforcement and success will be a consequence of his actions.

An individual's standing in society might also be a factor in determining his expectancy of reinforcement. Several factors could cause a person of lower social standing to expect less reinforcement for his actions than would a person of higher social standing. Aronfried (1968) explained one of these aspects:

Any dimension of status in a social hierarchy can be partially translated into orientation towards the environment. People who hold higher positions in the hierarchy have greater power to determine and evaluate their own actions, and also to act upon their external environment. People in positions of lower status must be relatively more responsive to externally controlled determinants and consequences of their actions. These differences in social experience should produce corresponding differences of orientation in the control of many areas of conduct. (Aronfried, 1968)

Aronfried suggested that middle-class people, or those of intermediate social economic status, have relatively more opportunities to realize their aspirations through their own modification of their external circumstances than lower-class people. Because the person of a middle-class social status is more likely to meet with success as a result of his actions, and is more likely to be reinforced, it is more probable that he will hold a greater expectancy for reinforcement than the person of lower status.

Coleman et al. (1966) found that children of minority groups, and especially black children, felt somewhat less control of their environment than did white children. They

found that minority group children who have the lowest level of achievement also exhibit less of a sense of control of the environment. The special importance of a sense of control of the environment for achievement of minority group children and perhaps for disadvantaged whites as well suggests a different set of predispositional factors, such as those discussed in this paper, operating to create low or high achievement for children from disadvantaged groups than that operating for children from advantaged groups. If locus of control does have an effect on achievement levels, then modification of locus of control must be considered if the levels of achievement of the poor and of minority groups are to be raised.

Coleman et al. (1966) suggested these distinctions between advantaged and disadvantaged children which would lead to this differential in their expectation of control or reinforcement. The advantaged child has had all of his needs satisfied, has lived in a responsive environment, and can assume that the environment will continue to be responsive if only he acts appropriately. The disadvantaged child has had few needs satisfied, has lived in an unresponsive environment both within the family constellation and outside of it, and cannot assume that the environment will respond according to his actions.

### Locus of Control: The I-E Scale

The expectation of an individual that the environment will be responsive to his actions and that he will be reinforced for them was labeled by Rotter (1966) as an internal orientation. The converse expectation of the individual who does not see the environment as responsive to his actions and sees external reinforcements coming to him because of chance events was labeled by Rotter as an external orientation.

The first scale developed to measure an individual's tendency towards internality of externality, or locus of control, was devised by Phares (1957). Since that time the scale has been refined somewhat and research has been done on the I-E Scale to determine such test characteristics as its reliability and validity. (See review in appendix 1). A variety of I-E scales exist. The forced-choice 29-item scale (Rotter, 1966) was the instrument used in this study. The major reason for its use here was that the preponderance of work done with locus of control has used this scale as the primary measure. Several studies on its reliability and validity have also been done and consistent measures of these parameters have been established. Because of this wide range of use and because of its reliability, freedom from social desirability, and general validity have all been consistently measured, it seemed that it was a sound measure to use in this study.

The I-E Scale has been used with varying degrees of success to predict behaviors of different types of subject groups in different situations in terms of personality, anxiety, and attempts to control the environment. Since this study focused on the expectations of subjects in skill versus chance situations as a function of their social class, only topics pertaining to this area are discussed.

#### Performance in Chance Versus Skill Conditions and Internal-External Control

When placed in situations of chance as opposed to situations of skill, subjects differ in several ways. When placed in a situation where success is due to chance, subjects tend to see neither positive nor negative consequences as due to their actions. Subjects make the connection between success in the task and their performance in a skill-oriented task (Rotter, 1966). There is a parallel between the performances seen in chance situations and those expectancies of those subjects we have labeled as externals and the performances seen in skill situations and the expectations of internals. In the first study done with an I-E Scale, Phares (1957) found externals had a tendency to perform exactly as do subjects, in general, when placed in a chance situation. James (1957) corroborated Phares' findings. Externals, in his study, had smaller increments and decrements in performance following success and failure, generalized less from one task to

another, and recovered less following the period of extinction.

Joe (1971) cited several studies that attempted to show that internals perform better than externals under conditions where skill controls the outcome, while externals perform better than internals in chance-determined conditions (Julian and Katz, 1968; Lefcourt, Lewis, and Silverman, 1968; Rotter and Mulry, 1965). Rotter and Mulry (1965) suggested that internals tended to value reinforcements that were contingent on skill more than chance and that externals behaved in the opposite manner.

Julian, Lichtman, and Ryckman (1968) hypothesized that the internal-external control dimension determines differential preference for conditions that appear to provide maximum control of task outcomes. In two separate studies reported jointly, Julian et al. examined subject behavior on a dart-throwing task which was set up in both "chance" and "skill" controlled conditions. In the first condition, the subject was allowed to maximize his chances for success at dart throwing by choosing a preferred distance from which to throw his darts. At the closer distance chosen, the subject could only use five darts while at the farther distance he could use seven darts. Julian et al. found that internals and externals, as measured on Rotter's I-E Scale (1966), differed in their preference for distance from the target.



Internals would choose the closer positions significantly more often than externals and increased the probability of their success.

In the second study, Julian et al. attempted to examine differences of individuals in a chance task created by blindfolding the subjects. Julian predicted that this interference with the control of his performance would be more frustrating to an internal subject than to an external one. In this condition, judges assessed the emotional reactions exhibited by the subjects. Examiner response to performance varied to provide positive or negative feedback non-contingent upon task performance. In direct contradiction of the predictions, externals appeared more distraught under this condition. Julian et al. explained this finding as follows:

Situations where outcomes are clearly determined by the skilled performance of the subject are presumably of greater concern to the internally oriented person, whereas comparable situations where performance is seen as unrelated to outcomes are of greater concern to the externally oriented person.  
(Julian, Lichtman, and Ryckman; 1968)

Thus, when internals feel they have no investments in the success of their attempts, such as in a chance task, they do not feel as though they have failed if they do poorly (Julian et al., 1968). Externals, however, may have the same emotional investment in chance and skill tasks and may have difficulty in discriminating between their failures in both situations. Thus, their disappointment does not diminish

upon failure in a chance situation over its levels in a skill task.

Du Cette and Wolk (1972) found that external subjects, as opposed to internal subjects, were characterized by a preference for extreme risks, low persistence in tasks, and atypical shifts in levels of aspiration. Citing studies by Liverant and Scodel (1966), Julian and Katz (1968), and Strickland, Lewicki, and Katz (1966) in which internals were found to prefer safe or intermediate probability bets and externals preferred "long-shot" wagers, Du Cette and Wolk proposed that externals preferred high risks over low ones. Others (Battle and Rotter, 1963; Rotter and Mulry, 1965; and Feather, 1969) found that atypical shifts in levels of aspirations across a wide variety of tasks and experiences was more common in externals than internals. Du Cette and Wolk defined an atypical shift to consist of either a rise in aspiration after failure or a lowering in aspiration after success. In their study with ninth-grade girls, Du Cette and Wolk attempted to measure these behaviors in their performance against their measured locus of control. They found the external girls to be more extreme in all behaviors measured and concluded that external subjects are more extreme in their behavior in general. Du Cette and Wolk, in their discussion, theorized that:

. . . one outcome would seem to be that such a [external] person will fail in the long run not only to develop a veridical perception

of his skills, but also to develop critical skills themselves. By systematically eliminating feedback from the environment, such a person is, in essence, demonstrating a tendency to avoid situations, where he can ever change his behavior. An external subject, by his choice of extreme options, is guaranteeing the fact that he will receive extremely impoverished and biased feedback about himself. (Du Cette and Wolk, 1972)

### Risk-Taking and Locus of Control

Liverant and Scodel (1960) maintained that internals would be more cautious and conservative than externals in risk-taking situations. In their study, internals chose significantly more intermediate bets than externals in a dice-throwing task and preferred choices that led to a high probability of success. Externals preferred choices with low probabilities of success.

Baron (1968) found that scores of subjects on the I-E Scale were significantly correlated to their performance on the Kogan-Wallach Choice Dilemma Problems (Wallach and Kogan, 1959). Internals tended to be more conservative in behavior on this risk-taking measure. Du Cette and Wolk (1972) also found that external subjects were more likely to take extreme risks than internal subjects.

MacDonald (1970) explored the relationship between the propensity to use birth control of college women and their score on the I-E Scale. Following the theory of the I-E construct, MacDonald suggested that women who were external

in orientation would be less likely to attempt to control their pregnancies since they lacked belief in personal control in general. Basically, the choice of external women not to use birth control might be considered one of high risk since, in fact, the other option to use birth control is a much lower risk one. MacDonald found, as predicted, that there was a significant association between birth control use and locus control. External women were more likely to choose the high-risk alternative of not using preventatives.

Williams (1973) studied smoking behavior in ninth graders as it related to locus control and risk-taking. He found that, for girls, non-smoking was significantly associated with internality. He also found that non-smokers tended to score higher on the Harm Avoidance Scale of the Personality Research Form (Jackson, 1967). If one follows the association, one might expect internals to score higher on the Harm Avoidance Scale as well.

Lichtenstein and Keutzer (1967) found no relationship between success in stopping smoking and score on the I-E Scale in a smoking therapy study. They did, however, find significant correlations between locus of control and several measures of risk-taking. Externals, more than internals, predicted that their death would occur as an act of chance of fate such as being the result of an accident.

### Expectations of Success and Locus of Control

It would follow logically from the studies cited above (Under Performance in Chance Versus Skill Conditions and Locus of Control) that external subjects would have higher expectations of success in a task in a chance condition than they would in a skill condition. Because they see reinforcement that they obtain as non-contingent upon their actions, when they perceive a situation as being solely dependent on their skill, one would predict that they would expect failure rather than chance reinforcement. However, when they perceive a situation to be one in which reinforcement is due to chance events alone and is not contingent upon their performance, they are likely to feel that they are on much more even footing. They feel more likely to succeed because they know there is no skill contingency involved and they are being reinforced in a more familiar and comfortable pattern that is decided by chance or fate.

Battle and Rotter (1963) engaged children in a line-matching task. They found that internals in this "skill" task were more certain of success than were externals. Set on a 50 percent reinforcement schedule, internals were also more likely to be affected by the reinforcement. Following the I-E Theory, this tendency to react more sensitively to reinforcement might have affected their expectancy of success.

Social Class: Social Class Differences  
in Internal-External Control

A number of studies have explored the relationship between social class and the I-E Scale. The general finding of these studies has been that subjects of lower socioeconomic standing are more external than those of higher socioeconomic standing.

Battle and Rotter (1963), using a projective test to determine the locus of control, studied the relationship between internal-external orientation and demographic variables such as age, sex, social class, and ethnic group membership. They used sixth- and eighth-grade children who were selected on the basis of these variables. Setting I-E score as the dependent variable, Battle and Rotter found significant effects for the level of social class and for the interaction of social class and ethnic group. They found that middle-class white children were measured as the most internal on their scale and that lower-class blacks were the most external, with the middle-class blacks and lower-class whites scoring in between these extremes. Middle-class whites were significantly more internal than lower-class blacks; middle-class blacks also were significantly more internal than lower-class blacks. They found no significant differences between middle- and lower-class whites. Battle and Rotter interpreted their results to suggest that "one important antecedent of a generalized expectancy that one can control

his own destiny is the perception of opportunity to obtain the material rewards offered in a culture."

In a national survey, Coleman et al. (1966) found that blacks and other minorities assumed to be disadvantaged showed a much lower sense of control of their environment than did whites. Coleman used a crude I-E test of three yes-no questions:

1. People like me don't have much of a chance to be successful in life.
2. Good luck is more important than hard work for success.
3. Every time I try to get ahead, something or somebody stops me.

Generally, children of minority groups, and especially blacks, felt less control over their environment than did white children.

Scott and Phelan (1969) matched three groups of hard-core unemployed males for age, socioeconomic status, and scholastic aptitude. One group was white, one was black, and one was Mexican-American. They compared these three groups with an additional control group of white college males. The white unemployed group did not differ from the college whites. Both the blacks and Mexican-Americans were significantly more external than the whites.

Milgram, Shore, Riedel, and Malasky (1970) compared six-year-old disadvantaged children in terms of locus of control but found that disadvantaged children in general

were more externally oriented than advantaged children. Milgram et al. concluded that this externality of disadvantaged children was due to their social standing and not to their race. One might suspect that because the children were six years old, the differential due to social economic status had already been established but the differential in locus of control due to race found in the previously cited studies had not yet begun to take effect.

