

CONFORMING, COUNTER-CONFORMING AND INDEPENDENT BEHAVIOR  
AS A FUNCTION OF LOCUS OF CONTROL EXPECTANCIES

by

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### Abstract

Previous research has indicated that an individual's behavior in a social influence situation is in part determined by the person's tendency to perceive the source of reinforcement to be internalized or externalized. A review of the literature pertaining to such locus-of-control expectancies and reference to the cognitive development theory of Harvey, Hunt and Schroder (1961) suggest that responses to social influence are affected by an individual's locus-of-control expectancies. Thus, persons who generally expect personal control of reinforcements (internals) were hypothesized to be counter-conforming, being resistive to, and defending against, attempts at social influence regardless of how competent the influencer is. Persons who generally expect reinforcements to be controlled by forces outside of themselves (externals) were hypothesized to be conforming, being susceptible to social influence regardless of the competence of the influencer. Persons without strong expectancies concerning locus of control (moderates) were hypothesized to be independent, being influenced when the influencer was competent but not when the influencer was not competent.

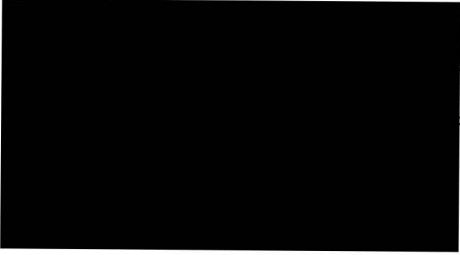
In the present study, subjects were grouped according to their scores on the I-E scale, developed by Rotter (1966) to measure individual differences in locus-of-control expectancies. Twenty-two internals, moderates and externals were selected according to their scores on the I-E scale and assigned to either the subject-accurate or partner-accurate condition.

The experimental task was of a perceptual nature, subjects having to judge the distance between pairs of lights. Each subject made an initial set of judgments, after which he received feedback concerning the judgments of a partner performing on the same task. In one experimental condition, subjects were given feedback indicating that they were more accurate in their judgments than the partner (subject-accurate), while in the other experimental condition, feedback was given indicating that the partner was more accurate (partner-accurate). Each subject then had the opportunity to examine his partner's judgments and make a second set of judgments on the same pairs of lights. A measure was then taken of how much each subject tended to change his judgments to agree with the partner (congruency) along with measures of the subject's ratings of the partner's competence and trustworthiness and the skill-determination of the task.

It was hypothesized that the subjects would be more influenced by the partner's judgments in the partner-accurate condition than in the subject-accurate condition and that the subjects would tend to rate the partner as being more competent and trustworthy in the former condition. Only the congruency scores and ratings of the partner given by the moderates were hypothesized to increase from the subject-accurate to the partner-accurate condition, these measures for the internals and externals being hypothesized to remain low and high, respectively, across both accuracy conditions. Ratings of the task as being determined by chance were hypothesized to increase from the subject-accurate to the partner-accurate condition for the internals,

the ratings given by the moderates and externals remaining low and high respectively.

The results showed that subjects tended to be more influenced when the partner was presented as being competent than when he was presented as not being competent. Ratings of the partner's competence and trustworthiness also increased. The hypothesized interactions between locus of control and perceived accuracy were not obtained, all subjects being more influenced in the partner-accurate condition than in the subject-accurate condition. Across both accuracy conditions, the internals tended to be more influenced by the partner's judgments than either the moderates or the externals. This finding was unexpected, and several post hoc explanations were offered to account for these differences.



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## CHAPTER I

### Introduction

Rotter's social learning theory (Rotter, 1954) states that behavior is not only directional, in terms of goals and needs, but anticipatory. That is, individuals anticipate the consequences of their behavior in terms of probable rewards and punishments. Specifically, the potential for the occurrence of a behavior within a situation is a function of the value of the reinforcements available within that situation and the expectancy which the individuals holds that his behavior will lead to these reinforcements.

Within Rotter's theory, expectancies are of a probabilistic nature and are a function of two factors: the history of previous reinforcements in the same situation and the generalization of similar behavior-reinforcement sequences in other situations. As people mature, expectancies concerning the locus of control of reinforcements develop. That is, expectancies develop as to whether the reinforcements available within a situation are contingent upon one's own behavior (skill) or upon some source of control which is external to oneself (chance).

Several studies (James & Rotter, 1958; Phares, 1957; Rotter, Liverant & Crowne, 1961) have shown that an individual's behavior, specifically the acquisition and extinction of verbalized expectancies, depends upon whether a task is administered under conditions of skill or chance. Under conditions of skill, behavior is more dependent upon past experience (learning) as evidenced by decrements in verbalized expectancies following failure and increments following success. Under conditions of chance, wherein there is limited

personal control over outcomes, behavior tends to be less dependent upon past experience as evidenced by increments in expectancies following failure and decrements following success. This is commonly referred to as the "gambler's fallacy."