Gable and Minton (1971) explored the effects of social class and race upon the locus of control of junior high school students. Using Warner's (1949) measure of social class and the Battle projective test of locus of control (Battle and Rotter, 1963), they found that high school students of lower-class standing were more external than middle-class students. Because the two samples compared were from different schools of different social class population and of different ethnic groups, it is not clear whether the difference in locus of control found was due to economic or ethnic differences.

#### Internal-External Behaviors: Their Relation to Social Class

Since social economic standing and the I-E Scale have been found to be strongly related, one would expect that individuals differ in certain ways according to their social standing in the same way that they do according to their



locus of control. Several studies have been done to relate social class directly to the kinds of behaviors discussed above.

Milgram et al. (1970) used a measure of Level of Aspiration (LOA) to determine aspiration levels of disadvantaged versus advantaged children. They used two conditions of reinforcement, one in which subjects would be rewarded only when they correctly predicted the highest level which they subsequently obtained (Accuracy Incentive) and the second in which subjects were merely told they would be rewarded for their performance (Non-Accuracy Incentive).

Milgram et al. found that advantaged children were accurate in predicting their performance in the Accuracy Incentive condition but inaccurate in the Non-Accuracy Incentive condition. Disadvantaged children were generally inaccurate in their levels of aspiration in both conditions. In general, disadvantaged children generally set unrealistically high aspiration levels in the task. Milgram et al. explained this finding:

- 1) . . . an absence of successful problem solving experience predisposes the individual to attach more importance to the vicarious pleasure of verbalizing high goals than to the importance of being correct in one's verbalizations.
- 2) . . . inadequate differentiation between wishes and expectations permits the former to prevail over or substitute for the latter. (Milgram et al., 1970)

As noted earlier, Milgram found that disadvantaged children were found to be externally oriented when compared to more advantaged children. One finds that these three characteristics cluster together: externality, disadvantage, and unrealistic aspirations. These are opposed to another group of characteristics: internality, advantage, and realistic aspirations. Because the task involved was one of skill (copying, assembling, counting, and immediate memory), one might expect the more external poor child to feel unable to gain success and to set high unrealistic aspirations because he is unable to determine his ability on such a task that requires a knowledge of one's own skill. Because reinforcement for display of this skill has been sporadic in the past (to follow I-E theory), the disadvantaged child has not learned the limits of his capabilities in skill tasks; he only knows that reinforcement comes as a result of chance. Thus, not knowing the realistic limits of his possible scores, he sets an unrealistically high estimation of it.

Tadeschi and Levy (1971) hypothesized that lower-class blacks would be more responsive to social reinforcement in a skill task than in a chance task while the middle-class whites would be more responsive to social reinforcement in a chance task than in a skill task situation. They used, as a skill situation, a prisoner's dilemma task with the rules posted. In the chance condition they presented the

same task with no rules posted; social reinforcement was provided for one of the two possible solutions. Tadeschi and Levy found their hypothesis to be confirmed. They suggested that the white boys in the chance condition would view the task as a soluble one but could not discover the rules that could be used for winning except for the social reinforcement to which they attended. The blacks accepted the task as a gambling situation and did not attempt to find a strategic solution for it; social reinforcement was irrelevant for the task situation. In the skill condition, white middle-class subjects had all of the information they needed to solve the problem they encountered and being confident of their ability to solve problems in general, ignored any social feedback from the examiner. Black boys, when faced with a skill situation, had a lack of confidence, reasoned Tadeschi and Levy, and attended to the social reinforcement cues of the examiner. One might expect external lower-class subjects to falter in their expectations of their performance on a skill task given no cues whatsoever on the task except that it was one of skill while a middle-class subject would falter in a task of chance that he felt unable to solve because success in it was due to chance.

Cecil (1972) examined the effect upon risk-taking of several factors including sex of subject, occupation of head of house, family income, and class standing of the subject.

Using the Kogan-Wallach Choice Dilemmas Questionnaire (Wallach and Kogan, 1959), Cecil found that subjects from families with an annual income of less than \$5,000 were more willing to take risks than subjects from families with higher incomes. Interestingly, Cecil also found that students from families with incomes of over \$35,000 were more willing to take risks than students from families of incomes of \$20,000 to \$35,000. One might expect the lower-income subject to take more risks and be more external because of a lack of feedback from the environment about the appropriateness of his actions. The wealthy subject may be flooded with such feedback to such an extent that he cannot differentiate between actions that elicit reinforcement and actions that do not. Thus, he is raised in a manner in which he becomes external because he cannot determine whether his success is due to the appropriateness of his actions of chance alone.

#### Hypotheses

Milgram, Shore, Riedel, and Malasky (1970) and Tadeschi and Levy (1971) found social class levels to be related to the reaction of subjects in chance versus skill conditions. Milgram et al. found that social class was related to the reaction of subjects in determining how successful they would be in chance versus skill tasks. They found no interaction between the characteristics of the situation and the social class level of the subjects in their aspiration

accuracies; lower-class children had unrealistic expectations in both conditions. Tadeschi and Levy (1971) found that class level and task conditions interacted in determining how responsive subjects would be to social reinforcement. Julian and Katz (1968), Lefcourt, Lewis, and Silverman (1968), and Rotter and Mulry (1965) all found that internals perform better than externals in skill-controlled tasks or prefer these situations while externals perform better than internals in chance-controlled conditions or have preference for these conditions. No similar study has been done to specifically relate the general direction of the expectancies of subjects of their success in chance versus skill situations to their social class such that it was predicted that people of lower-class levels would expect to do better in chance situations and people of middle-class levels would expect to do better in skill conditions. This prediction is in the same direction as the prediction made for subjects that have been differentiated on the I-E Scale. The above prediction was made in this study. The implication of such a prediction would be that lower-class people invest themselves in chance options rather than skill options as they feel safer relying on factors of luck alone. The person of higher social class levels has been reinforced for his skill and will invest in skill options. Thus, the lower-class person is expected to perpetuate his external expect-

tancies of failure in skill conditions and his failure itself by engaging in risky options as opposed to those based on concrete skills.

Thus, the following hypotheses were proposed:

- 1) Subjects of lower-class levels were predicted to have higher expectations of success in tasks perceived as chance determined than they will in tasks perceived as skill determined.
- 2) Subjects of middle and upper social class levels were predicted to have higher expectations of success in tasks perceived as skill determined than they will in tasks perceived as chance determined.
- 3) It was hypothesized that there would be an interaction between social class levels and conditions of chance versus skill in the expectation of subjects of their success in these tasks.
- 4) Du Cette and Wolk (1972), Battle and Rotter (1963), Rotter and Mulry (1965), and Feather (1969) found that externals exhibited atypical shifts in levels of aspiration in a variety of tasks. In concordance with these findings, it was hypothesized that the expectations of externals would again exhibit more atypical shifts in expectation than internals.
- 5) Since it was expected that people of lower social

class are similar to externals it was hypothesized that they would also exhibit atypical shifts in expectations.

- 6) Phares (1957) and James (1957) found that subjects in general experience atypical shifts in chance situations. It was expected that this relationship would be found in this study. Subjects, in general, were predicted to exhibit atypical shifts in expectation in chance conditions.

## CHAPTER II

### METHODS

#### Subjects

One hundred and seventy-six male students in the Introductory Psychology class at the University of Montana were recruited and were given a questionnaire consisting of the Hollingshead (1957) Two Factor Index of Social Position and the I-E Scale (Rotter, 1966). (See "Materials" section of this chapter.) Twenty-five questionnaires were thrown out because of incompletions, leaving a total of 151 forms. On the basis of their classification on the above two measures, forty-eight Ss were recruited from the initial subject pool (see "Design and Procedures" in this chapter).

Males were used in this study because past evidence (Cardi, 1962; Crandall et al., 1962; Joe, 1971; Feather, 1967) has demonstrated a difference in locus control between the sexes. To avoid confounding by this difference, only males were used as subjects.

#### Apparatus

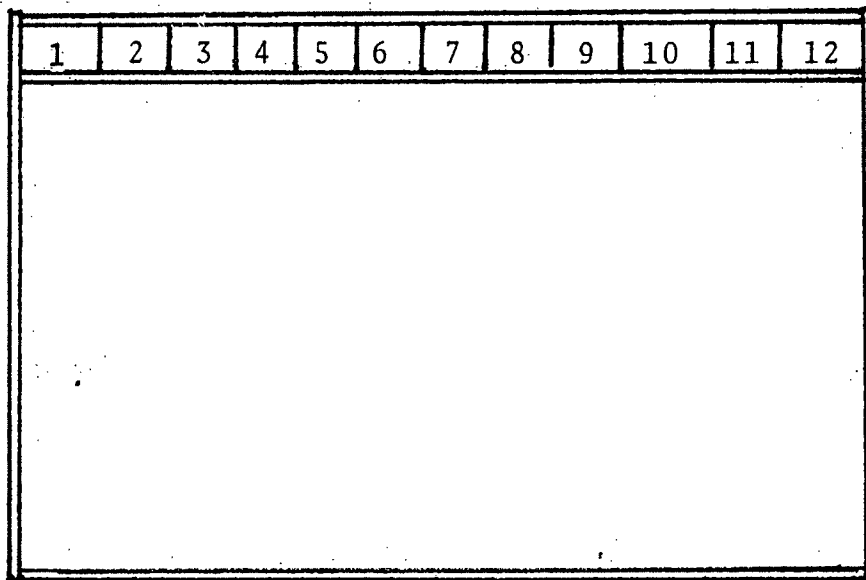
A game was used that consisted of a game board and two



dice. On one end of the game board were eleven blocks which were rectangular in shape. On one side of each block was a number; the other sides were blank. The numbers ranged from one to eleven in ascending order from the left to the right end of the board (see diagram 1). The use of this game is described in the "Design and Procedure" section.

DIAGRAM 1

Game Board



Materials

Questionnaire booklets were compiled containing questions pertaining to social class, the I-E Scale, and ability in mathematics (see appendices). Questionnaires were numbered such that each S was identified by a separate number in order to maintain confidentiality. The performance of

each S used in the task phase of the study was recorded on a separate record sheet.

### Design and Procedure

A 2x2x3 repeated-measures design was used. Data from the second through the fifth trials of each S were examined. Dependent variables included time per trial, performance on each trial, and the stated expectation of Ss of their success in each of the trials. Main effects examined included Social Class, Locus of Control, and Instructional Set. Four Ss were placed in each of the twelve cells; a total of forty-eight Ss were used (see table 1).

Initially, 176 Ss were administered the questionnaire described above. As mentioned above, twenty-five forms were discarded. Ss were then divided according to their social class and locus of control scores. Hollingshead data were graded separately by two independent raters to determine the reliability of this measure. Ss receiving a Hollingshead Social Class Level of I, II, or III were placed in the High Social Class group. Ss receiving an I-E Scale score of twelve points and over were considered external; those receiving under twelve points were considered internal. From the initial pool of 151 eligible Ss, forty-eight were recruited so that there were twelve Ss in each of the following groups:

TABLE 1

## REPEATED MEASURES DESIGN

SI-High = High Social Index  
 SI-Low = Low Social Index  
 I = Internal  
 E = External  
 T = Trial  
 Set. = Instructional Set  
 (Skill/Chance/None)

(Four Ss in a cell)

		T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>	T <sub>4</sub>
Set 1	SI High- I				
	SI High- E				
	SI Low - I				
	SI Low - E				
Set 2	SI High- I				
	SI High- E				
	SI Low - I				
	SI Low - E				
Set 3	SI High- I				
	SI High- E				
	SI Low - I				
	SI Low - E				

High Social Class - Internal  
High Social Class - External  
Low Social Class - Internal  
Low Social Class - External

Four Ss from each of these four groups were randomly assigned to each of the three instructional sets. To assist in sign-up procedures and to ensure that an equal number of Ss signed up from each of the four groups, the following procedure was used: Lists of subject identification numbers for each of the four groups were placed on the sign-up table with an adjoining recruitment sheet. Ss were requested to enlist for the study on the appropriate sheet. Little difficulty was experienced with this procedure.

In the experimental task, Ss were asked to play a game consisting of dice and game board. Ss rolled two dice and then turned down permutations of the blocks on the game board such that the numbers on the blocks added up to the number of the roll. A S would continue to roll the dice until unable to turn down a combination of blocks that added up to the total of the roll (see appendix 5, Instructional Sets). Ss played the game five times. Before each of the last four games, they were asked to predict how many points would be remaining on the board at the end of that particular game. No reinforcement was given for any response or statement of expectation.

Ss were administered one of three instruction sets implying one of these messages (appendix 5):

- 1) This is a game of chance.
- 2) This is a game of skill.
- 3) Neither message implied.

After completion of the study, letters were sent to all of the males in the Introductory Psychology class explaining the purposes of the experiment and its results (see appendix 7).

#### Instructional Sets: Pilot Work

To assess the creditibility of the instructional sets, six Ss were informally administered the experimental task with three Ss assigned to the Chance and the Skill Instructional Set conditions. After completion of the experimental task, Ss were asked whether they had a plan of attack and to relate it to E.

#### Personal Control and Control Ideology

In a post hoc analysis, questionnaires were graded along the dimensions of Personal Control and Control Ideology. Joe (1974) identified four items from each scale which were common with the Rotter (1966) I-E Scale. Product moment correlations with other measures were calculated. A 2x3 repeated-measures analysis of variance with one factor as either Personal Control or Control Ideology and the other as Instructional Set was used to examine the data. Three Ss were assigned to each cell in the Personal Control Ideology.

by Instructional Set design; five Ss were assigned to each cell in the Control Ideology by Instructional Set matrix. Ss were randomly chosen from these Ss who had appropriate characteristics on either of the two dimensions and had been administered the proper instructional set for the relative cell.

## CHAPTER III

### RESULTS

#### Pilot Study

Adequacy of the instructional sets was assessed by administering them to six Ss along with the experimental task and asking Ss about their strategies after they had finished. A point bi-serial correlation was calculated. The relationship between Instructional Set and task perception was perfect ( $r = 1.0$ ).

#### Interrater Reliability

Two judges rated the Hollingshead Scale and their level of agreement was evaluated through use of the product moment correlation coefficient. Agreement was high in determining Social Position Score ( $r = 0.978$ ) and in placing Ss in the High and Low Social Class groups ( $r = 0.958$ ).

#### Sample Characteristics: Locus of Control

Performance on the I-E Scale for this particular group was significantly more external than that of previously reported samples (Rotter, 1966). Group means (Ware:  $\bar{X} = 7.73$ , S.D. = 3.82; Rotter:  $\bar{X} = 8.29$ , S.D. = 3.97; Schultz:  $\bar{X} = 11.27$ , S.D. = 5.54) were compared with t-tests. The present

group was significantly more external than both of the others ( $t$  [Schultz, Ware] = 9.91,  $df$  = 262,  $p$  < 0.001;  $t$  [Schultz, Rotter] = 19.03,  $df$  = 1329,  $p$  < 0.001).

### Social Class

Only one study reported examined characteristics of the Hollingshead Scale (Hollingshead and Redlich, 1958). This study reported the proportion of Ss in the Hollingshead and Redlich New Haven sample who fell in each of the five class levels of the Two Factor Scale. Table 2 displays a comparison of the Schultz and Hollingshead and Redlich distributions among these classifications.

TABLE 2  
COMPARISON OF SOCIAL CLASS DISTRIBUTIONS

	<u>C L A S S E S</u>				
	I	II	III	IV	V
Hollingshead & Redlich (1958)	2.2%	7.7%	16.9%	44.7%	28.5%
Schultz (1975)	24.5%	9.9%	33.1%	21.8%	10.6%
Chi-Square = 400.50, 4df, $p$ < 0.001					

Through a goodness of fit Chi square analysis, the present group was significantly different in distribution between the five classes. When these classes were dichotomized by placing levels I, II, and III in a High Social Class and levels IV and V in a Low Social Class group (table 3) and analyzed



through a goodness of fit Chi square procedure, the present group was found higher in Social Class position than Hollingshead and Redlich's group (1958).

TABLE 3  
COMPARISON OF SOCIAL CLASS DISTRIBUTIONS  
BY HIGH AND LOW SOCIAL CLASS

	C L A S S E S	
	High Social Class (I, II, & III)	Low Social Class (IV & V)
Hollingshead & Redlich (1958)	26.8%	73.2%
Schultz (1975)	67.6%	32.4%
Chi-Square = 84.0, 1df, p/0.001		

Relationship Between Social Class  
and Locus of Control

The relationship between Social Class as measured by the Hollingshead (1957) Two Factor Index of Social Position and Locus of Control as measured by the Rotter I-E Scale (1966) was evaluated with a product moment correlation coefficient and was negligible ( $r = .003$ ).

Analysis of Variance

Three different sources of data were examined in a 2x2x3 repeated-measures analysis of variance design. Depen-

dent measures, taken for the last four trials on the experimental game task included time per trial, performance on each trial, and score expectancies for each trial.

The factors in the 2x2x3 design included Social Class, Locus of Control, and Instructional Set.

#### Time Per Trial

Table 4 displays the analysis for the dependent measure of time per trial. Of importance in this analysis is the Set x Trials interaction. A graphic illustration of the Set x Trials interaction found in table 4 with time per trial as the dependent measure can be found in figure 1. As illustrated, there was a general trend for Skill and No Instructional Set Ss ( $S_2$  and  $S_3$ ) to reduce their time per trial over trials while Chance Instructional Set Ss ( $S_1$ ) exhibited a great deal of fluctuation from trial to trial. When instructional sets had a particular skill message involved, they caused fluctuation in the performance time of Ss.

#### Performance (Task Score)

Table 5 displays the analysis for the dependent measure of performance per trial. Table 5 reveals that no significant effects were found across the dimension of task performance.

TABLE 4

SUMMARY TABLE FOR ANALYSIS OF VARIANCE WITH  
TIME AS THE DEPENDENT MEASURE

Source	Sum of Squares	df	Mean Square	F
Social Class (S.C.)	38.52	1	38.52	<1.0
Locus of Control (L.C.)	200.08	1	200.08	<1.0
S.C. x L.C.	204.19	1	204.19	<1.0
Instructional Set (Set)	1329.88	2	664.94	2.43
S.C. x Set	1154.29	2	557.15	2.11
L.C. x Set	625.04	2	312.52	1.14
S.C. x L.C. x Set	132.12	2	66.06	<1.0
Trials (T)	790.29	3	263.43	3.66*
S.C. x T	74.19	3	24.73	<1.0
L.C. x T	45.79	3	15.26	<1.0
S.C. x L.C. x T	120.69	3	40.23	<1.0
Set x T	1168.58	6	194.77	2.71*
S.C. x Set x T	325.50	6	54.25	<1.0
L.C. x Set x T	56.58	6	9.43	<1.0
S.C. x L.C. x Set x T	324.00	6	54.00	<1.0

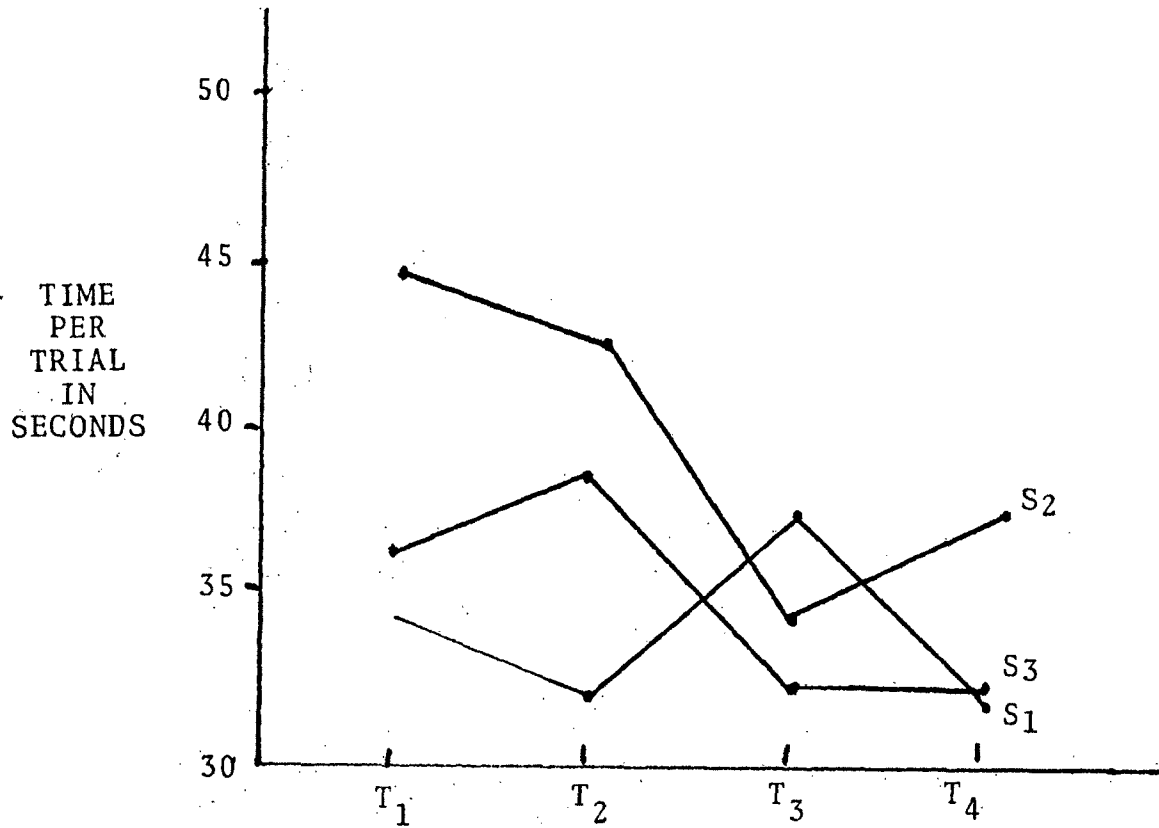
\*p/0.05

TABLE 5

SUMMARY TABLE FOR ANALYSIS OF VARIANCE WITH  
PERFORMANCE AS THE DEPENDENT MEASURE

Source	Sum of Squares	df	Mean Square	F
S.C.	0.13	1	0.13	<1.0
L.C.	15.76	1	15.76	<1.0
S.C. x L.C.	66.50	1	66.50	<1.0
Set	1200.76	2	600.38	2.81
S.C. x Set	437.51	2	218.76	1.02
L.C. x Set	900.70	2	450.35	2.11
S.C. x L.C. x Set	857.57	2	428.79	2.00
T	366.89	3	122.30	1.00
S.C. x T	199.64	3	66.55	<1.0
L.C. x T	125.77	3	41.92	<1.0
S.C. x L.C. x T	32.68	3	10.89	<1.0
Set x T	1339.78	6	223.297	1.83
S.C. x Set x T	422.53	6	70.42	<1.0
L.C. x Set x T	368.59	6	61.43	<1.0
S.C. x L.C. x Set x T	562.55	6	93.76	<1.0

SET X TRIALS INTERACTION WITH THE DEPENDENT  
VARIABLE OF TIME PER TRIAL



- S<sub>1</sub> = Chance Instructional Set  
S<sub>2</sub> = Skill Instructional Set  
S<sub>3</sub> = No Instructional Set

Figure 1.

### Expectations

A significant Social Class x Locus of Control x Instructional Set x Trials interaction was found in examining the dependent measure of score expectancy on each trial (see table 6).

Figures 2 and 3 display the Social Class x Locus of Control x Instructional Set x Trials interaction for score expectancies (see figures 2 and 3). Figure 2 exhibits score expectancies for High Social Class Internals, High Social Class Externals, Low Social Class Internals, and Low Social Class Externals given each of the three instructional sets. Low Social Class Ss expected higher scores or to do worse, when given a Chance Instructional Set and expected to do better when given a Skill Instructional Set. In the chance condition, their expectancies elevated as trials proceeded while on the Skill and No Instructional Set conditions their expectations remained at approximately the same level across trials. High Social Class Ss did not differ in score expectancies for the various instructional sets. High Social Class Internals converged in their expectancies as trials progressed while High Social Class Externals expected higher or worse scores as trials continued.

Figure 3 displays this same interaction by examining score expectancies for each S group (High Social Class Internals, High Social Class Externals, Low Social Class In-

TABLE 6  
 SUMMARY TABLE FOR ANALYSIS OF VARIANCE WITH  
 EXPECTATION AS THE DEPENDENT MEASURE

Source	Sum of Squares	df	Mean Square	F
S.C.	202.13	1	202.13	1.00
L.C.	254.38	1	254.38	1.26
S.C. x L.C.	125.13	1	125.13	< 1.0
Set	644.66	2	322.33	1.60
S.C. x Set	1057.07	2	528.54	2.62
L.C. x Set	55.45	2	27.72	< 1.0
S.C. x L.C. x Set	40.32	2	20.16	< 1.0
T	96.18	3	32.06	1.14
S.C. x T	92.26	3	30.76	1.09
L.C. x T	318.02	3	106.00	3.77*
S.C. x L.C. x T	268.02	3	89.34	3.17*
Set x T	645.80	6	107.63	3.82**
S.C. x Set x T	309.22	6	51.54	1.83
L.C. x Set x T	70.34	6	11.72	< 1.0
S.C. x L.C. x Set X t	425.47	6	70.91	2.52*

\*p/0.05

\* p/0.01

SOCIAL CLASS X LOCUS OF CONTROL X INSTRUCTIONAL SET X TRIALS INTERACTION WITH THE DEPENDENT VARIABLE OF EXPECTATION FOR EACH COMBINATION OF SOCIAL CLASS AND LOCUS OF CONTROL

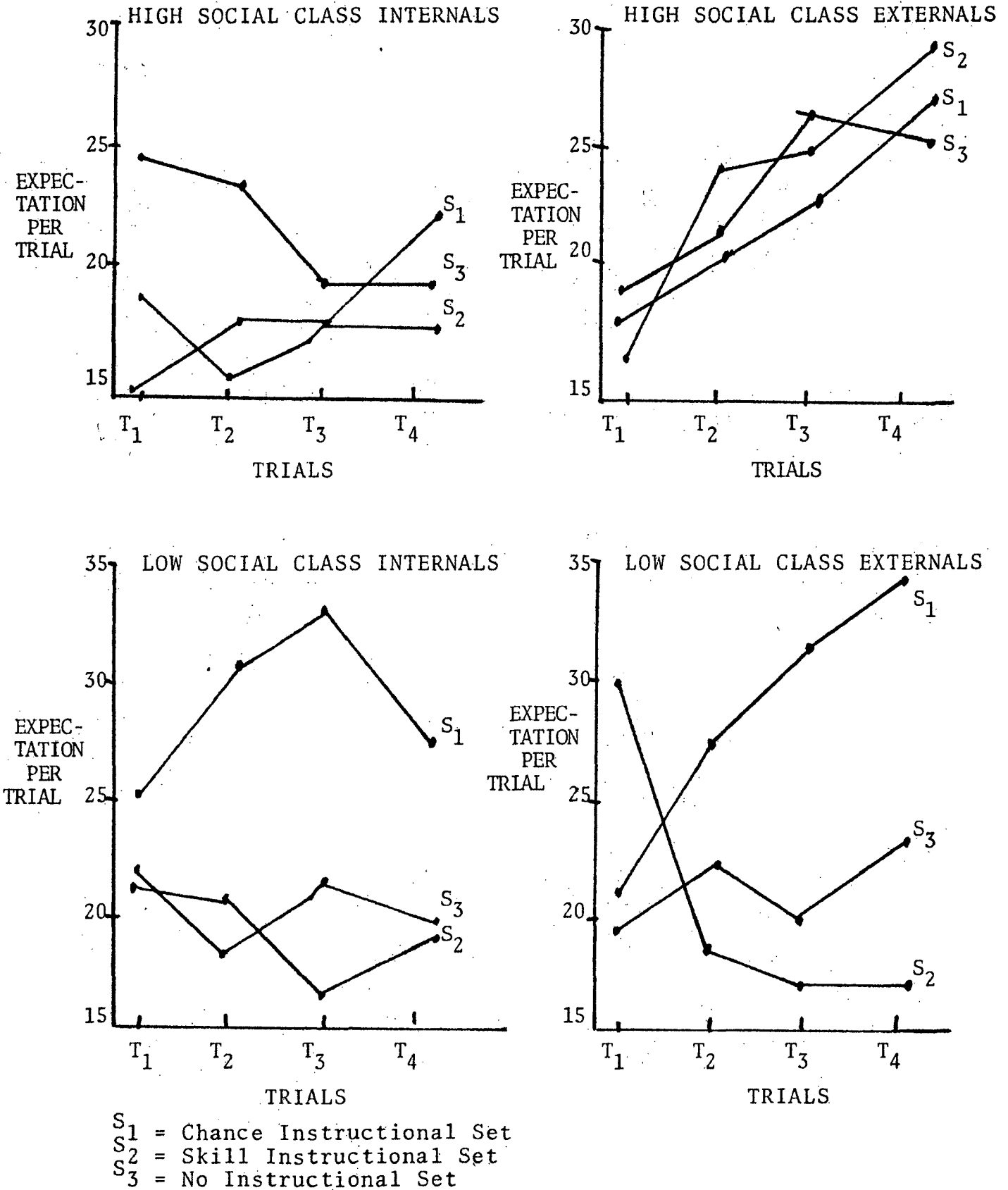
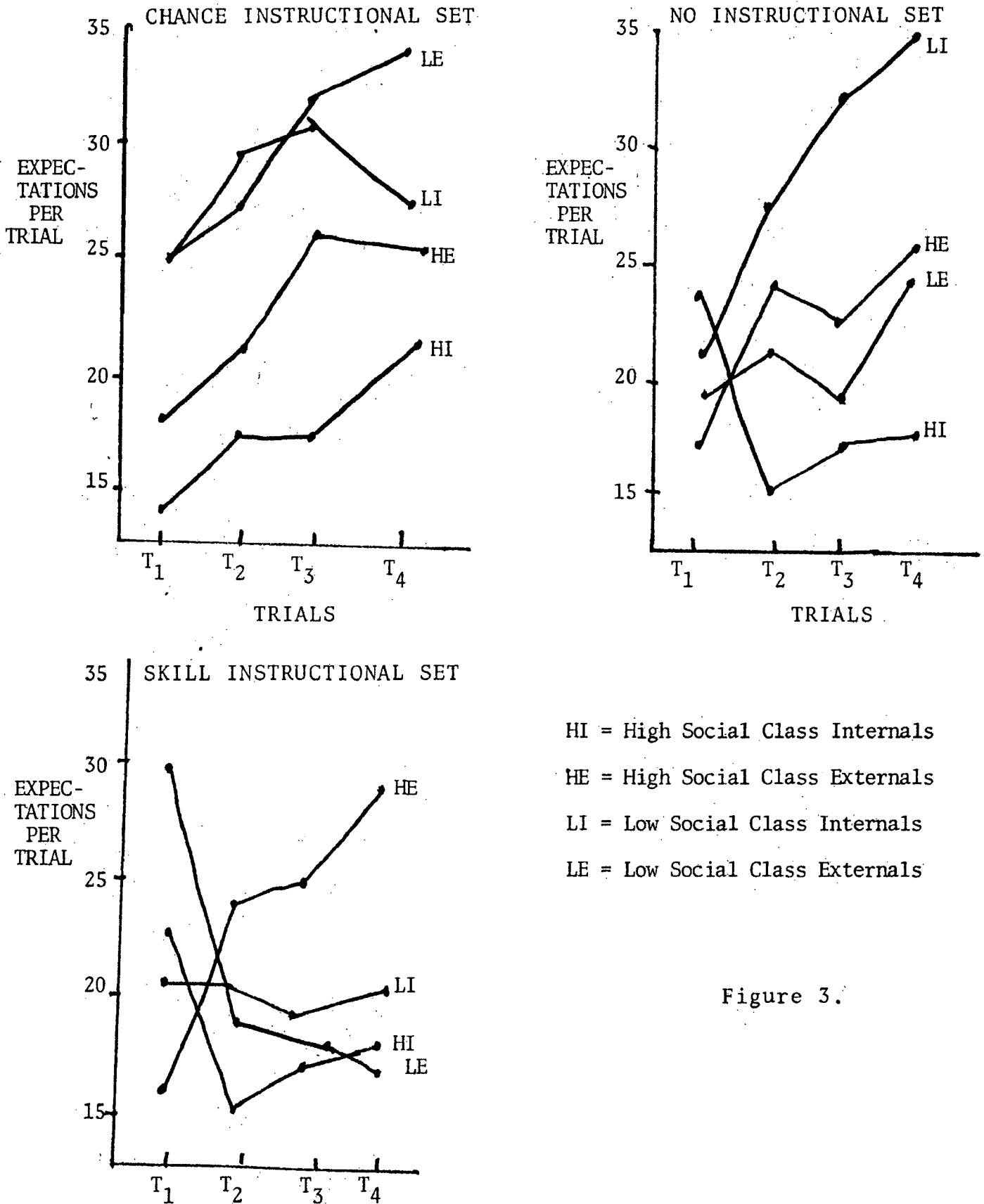


Figure 2.

SOCIAL CLASS X LOCUS OF CONTROL X INSTRUCTIONAL SET X TRIALS INTERACTION WITH THE DEPENDENT VARIABLE OF EXPECTATION FOR EACH INSTRUCTIONAL SET



HI = High Social Class Internals  
 HE = High Social Class Externals  
 LI = Low Social Class Internals  
 LE = Low Social Class Externals

Figure 3.



ternals, and Low Social Class Externals). Under each instructional set condition High Social Class Internals had the lowest score expectancies of all four groups. Given a Skill Instructional Set High Social Class Internals and Low Social Class Internals and Externals generally had lower score expectancies than High Social Class Externals after an initial fluctuation on the first trial. Given the No Instructional Set, High Social Class Internals had the highest score expectancies while High and Low Social Class Externals fell in between these two groups in score predictions.

#### Atypical Shifts in Expectation

An atypical shift in expectancy was operationally defined as an increase in expectancy following a decrease in performance or a decrease in expectancy following an increase in performance. Atypical shifts were tabulated for each S and an analysis of variance was computed in a 2x2x3 design (see table 7). A significant Social Class x Locus of Control interaction was found (see figure 4). Low Social Class Internals and High Social Class Externals exhibited atypical shifts in expectancy most frequently while High Social Class Internals and Low Social Class Externals exhibited fewer such shifts.

TABLE 7

SUMMARY TABLE FOR ANALYSIS OF VARIANCE WITH ATYPICAL  
SHIFTS IN EXPECTATION AS THE DEPENDENT MEASURE

Source	Sum of Squares	df	Mean Square	F
S.C.	0.0336	1	0.336	< 1.0
L.C.	0.0000	1	0.000	< 1.0
Set	1.1700	2	0.585	1.17
S.C. x L.C.	2.0800	1	2.080	4.2*
S.C. x Set	0.1640	2	0.080	< 1.0
L.C. x Set	0.5000	2	0.250	< 1.0
S.C. x L.C. x Set	0.0700	2	0.040	< 1.0

\*p/0.05

ATYPICAL SHIFTS IN EXPECTATION: SOCIAL CLASS  
X LOCUS OF CONTROL INTERACTION

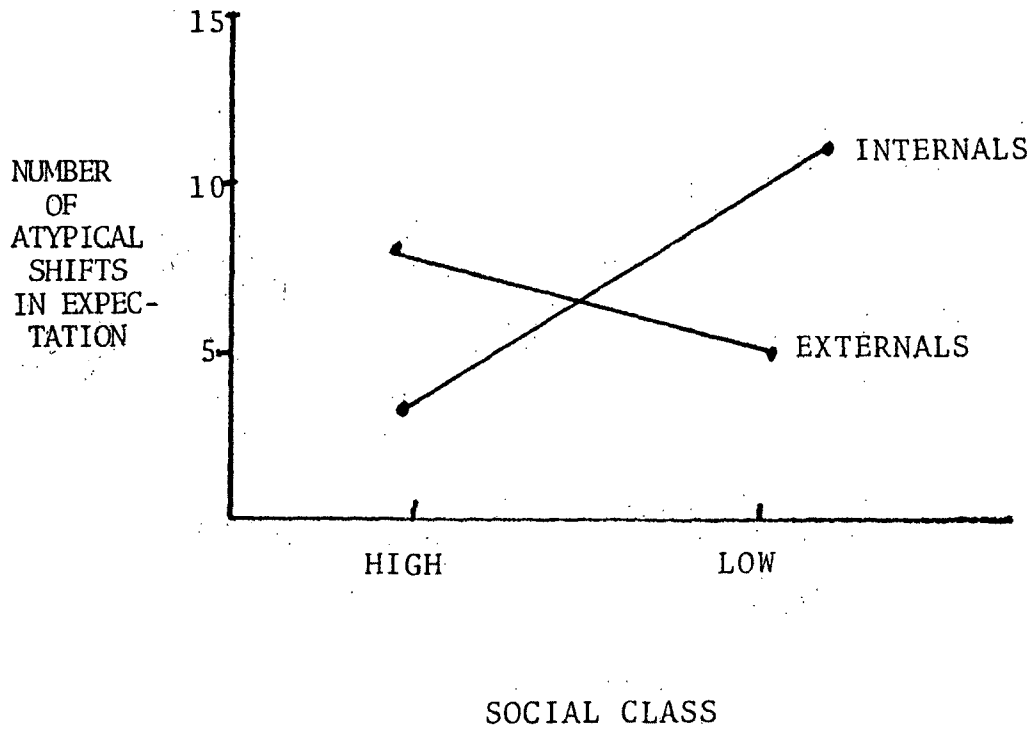


Figure 4.

### Additional Analyses

Joe (1974) described a factor analysis done on the I-E Scale which rendered the two factors of Personal Control and Control Ideology. The characteristics of these factors are discussed in appendix 4.

Questionnaires were regraded for Personal Control and Control Ideology using questions in the Rotter (1966) I-E Scale that Joe (1974) listed in the Personal Control and Control Ideology Scales. The results supplied by these analyses are presented below.

### Correlational Findings

A correlational matrix displaying interrelations between Social Class, Locus of Control, Personal Control, and Control Ideology is shown in table 8. This table shows that although heavily interrelated Personal Control and Control Ideology had negligible relations with Social Class.

### Analyses of Variance

Analyses of variance were computed to determine the effect of Personal Control and Control Ideology on Ss performance on the experimental task. These analyses were computed in a 2x3 repeated-measures design with factors of Personal Control or Control Ideology and Instructional Set respectively.

### Personal Control

#### Time Per Trial

Table 9 displays the analysis for the dependent measure

TABLE 8  
CORRELATIONAL MATRIX FOR THE VARIABLES OF SOCIAL  
CLASS, LOCUS OF CONTROL, PERSONAL CONTROL,  
AND CONTROL IDEOLOGY

	S.C.	L.C.	P.C.	C.I.
Social Class (S.C.)	1.0	-0.003	0.088	0.039
Locus of Control (L.C.)		1.0	0.373***	0.382***
Personal Control (P.C.)			1.0	0.447***
Control Ideology (C.I.)				1.0

\*\*\*p/0.001

TABLE 9  
SUMMARY TABLE FOR ANALYSIS OF VARIANCE CONTAINING  
THE FACTOR OF PERSONAL CONTROL WITH TIME  
AS THE DEPENDENT MEASURE

Source	Sum of Squares	df	Mean Square	F
P.C.	0.22	1	0.22	<1.0
Set	212.33	2	106.17	<1.0
P.C. x Set	1632.11	2	816.06	4.55*
T	81.61	3	27.20	<1.0
P.C. x T	150.56	3	50.18	<1.0
Set x T	349.56	6	58.26	<1.0
P.C. x Set x T	178.44	6	29.74	<1.0

\*p/0.05

of time per trial. No significant effects were noted.

### Performance

Table 10 exhibits the analysis for the dependent measure of performance on each trial. A significant Personal Control x Instructional Set interaction was noted and is displayed in figure 5. Figure 5 illustrates that, in general, externals in Personal Control did better on the task under both Chance and Skill Instructional Sets but did worse when No Instructional Set was given. Conversely, Internals in Personal Control did worse when given Chance and Skill Instructional Sets but performed better than externals when no set was given.

### Expectations

Table 11 displays the analysis for the dependent measure of expectations on each trial. A Personal Control x Instructional Set x Trials interaction was found to be of importance in this analysis. Figure 6 displays this interaction. Personal Control Internals expected to do best in skill conditions. Personal Control Externals, when given skill instructions, expected to do well on their first and last trials; their score expectancies increased in the second and third trial. Their expectancies, given chance instructions, remained consistent across trials and were lower than expectancies stated under skill conditions on the

TABLE 10

SUMMARY TABLE FOR ANALYSIS OF VARIANCE CONTAINING THE  
FACTOR OF PERSONAL CONTROL WITH PERFORMANCE  
AS THE DEPENDENT MEASURE

Source	Sum of Squares	df	Mean Square	F
P.C.	0.22	1	0.22	<1.0
Set	212.33	2	106.17	<1.0
P.C. x Set	1632.11	2	816.06	4.55*
T	81.61	3	27.20	<1.0
P.C. x T	150.56	3	50.18	<1.0
Set x T	349.56	6	58.26	<1.0
P.C. x Set x T	178.44	6	29.74	<1.0

\*p/0.05

TABLE 11

SUMMARY TABLE FOR ANALYSIS OF VARIANCE CONTAINING THE  
FACTOR OF PERSONAL CONTROL WITH EXPECTATION  
AS THE DEPENDENT MEASURE

Source	Sum of Squares	df	Mean Square	F
P.C.	153.12	1	153.12	<1.0
Set	330.75	2	165.38	1.04
P.C. x Set	720.58	2	360.29	2.26
T	167.60	3	55.86	6.00**
P.C. x T	111.15	3	37.05	3.98*
Set x T	89.69	6	14.95	1.61
P.C. x Set x T	282.31	6	47.05	5.06***

\*p/0.05

\*\*p/0.01

\*\*\*p/0.001

PERSONAL CONTROL X INSTRUCTIONAL SET INTERACTION  
WITH THE DEPENDENT VARIABLE OF PERFORMANCE

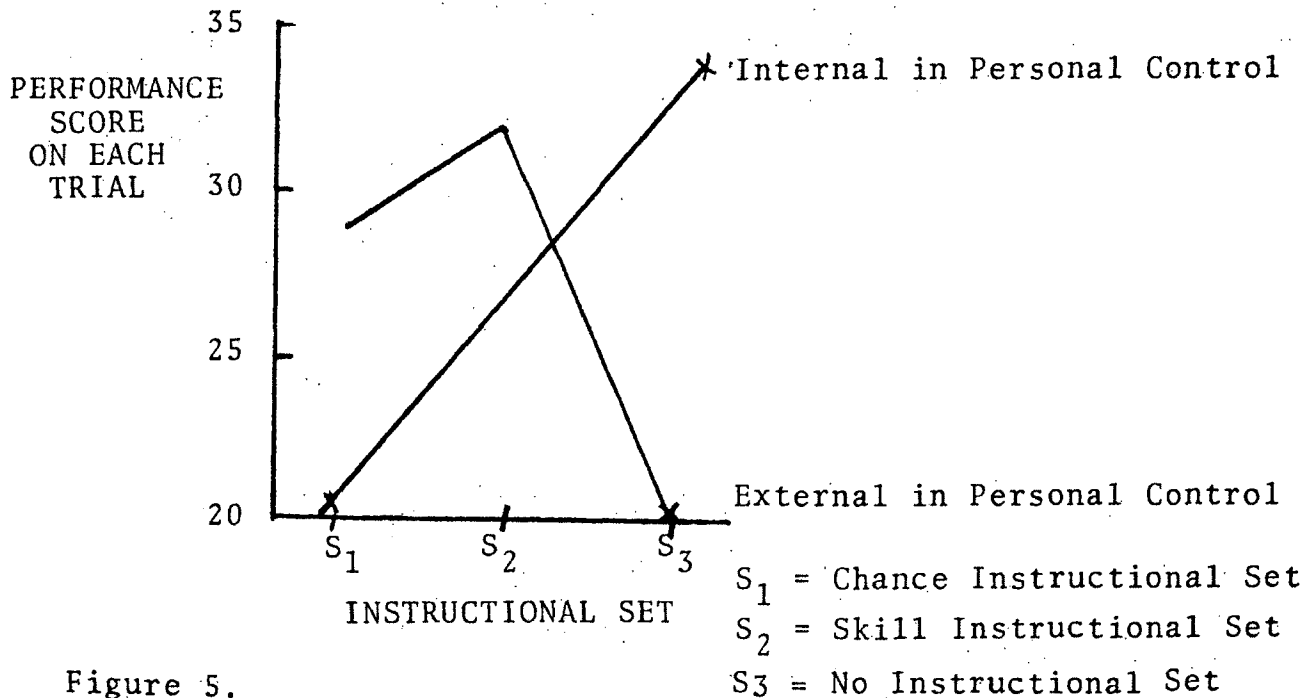
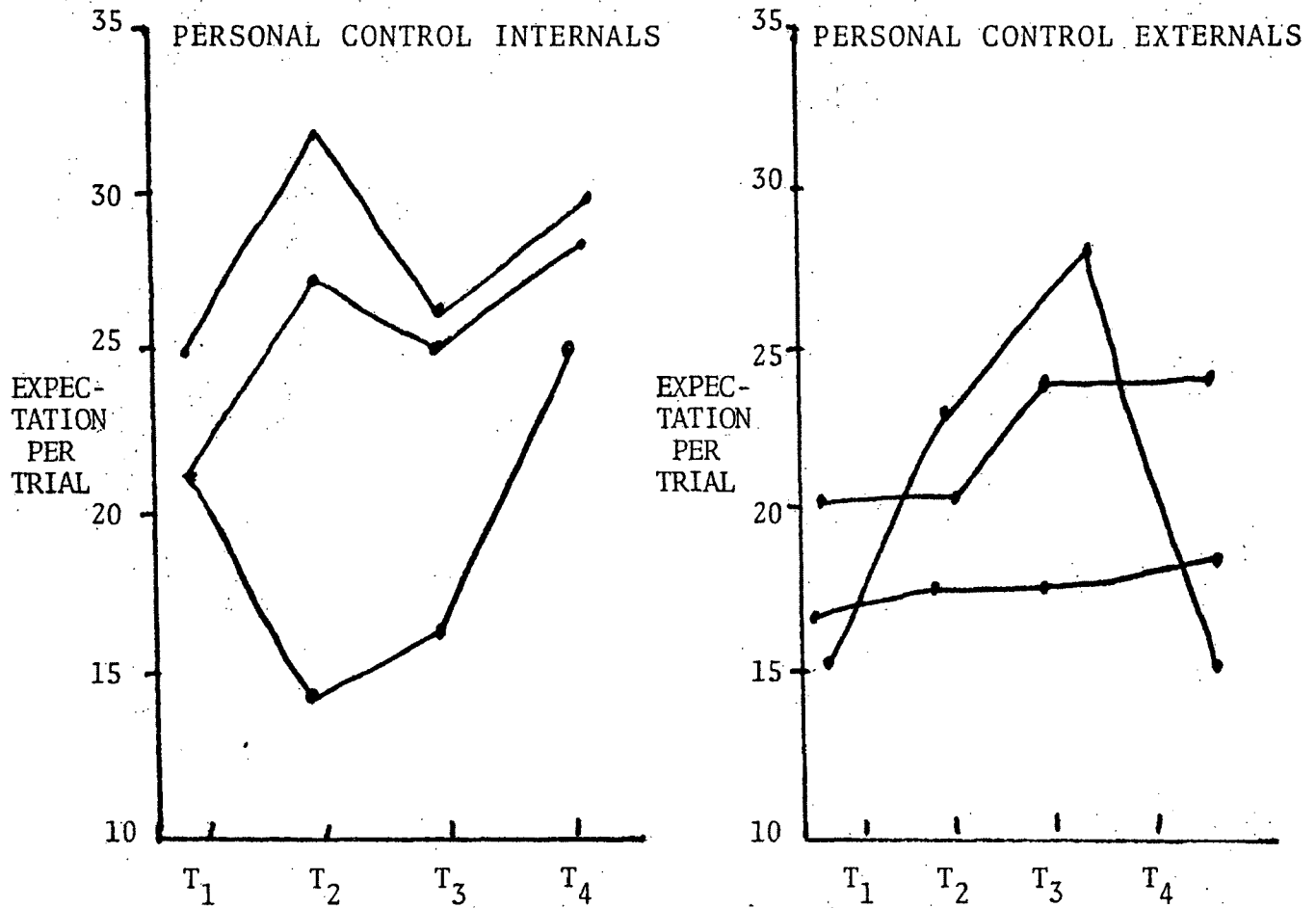


Figure 5.

PERSONAL CONTROL X INSTRUCTIONAL SET X TRIALS  
 INTERACTION FOR THE DEPENDENT  
 VARIABLE OF EXPECTATION



S<sub>1</sub> = Chance Instructional Set

S<sub>2</sub> = Skill Instructional Set

S<sub>3</sub> = No Instructional Set

Figure 6.



second and third trials. Generally, they expected to do best when given the No Instructional Set instructions.

### Control Ideology

Tables 12, 13, and 14 display analyses of variance with Control Ideology as a factor. In all analyses, there were no significant effects.

### Other Findings

The relationship between mathematics ability and other measures administered was examined. Ss were asked to report their grades in their last course in mathematics and were asked whether or not they liked mathematics. Product moment correlations are displayed in table 15.

There was a significant positive relationship ( $r = 0.667$ , 149df,  $p/0.001$ ) between Locus of Control and grades in mathematics as well as a significant correlation between Locus of Control and liking for mathematics ( $r = 0.316$ , 149df,  $p/0.001$ ). This relationship related externality with high mathematics ability and greater liking for mathematics.

TABLE 12

SUMMARY TABLE FOR ANALYSIS OF VARIANCE CONTAINING  
THE FACTOR OF CONTROL IDEOLOGY WITH  
TIME AS THE DEPENDENT MEASURE

Source	Sum of Squares	df	Mean Square	F
C.I.	91.88	1	91.88	<1.0
Set	431.22	2	215.61	<1.0
C.I. x Set	549.15	2	274.58	<1.0
T	590.76	3	196.92	2.37
C.I. x T	157.83	3	52.61	<1.0
Set x T	382.72	6	63.79	<1.0
C.I. x Set x T	55.45	6	9.24	<1.0

TABLE 13

SUMMARY TABLE FOR ANALYSIS OF VARIANCE CONTAINING  
THE FACTOR OF CONTROL IDEOLOGY WITH PERFORMANCE  
AS THE DEPENDENT MEASURE

Source	Sum of Squares	df	Mean Square	F
C.I.	14.7	1	14.70	<1.0
Set	320.42	2	160.21	<1.0
C.I. x Set	284.15	2	142.17	<1.0
T	43.30	3	14.43	<1.0
C.I. x T	161.17	3	53.72	<1.0
Set x T	1000.85	6	166.81	1.78
C.I. x Set x T	293.78	6	48.96	<1.0

TABLE 14

SUMMARY TABLE FOR ANALYSIS OF VARIANCE CONTAINING THE  
FACTOR OF CONTROL IDEOLOGY WITH EXPECTATION  
AS THE DEPENDENT MEASURE

Source	Sum of Squares	df	Mean Square	F
C.I.	170.41	1	170.41	<1.0
Set	1160.72	2	580.36	3.05
C.I. x Set	211.52	2	105.76	<1.0
T	29.09	3	9.70	<1.0
C.I. x T	93.29	3	31.10	<1.0
Set x T	176.88	6	29.48	<1.0
C.I. x Set x T	180.48	6	30.08	<1.0

TABLE 15

CORRELATIONAL MATRIX FOR THE VARIABLES OF SOCIAL  
CLASS, LOCUS OF CONTROL, PERSONAL CONTROL,  
CONTROL IDEOLOGY, MATHEMATICS GRADES,  
AND LIKING OF MATHEMATICS

	S.C.	L.C.	P.C.	C.I.	M.G.	L.M.
S.C.	1.0	-0.003	0.088	0.039	-0.013	0.024
L.C.		1.0	0.373***	0.382***	0.667***	0.316***
P.C.			1.0	0.447***	-0.256**	-0.078
C.I.				1.0	-0.164	-0.122
Mathematics Grades (M.G.)					1.0	0.683***
Liking of Mathematics (L.M.)						1.0

\*\*p/0.01

\*\*\*p/0.001

## CHAPTER IV

### DISCUSSION

#### Support for Hypotheses

In chapter 1 six hypotheses were generated.

The first prediction proposed that subjects of lower-class levels would have higher expectations of success in tasks perceived as chance-determined than they would in tasks perceived as skill-determined. No support was generated for this hypothesis. In examining the Social Class x Locus of Control x Instructional Set x Trials interaction it is clear that Low Social Class Ss have higher score expectancies and lower expectations of success when given a Chance Instructional Set than when given a Skill Instructional Set. Because the present sample is composed of college students, the restriction of range of educational status may have affected these Ss perceptions of tasks in general and their higher educational level could have caused them to be more reliant on skill. Therefore, the dependence on skill of the college population used in this study may have lowered the expectations of its Low Social Class members for success under chance conditions.

The second hypothesis suggested that subjects of middle and upper classes would have higher expectations of success

in tasks perceived as skill determined than they would in tasks perceived as chance determined. No support was generated for this hypothesis. Ss did not exhibit differences in expectations because of differences in instructional sets in the predicted direction.

The third prediction hypothesized that there would be an interaction between social class levels and conditions of chance versus skill in Ss expectations of their performance on the experimental task. While an interaction did exist between Social Class, Locus of Control, Instructional Set, and Trials, this interaction was not in the proposed direction. Low Social Class Ss did not expect to perform better when given a chance instructional set; rather, they expected to perform more poorly. High Social Class Ss expectations were not affected by instructional set. It may be that Low Social Class Ss are more susceptible to instructional set. Gore (1962), Strickland (1962), Getter (1962), and Rotter (1966) proposed that internals are more resistant to subtle manipulation than externals. One of the ways in which social class membership may be related to locus of control may be that High Social Class people behave more internally by not responding to instructional set. Low Social Class people behave externally by being susceptible to the effects of these manipulations.

The fourth hypothesis, based on studies by Du Cette and Wolk (1972), Battle and Rotter (1963), Rotter and

Mulry (1965), and Feather (1968) predicted that externals would exhibit more atypical shifts in expectations than internals. Although this hypothesis was not fully supported, an interaction between social class and locus of control was noted that partially addressed this prediction and the prediction made in the fifth hypothesis. The fifth hypothesis predicted that Low Social Class Ss would exhibit more atypical shifts in expectancy than did the High Social Class Ss as it was expected that social class and locus of control would be related. The interaction between social class and locus of control appears to concern both predictions; therefore, support for both hypotheses will be presented in one discussion. Low Social Class Internals and High Social Class Externals experienced more atypical shifts in expectancy than did the Low Social Class Externals and High Social Class Internals. It may be that the Low Social Class Externals were completely without self-direction in forming expectancies and simply stated expectations which conformed to their performance using their scores as the only available feedback. Tadeschi and Levy (1971) found that Lower Class Blacks were more responsive to social reinforcement in skill tasks because of a lack in confidence in their own ability. If Low Social Class Externals perceived of the task as involving a skill they did not have or could not discover, then they might have been susceptible to the only feedback available: their pattern of perfor-

mance. High Social Class Internals might have attended to this source of information for other reasons. Perceiving their pattern of success as the most accurate feedback available over a short series of trials, they might have used it as a guideline. Tadeschi and Levy found that Middle Class whites were most responsive to social reinforcement in chance tasks. As discussed above, it may be that High Social Class Internals perceived the task as chance determined in general and thus attended to the only available feedback, their performance.

On the other hand, both Low Social Class Internals and High Social Class Externals exhibited atypical shifts in expectation. It may be that these Low Social Class Ss perceived of the task as chance-determined and, as Tadeschi and Levy suggest Lower Social Class Ss would be, were more comfortable in accepting the task as chance-determined and made non-contingent statements of expectation. High Social Class Externals, because of their externality, may have behaved in such a way for the same reasons; they accepted the task as chance-determined and made wild statements of expectations. If one accepts the above explanation based on Tadeschi and Levy's findings, diagram 2 might explain the interaction.

Perhaps Low Social Class Ss in general perceive the task as skill controlled. However, the Low Social Class Internals use a gambling skill and demonstrate atypical

DIAGRAM 2Social Class Level as a Function of Occupational  
and Educational Status

		High Social Class	Low Social Class
INTERNAL	PERCEPTION OF TASK	Chance Determined	Skill Determined
	STRATEGY	Unsure of solution; follow performance feedback.	Gambling skill* used; follow gambler's fallacy.
EXTERNAL	PERCEPTION OF TASK	Chance Determined	Skill Determined
	STRATEGY	Acceptance of gambling situation; guess appropriately (gambler's fallacy).	Unsure of skill; follow performance feedback.

\*The term "gambling skill" seems paradoxical for gambling seems to be such a chance controlled activity. "Gambling skill" is meant to refer to the perception of these Ss that, through use of the gambler's fallacy, they are able to "skillfully gamble" or "play the odds" in their favor.

shifts. Cohen (1960) described atypical shifts as evident of the gambler's fallacy that success will be followed by failure and that failure will be followed by success. Low Social Class ExternalS feel devoid of that skill and thus attend to feedback as Tadeschi and Levy suggest a Lower Class person will do. High Social Class Ss perceive success in the task as chance controlled. The internalS clung to performance feedback and the externalS followed the guideline of the gambler's fallacy.

Another explanation of the significant locus of control by social class interaction for atypical shifts in expectancy



is possible. Battle and Rotter (1963) found that bright lower-class Black Ss were more external than their less intelligent lower-class Black peers. Low Social Class Internals may have felt that they controlled their performance in the experimental task but did so poorly; they thus treated the outcome as chance-determined and subscribed to the gambler's fallacy.

The final prediction made for this study hypothesized that subjects in general would exhibit atypical shifts in expectation in chance conditions. No support was found for this hypothesis such that subjects in general experienced atypical shifts in expectation in chance situations. A difficulty may have been encountered because of the credibility of the Skill Instructional Set. Ss exhibited fluctuation of scores on such measures as time per trial and expectation on each trial when given a Skill Instructional Set. The reader will recall that the experimental game task consisted of dice and a game board. Scores on individual dice rolls determined what permutations of blocks Ss could turn down on the board. Thus, the chance component created by the roll of the dice affected the decisions made by Ss in determining which blocks to turn down. Because most of the activity in the experimental task was affected by the chance aspect of dice rolling, success in the task may have been most commonly perceived as controlled by chance and a skill set may have decreased the difference

between Chance and Skill Instructional Sets in eliciting differences in atypical shifts of expectation.

#### Locus of Control and Social Class

This study failed to find a relation between social class and locus of control and thus failed to replicate findings of Battle and Rotter (1963), Milgram, Shore, Riedel, and Malasky (1970), and Gable and Minton (1971) who all found such a relationship. Several arguments might be offered to explain the failure of this study to find such a relationship.

Previous studies (Battle and Rotter, 1963; Milgram et al., 1970; Gable and Minton, 1971) examined the relationship between locus of control and income levels or subjective evaluations as indices of social class. The present study used the Hollingshead Two Factor Index of Social Position (Hollingshead, 1957) and evaluated Ss social class through examination of parental occupational and educational levels. The failure of this study to replicate findings of the authors cited above relating social class to locus of control may have been a function of the difference in measures used. Income level may not have been totally interchangeable with parental occupational and educational levels for this particular sample. A future study might examine which measures relate more to locus of control (i.e., income level, occupational status, or educational level).

A second argument explaining the lack of relationship between social class and locus of control would state that restriction of range spuriously lowered the correlation. It appears that the present study sampled Ss who were extreme on both the Hollingshead Scale and on the I-E Scale. The present sample appeared to be of fairly high Social Position and were significantly more external than previous college samples (Rotter, 1966). It appears, then, that they were not representative of the population as a whole and because of the restriction of range a relationship was not found.

A third speculative argument is suggested by the finding that the present sample was more external than previous ones. Instead of proposing that the Montana sample was unrepresentative of the population as a whole in locus of control, one might argue that the general population has become more external over the last ten years as a function of changes in the society. Economic difficulties, the Viet Nam War, corruption in government, and assassination were all events or experiences over which the common citizen may have felt little control. Because of this speculated lack of control, people in general may have gradually come to feel more external. This change in locus of control may have gradually been more accentuated in the middle and upper classes who may have been seen to feel more control previous to the current economic and political problems.

This assumption of internality on the part of the middle and upper classes is supported by the studies cited above (Battle and Rotter, 1963; Milgram et al., 1970; Gable and Minton, 1971) that found internality to be associated with higher social class levels. As the middle- and upper-class populations grew more external the relationship between social class and locus of control diminished. Thus, the present study found a negligible relationship between the two variables.

Although there was no relationship between locus of control and social class established in this study, it seemed possible that certain dimensions of the I-E Scale might have exhibited such a relationship with social class. The two dimensions of Personal Control and Control Ideology have been factored out of the Rotter (1966) I-E Scale (see appendix 4). Personal Control measures the belief of the individual that he exercises control over his environment while Control Ideology measures the feeling that most people in the society exercise control. With the present sample neither Personal Control nor Control Ideology was found to be related to social class.

In summary, either because of difference in social class measurement, a restricted range in scores, or because of changes caused by current economic and political difficulties, no relationship was found between social class and locus of control and its dimensions.

Locus of Control and Performance in  
Chance Vs. Skill Tasks

Previous research (Phares, 1957; James, 1957; Julian and Katz, 1968; Lefcourt, Lewis, and Silverman, 1968; Rotter and Mulry, 1965; Julian, Lichtman, and Ryckman, 1968) consistently found differences in performance on and preference for chance and skill tasks between internals and externals. Such differences were not replicated in this study for Ss dichotomized by the Rotter (1966) I-E Scale. However, the Personal Control dimension (Joe, 1974) did differentially affect both the performances and expectations of Ss under different instructional sets. Externals in Personal Control did better than internals when given both Chance and Skill Instructional Sets but did worse than internals under the No Instructional Set condition.

These findings suggest that externals on this dimension need direction concerning strategy and when given this direction, have better performances than internals. Personal Control Internals become disoriented by direct instructions; they only perform well when allowed to generate their own strategy. Findings of Strickland (1962), Getter (1962), and Gore (1962) discussed above which show that internals in locus of control are resistive to subtle manipulation are consistent with the present finding for the Personal Control dimension. It appears that internals in Personal Control as well as internals in Locus of Control are resistant to subtle

manipulation by instructional set. On the other hand externals in Personal Control need and welcome the direction that the manipulation provides.

Expectations of scores were differentially affected by the Personal Control dimension. Internals in Personal Control clearly expected to receive lower and better scores when given a Skill Instructional Set than when given a Chance Instructional Set. The Personal Control Externals were not clearly affected by Chance and Skill Instructional Sets; they had the lowest score expectancies when given No Instructional Set. Personal Control Externals may have perceived the No Instructional Set Condition to have more of a chance condition connotation than either the chance or skill instructions.

Length of instructional set may have been an important factor in influencing perceptions of Personal Control Externals. Both the Chance and Skill Instructional Sets took more presentation time than did the No Instructional Set instructions. Externals may have difficulty with length of set which could have caused them to become confused. When instructions take less time to present, they may be perceived by Personal Control Externals more clearly leading these Ss to expect better scores.

It is of interest that the Personal Control dimension was more facilitative than the I-E Scale in identifying internals who would have higher expectations of success in

skill rather than chance conditions. Because the Personal Control Scale is purported to measure the belief of an individual that he personally has control over his environment, it would seem that this dimension may provide a purer measurement of internality as defined in this paper. In chapter 1 an internal orientation was defined as:

the expectation of an individual that the environment will be responsive to his actions and that he will be reinforced for them. (emphasis added)

Because internals and externals in Personal Control were significantly affected by Chance and Skill Instructional Sets in predicted directions while internals and externals in locus of control were not so affected, it may be that the Personal Control dimension is more useful in this type of research than is the I-E Scale. Such a conclusion was proposed by Joe (1974).

#### Social Class Effects

Several findings of the present study suggest differences in expectancy behavior that are associated with Social Class membership on the dice game presented. High Social Class Ss seem to be less susceptible to the effects of instructional sets than Low Social Class Ss.

An interaction between Social Class and Locus of Control suggests that Social Class membership differentially affects the elicitation of atypical shifts in expectation. Low Social Class Ss may have perceived the experimental

task as skill controlled while High Social Class Ss perceived it as chance controlled.

If a difference in perception were to exist such that High Social Class Ss were to perceive the experimental task as chance controlled and Low Social Class Ss were to perceive it as skill controlled, the difference might parsimoniously explain why Low Social Class Ss are more susceptible to the effects of instructional set. In viewing the task as controlled by skill, they are more receptive to cues or strategies suggested. High Social Class Ss, in perceiving chance as the controlling factor in the task, are inattentive to cues and are not differentially affected by instructional set.

#### Mathematics Ability

Prior to data collection a decision was made to examine the relationship between mathematics ability and locus of control. A significant was found such that externals in locus of control reported higher grades in mathematics than did internals and also reported a greater liking for mathematics.

Because grades in mathematics courses were self reported, this finding is suspect and it becomes unclear whether externals do perform better in mathematics courses or report that they perform better. Further research could test both of these interpretations by administering a self report ques-



tion about mathematics performance and a mathematics test correlating the two scores on the I-E Scale.

If one were to accept a finding showing that externals do perform at a higher level in mathematics than do internals as valid, then one might interpret it by suggesting that externals do well in mathematics because it is an area of study in which the rules are well laid out and in which the student is not required to independently exercise control. The above discussion suggested externals perform better when given instructions and strategies while internals perform better when given no instructions. Internals may perform worse in mathematics because they are not given the freedom to perform outside of its system of rules. When told what to do, they are not allowed to generate their own control, and become confused or frustrated by externally imposed controls and do worse. A second argument might suggest that externals believe that outcomes are controlled by chance or probability and since mathematics is a science of probability, they are comfortable in it and excel.

The finding that externals like mathematics is not surprising. If they are successful in it, it would follow that they like it.

#### Other Problems

Elms (1975) argued that there is a crises in social psychological research resulting in part from the inability

of experimenters to replicate results of previous studies.

Elms cited Janis (in press) who stated:

Time and again the social psychologist's laboratory findings on main effects and simple interactions that are expected to be dependable generalizations turn out to be will-o-the-wisps, because they fail to stand up in conceptual replications or turn out to be the product of higher interactions with relatively trivial variables that are specific to the experimental setting. The same demoralizing fate can sometimes beset the field experimenter, since nature will continue to be ingenious in finding new ways to fool even the most wary of investigators.

Perhaps one of the difficulties of the current study in replicating past results was a product of the kinds of higher level interactions Janis and Elms described. Gergen (1973) argued that social psychology research is affected by changes in culture and that cultures vary greatly across time. He suggested that the findings with which social psychologists deal are "largely nonrepeatable and . . . fluctuate markedly over time." Thus, social psychology can never make any lasting discoveries; and regularities of findings "are firmly wedded to historical circumstances."

The inconsistencies found between the present study and the previous studies might be explained by these two arguments. The two factors of time and human complexity may have created these failures to replicate other studies. The inability to relate social class to locus of control and the failure of the locus of control dimension to predict behavioral differences across instructional sets might have

been a result of either changes in people in general over the last ten years or of cancellation of effect by some higher order interaction. What positive evidence that was generated must also be questioned as it may fluctuate over time and be unreliable. Slight variations in design by future examiners might also create interactions which will hamper reproducibility.

## CHAPTER V

### SUMMARY

The above study was undertaken to determine whether social class membership has the same effect on expectations of success in chance and skill tasks as does internality or externality as measured by the Rotter I-E Scale. Previous studies found that externals in locus of control performed better in and preferred chance-controlled tasks while internals performed better in and preferred tasks in which skill controlled the outcome (Julian and Katz, 1968; Lefcourt, Lewis, and Silverman, 1968; Rotter and Mulry, 1965). Other studies (Battle and Rotter, 1963; Coleman, 1966; Gable and Minton, 1971) found a relationship between social class and locus of control such that members of lower social classes were more external than members of higher social classes. Low social class Ss were predicted to have higher expectations of success in chance conditions and to experience more atypical shifts in expectation than high social class Ss. High social class Ss were predicted to expect better performances in skill conditions.

One hundred and seventy-one Introductory Psychology students at the University of Montana were administered the

Rotter I-E Scale (1966) and the Hollingshead Two Factor Index of Social Position (1957). Their scores on these two instruments were used to categorize them into four groups including High Social Class Internals, High Social Class Externals, Low Social Class Internals, and Low Social Class Externals. Forty-eight of these Ss were recruited to play a dice game. Instructional set was manipulated for this task such that Ss were told that success in the game depended either on chance or skill or were given no such set. Prior to the last four trials on this task, Ss were asked to predict their score on that particular trial.

For this sample social class was not found to be related to locus of control as it had been in previous studies. Low Social Class Ss expected their best performance in skill, rather than in chance, tasks. Low Social Class Internals and High Social Class Externals were found to display atypical shifts in expectation to a greater degree than Low Social Class Externals and High Social Class Internals. Low Social Class Ss did appear to be more responsive to subtle manipulation than High Social Class Ss.

The Personal Control Scale (Joe, 1974) functioned more efficiently in identifying internals and externals differing in expectations in chance and skill tasks than the I-E Scale.

A relationship was found between locus of control and reported success in courses in mathematics. Externals reported greater success in mathematics classes than internals.

Two explanations were offered to principally explain the failure of this study to replicate findings of previous studies and its failure to find support for some of its own hypotheses. Restriction of range in the current college sample might account for the lack of relationship found between social class and locus of control. Changes in constructs that may occur over time and the possibility of the existence of higher order interactions suggested by Elms (1975) might explain why the present study failed to replicate previous experiments and why it failed to find support for hypotheses based on findings from previous research.

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A P P E N D I C E S

APPENDIX I

THE I-E SCALE: DEVELOPMENT,  
RELIABILITY, AND VALIDITY

The first attempt at developing the I-E Scale was made by Phares (1957) who used it in a study of chance and skill effects on expectancies of reinforcement. His was a Likert-type scale with thirteen items stated as external attitudes and thirteen items stated as internal attitudes. Phares found that his scale tended to aid in predicting that individuals with external attitudes would behave in a similar fashion as did all subjects when placed in a chance versus skill situation. That is, they tended to show more unusual shifts in expectancy of success, and a lower frequency of shifts of expectancy than did subjects who scored as internals on these thirteen items.

James (1957) revised Phares' test still using a Likert format, wrote twenty-six items, and included filler items based on the statements which seemed most successful in Phares' study. James was able to find significant correlations between test performance and behavior in his task situation which was similar to Phares'. Individuals who scored towards the external end of the continuum tended to behave as though they were always performing in a task of chance.

Liverant and Scodel (1960), in attempting to broaden and purify the test from such contamination as social desirability, constructed a sixty-item scale that contained

several subscales for areas such as achievement, affection, and general differential predictions and were contaminated by factors such as social desirability. Because of the lack of divergence of the subscales, items meant to measure specific subareas of the internal construct were eliminated. The remaining items on the scale had a correlation of .35 to .40 with a Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe, 1964). Liverant and Scodel attempted to reduce this association by removing the items most highly correlated with the Marlowe-Crowne Scale.

The final version of the I-E Scale is a 29-item forced-choice test including six filler items intended to disguise the purpose of the test (Rotter, 1966). Rotter describes the test as one of generalized expectancies as it measures the individual's expectations about how reinforcement is controlled.

### Reliability

Reliability measures for the I-E Scale have been fairly consistent since its inception. Rotter (1966) reported test-retest reliability measures for varying samples and for intervening time periods ranging from one to two months in length. These measures ranged from .49 and .83. Joe (1971) reviewed several studies since Rotter. One such study found a test-retest reliability of .75. The test-retest coefficients listed seem to be very consistent.

Internal consistency estimates of the reliability of the scale have ranges from .65 to .79 with nearly all correlations in the .70s (Rotter, 1966). Rotter explains that while these estimates are only moderately high for a scale of this length, he notes that the items are not arranged in a difficulty hierarchy but rather are samples of attitudes in a wide variety of different situations. He perceives of the scale as an additive one and thus items are not comparable. Therefore, split-half or matched-half reliability tends to underestimate the internal consistency of the scale.

### Validity

The original scale (Liverant and Scodel, 1960) produced high correlations with the Marlowe-Crowne Desirability Scale which ranged between -.35 and -.40. The revised scale attempted to reduce the magnitude of these correlations and was rather successful. The I-E Scale's correlations with the Marlowe-Crowne Scale range from -.07 to -.35 (Rotter, 1966). Rotter explains that the range of these correlations may reflect differences in testing conditions. The median for different samples of college students was -.22. Joe (1971) and Altrocchi, Palmer, Hellman, and David (1968) both reported significant correlations between the two scales. Berzins, Ross, and Cohen (1970) reported significant correlations between the I-E Scale and Edward's Social Desirability



Scale. These findings suggest a lack of independence between social desirability and the I-E Scale.

Mirels (1970) attempted to clarify the factor structure of the I-E Scale. He found that the scale loaded on two factors. Factor I concerned the amount of control one believes he personally possesses. Factor II concerned the extent to which one believes that a citizen can exert control over political and world affairs. Joe (1971) in reviewing Mirels' study suggests that, for the I-E Scale to be a valid instrument, it must be modified to distinguish those aspects of a person's world view which indicate a personality trait and those which reflect societal norms.

APPENDIX II

SOCIAL CLASS MEASURES

The label of Social Class is one which is suffering increasing ill-repute among sociologists who claim that it is impossible to determine a relative measure of social standing on one or two measures alone. To use proprietorship as an equivalent measure of economic achievement would, for example, equate a major stockholder of General Motors with the owner of a hot dog stand. Obviously, these are positions that are hardly equivalent. Income level does not take into account such factors as the choice of the wage earner to pick such a job or educational level. Measures such as the Warner Scale (1949) rely on subjective measures alone. Social class, or socioeconomic status, is a complex construct and needs to be determined by complex processes.

It is felt that a more complete measure of socioeconomic status needs to be used in order to generate true predictions of the effects of such status on the performance of individuals. To this end, this study will use the Hollingshead Two Factor Index of Social Position (Hollingshead, 1957). This index combines two measures of social class or standing. The first, occupational status, is used as an estimate of the skill and power an individual possesses in the society. The second measure, educational level attained, is meant to reflect cultural tastes. The scale is used in this study because of its ease in administration and because it uses two measures which seem to reflect important components of social

class. The two factors, Occupational level and Educational level, are combined to establish the parameters of five class levels (see diagram 2).

Hollingshead used a weighted formula to determine membership in these five separate classes. The weights are determined by multiple correlation techniques (Hollingshead, 1957) and are:

<u>FACTOR</u>	<u>FACTOR WEIGHT</u>
Occupation	7
Education	4

Scale scores are multiplied by these weights to yield an Index of Social Position Score. These scores range on a continuum from a low of 11 to a high of 77.

Hollingshead suggests the following Social Class breakdown according to the Index of Social Position Scores:

<u>SOCIAL CLASS</u>	<u>RANGE OF COMPUTED SCORES</u>
I	11-17
II	18-27
III	28-43
IV	44-60
V	61-77

Scale scores for Occupation and Education will be obtained from Hollingshead (1957).

DIAGRAM II\*

EDUCATION	OCCUPATIONS						
	1+ HIGHER EX. LARGE PROP. MAJOR PROF.	2+ MANAGERS MEDIUM PROP. LESSER PROF.	3+ ADMINISTRATOR SM. BUSINESS SEMI-PROF.	4+ CLERICAL SALES TECH. LIT. BUSINESS	5+ SKILLED MANUAL	6+ MACHINE OP. SEMI-SKILLED MANUAL	7+ UNSKILLED DOMESTIC
GRADUATE DEGREE 1	//// //// //// //// 1			//// //// //// //// ////	//// //// //// //// ////		
COMPLETE DEGREE 2	//// //// //// //// 1		//// //// //// //// ////	//// //// //// //// ////	//// //// //// //// ////		
PARTIAL COLLEGE 3		2	//// //// //// //// ////	//// //// //// //// ////		//// //// //// //// ////	
COMPLETE HIGH SCHOOL 4		//// //// //// //// ////	//// //// //// //// ////			//// //// //// //// ////	
EIGHTH AND NINTH GRADES 5		//// //// //// //// ////	//// //// //// //// ////			//// //// //// //// ////	
SEVENTH, EIGHTH, AND NINTH GRADES 6	//// //// //// //// ////	//// //// //// //// ////		4		//// //// //// //// ////	
LESS THAN SEVENTH GRADE 7	//// //// //// //// ////	//// //// //// //// ////			//// //// //// //// ////	//// //// //// //// ////	

\*Social Class Level as a function of Occupational and Educational Status. Taken from A. B. Hollingshead (1957).

APPENDIX III

QUESTIONNAIRE

This questionnaire is part of a study of how different kinds of people function in different situations.

As you can see, this form is numbered. This is to guarantee that your answers will be kept confidential. Your name is to be recorded on this page so, if you take part in the rest of the study, we can contact you. After that time, this page will be removed and you will be identified only by number. It will be impossible to identify your questionnaire by name.

Thank you for your cooperation.

Name \_\_\_\_\_

T. A. \_\_\_\_\_

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Your age \_\_\_\_\_ Year in School \_\_\_\_\_

Sex (Circle): M F

Grade Point Average \_\_\_\_\_

Father Living? \_\_\_\_\_ Mother Living? \_\_\_\_\_

Father's Occupation \_\_\_\_\_

Mother's Occupation \_\_\_\_\_

Last Year Father Completed in School (Circle);

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Did he Graduate from High School? \_\_\_\_\_ College? \_\_\_\_\_

Last Year Mother Completed in School (Circle):

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Did she Graduate from High School? \_\_\_\_\_ College? \_\_\_\_\_

Degrees Received:



On this and the following pages, there will be 29 pairs of statements. Please choose a statement from each pair that you feel is closest to your point of view. Circle the letter in front of your choice.

1. a. Children get into trouble because their parents punish them too much.  
b. The trouble with most children nowadays is that their parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.  
b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.  
b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run people get the respect they deserve in this world.  
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. a. The idea that teachers are unfair to students is nonsense.  
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. a. Without the right breaks one cannot be an effective leader.  
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. a. No matter how hard you try some people just don't like you.  
b. People who can't get others to like them don't understand how to get along with people.

8. a. Heredity plays the major role in determining one's personality.  
b. It is one's experiences in life which determine what they're like.
9. a. I have often found that what is going to happen will happen.  
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.  
b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.  
b. Getting a good job depends mainly on being in the right place at the right time.
12. a. The average citizen can have an influence in government decisions.  
b. This world is run by the few people in power, and there is not much the little guy can do about it.
13. a. When I make plans, I am almost certain that I can make them work.  
b. It is not always wise to plan, too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14. a. There are certain people who are just no good.  
b. There is some good in everybody.
15. a. In my case getting what I want has little or nothing to do with luck.  
b. Many times we might just as well decide what to do by flipping a coin.

16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.  
b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.  
b. By taking an active part in political and social affairs the people can control world events.
18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.  
b. There really is no such thing as "luck."
19. a. One should always be willing to admit mistakes.  
b. It is usually best to cover up one's own mistakes.
20. a. It is hard to know whether or not a person really likes you.  
b. How many friends you have depends upon how nice a person you are.
21. a. In the long run the bad things that happen to us are balanced by the good ones.  
b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. a. With enough effort we can wipe out political corruption.  
b. It is difficult for people to have much control over the things politicians do in office.
23. a. Sometimes I can't understand how teachers arrive at the grades they give.  
b. There is a direct connection between how hard I study and the grades I get.
24. a. A good leader expects people to decide for themselves what they should do.  
b. A good leader makes it clear to everybody what their jobs are.

25. a. Many times I feel that I have little influence over the things that happen to me.
- b. It is impossible for me to believe that chance or luck plays an important part in my life.
26. a. People are lonely because they don't try to be friendly.
- b. There's not much use in trying too hard to please people, if they like you, they like you.
27. a. There is too much emphasis on athletics in high school.
- b. Team sports are an excellent way to build character.
28. a. What happens to me is my own doing.
- b. Sometimes I feel that I don't have enough control over the direction my life is taking.
29. a. Most of the time I can't understand why politicians behave the way they do.
- b. In the long run the people are responsible for bad government on a national as well as a local level.

APPENDIX IV

PERSONAL CONTROL AND  
CONTROL IDEOLOGY

Joe (1974) described a factor analysis done on the I-E Scale which rendered the two factors of Personal Control and Control Ideology.

A person high in Personal Control, according to Joe, would perceive successful outcomes as determined by internal sources while a person low in Personal Control would perceive successful outcomes as determined by luck. By definition, this factor appears to define that which is defined in this study as locus of control.

A person high in Control Ideology, on the other hand, believes that most people in society are successful because of internal sources while a person low in Control Ideology perceives most people's success as due to luck. The emphasis in this definition should be placed on the phrase "most people." The individual does not necessarily internalize this belief; he may not group himself with "most people." Control Ideology seems to tap an impersonal locus of control.

In a post hoc analysis it was expected that these two factors might be more closely related to social class than was locus of control and that the Personal Control dichotomy might have a mere significant effect in the analyses of variance than did locus of control.

APPENDIX V

INSTRUCTIONAL SETS

## CHANCE INSTRUCTIONAL SET

This is a game of chance. You may have seen this game before. Today we are going to play it in such a way that it is a game of chance. The goal of the game is to score as few points as possible. As you can see, the board has eleven numbers ranging from one to eleven. You are to roll these dice. Each time you roll, you have to turn down numbers on the board that add up to the number you have rolled. For instance, if you roll an 11, you can turn down a ten and a one, a nine and a two, an eight and a three, or a one, two, three, and a five. However, you cannot turn down numbers that have already been turned down. You keep rolling until you cannot turn down the right numbers to add up to the number you roll. The idea is to leave as small a sum on the board as possible.

It may appear as though there is some skill involved in the decision about which blocks you should turn down but success really depends on the roll of the dice. We have found that over the long run, it just doesn't matter what kind of strategy you follow. It all depends on luck and how the dice come up.

Remember, the goal of the game is to leave as few points as possible remaining on the board. Let's try it.

## SKILL INSTRUCTIONAL SET

This is a game of skill. You may have seen this game before. Today we are going to play it in such a way that it is a game of skill. The goal of the game is to score as few points as possible. As you can see, the board has eleven numbers ranging from one to eleven. You are to roll these dice. Each time you roll, you have to turn down numbers on the board that add up to the number you have rolled. For instance, if you roll an 11, you can turn down a ten and a one, a nine and a two, an eight and a three, or a one, two, three, and five. However, you cannot turn down numbers that have already been turned down. You keep rolling until you cannot turn down the right numbers to add up to the number you roll. The idea is to leave as small a sum on the board as possible.

It may appear that doing well in this game is all a matter of luck but there is a lot of skill involved in making decisions about which blocks you should turn down. Wise choices and a good strategy lead to a better performance in the game. We have found that good choices about which blocks are turned down and in what order lead to better scores. So you see, your success in this game depends on skill.

Remember, the goal of the game is to leave as few points as possible remaining on the board. Let's try it.



NO INSTRUCTIONAL SET

You may have seen this game before. The goal of the game is to score as few points as possible. As you can see, the board has eleven numbers ranging from one to eleven. You are to roll these dice. Each time you roll, you have to turn down numbers on the board that add up to the number you have rolled. For instance, if you roll an 11, you can turn down a ten and a one, a nine and a two, an eight and a three, or a one, two, three, and a five. However, you cannot turn down numbers that have already been turned down. You keep rolling until you cannot turn down the right numbers to add up to the number you roll. The idea is to leave as small a sum on the board as possible. Let's try it.

APPENDIX VI

TASK RESPONSE RECORDING SHEETS

P E T

1.	_____	_____	_____
(NO.)			
2.	_____	_____	_____
(S.C.)			
3.	_____	_____	_____
(L.C.)			
4.	_____	_____	_____
(SET)			
5.	_____	_____	_____

\_\_\_\_\_  
(DATE)

\_\_\_\_\_  
(TIME)

GAMBLING? \_\_\_\_\_

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_

APPENDIX VII

SUBJECT DEBRIEFING LETTER

## TO MALES IN PSYCHOLOGY 110

This quarter, men in Psychology 110 were administered a questionnaire for the SCHULTZ study. They were asked to report their parents' occupational and educational levels. The questionnaire also contained 29 multiple choice questions.

The 29 questions were used to determine locus of control. Locus of control is a dimension which measures an individual's belief that he has control over his environment or that luck controls his success in various tasks. Previous studies have found a relationship between subjects' income levels and their locus of control such that people with lower incomes trusted luck more than their own skill. No such relationship was found between parental occupational and educational levels and locus of control in this study.

Subjects were recruited, later in this quarter, according to their locus of control and occupational levels to participate in an experimental task in which they were asked to play a dice game. These subjects were told that success in the game was due to chance or to their skill or to neither of these two factors. Thus, one of the major variables in this study was the manipulation of instructional set.

It was expected that instructional set would interact with parental characteristics and the individual's locus of control in such a way that subjects who relied on luck and subjects whose parents had relatively lower occupational and educational characteristics would expect to do better when told that the game was controlled by chance than they would when told that the game was controlled by the player's skill. The opposite prediction was posed for subjects whose parents had more education and higher occupational statuses. These predictions were not supported.

People who trust in luck were previously found to engage in atypical shifts in expectation. An atypical shift in expectation occurs when a person expects to fail after a success or succeed after failing. An interaction was found for this variable in this study such that persons who trusted in luck and whose parents had more education and higher occupational status and persons who trusted in skill and whose parents had less education and lower educational statuses exhibited the most atypical shifts.

If you participated in this study, your locus of control as measured earlier in the quarter and your parents' occupational

and educational levels were kept confidential. All lists with names on them have been destroyed and data has only been identified by numbers for the statistical analysis.

I appreciate your cooperation in this study.

Thank you.

Dan Schultz