Expectancies acquired in particular situations may generalize to other situations which are perceived as being similar (Chance, 1952; Crandall, 1950; Jessor, 1951). Rotter, Seeman and Liverant (1962) have found that individuals differ in the extent to which they hold strong generalized expectancies concerning locus of control of reinforcements. Rotter (1966) has published a scale designed to measure the extent to which individuals hold generalized expectancies concerning the locus of control of reinforcements called the Internal-External Locus of Control Scale (I-E scale). Individuals scoring low on this scale (internals) generally expect the events around them to be under their own control, while individuals scoring high on this scale (externals) tend to see these same events as being out of their control and in the control of outside forces (chance, luck, powerful others). Internals tend to perform on a task in much the same way as individuals performing a task under skill instructions while externals tend to perform as if a task were based upon chance. For a more comprehensive review of the validity and reliability of the I-E scale, see Lefcourt (1966) and Rotter (1966) as well as Appendix A.

The relationship between locus of control of reinforcement-expectancies and social influence has been examined, and the findings indicate generally that internals exhibit less conformity and are

more resistant to social influence than externals. Odell (1959), using an earlier measure of locus of control-expectancies, found that internals tended to be significantly more independent (nonconforming) than externals. Crowne and Liverant (1962) found that internals, when allowed to bet on their judgments, were significantly less conforming in an Asch-type situation than externals. Several studies (Getter, 1963; Gore, 1962; Strickland, 1962) have demonstrated that internals are more resistant to subtle manipulation in the form of verbal conditioning than externals, although Baron (1969) failed to replicate these findings.

Recent research in the area of conformity has pointed to the distinction between two types of nonconforming behavior, counterconformity and independence. Counterconforming behavior is defined as behavior which tends to move in a direction opposite to that of an influencing agent or generally accepted norms. The individual who counterconforms is motivated to oppose outside opinion regardless of its content or validity.

There has been some disagreement as to what constitutes independent behavior. Webster's Dictionary (1962) defines independence as "...free from influence, persuasion or bias; self-determined, self-confident, or self-reliant: as independent thinking...(p. 741)." Willis (1963, 1965) and Willis and Hollander (1964) agree with Webster and define independent behavior as the assignment of a zero "weight" to external opinions in coming to a decision. The independent person is therefore cognizant of external opinion but does not use it as a guide for his behavior. As Willis (1965)

states, the independent person "...sticks to his guns...(p. 379)."

Independent behavior, however, has also been defined as behavior which involves the consideration of both personal evaluations and external sources of opinion in coming to a decision (Smith, 1967). In other words, the independent person will go along with the majority opinion in some instances but not in others.

Kretch, Crutchfield and Ballachey (1962) imply a similar notion of independent behavior when they state that the independent person "...makes up his own mind, being able to 'take the group...or leave it' as his own good sense would dictate (p. 507)."

Perhaps the most definitive account of independent behavior (called "interdependent" behavior) comes from the cognitive development theory of Harvey, Hunt and Schroder (1961). Interdependent behavior is described by Harvey et al. in the following manner:

Development within this system involves (1) reliance upon independent exploratory behavior, (2) a more veridical perception of other person's standards, and (3) informational standards that are interdependent on, and open to, a variety of influences (p. 194).

People who are truly independent are able to separate the source from the source's statement thus enabling the person to react to the informational content of the statement rather than towards the source himself. As a result, independent persons are able to discriminate positive and negative feedback which they can then use in readjusting their performance. They are also open to information from persons who are more competent and able to provide information useful and relevant to the situation at hand. This is

especially likely to occur in situations where the subject is not perfectly sure of his judgments (i.e., the task is difficult; the subject has a low level of competence in an area; the stimuli to be judged are ambiguous). The independent person, according to this interpretation, is able to utilize all sources of information, personal and extrapersonal and feels that this will enable him to adjust to all situations.

The studies mentioned above tend to show that internals are more nonconforming than externals. The question is raised as to which type of nonconforming behavior internals are exhibiting. Rotter (1966) predicted that internals would be more resistive to outside influence than externals since it would deprive them of some of the control of the environment which they feel they have. He qualified this by saying that internals will conform, however, in situations in which they perceive conformity as being advantageous or pragmatic. As Rotter (1966) says, "...the individual who has a strong belief that he can control his own destiny is likely to (a) be more alert to those aspects of the environment which provide useful information for his future behavior...(p. 25)." Accepting the definition of independent behavior advocated by Harvey et al. (1961), Rotter is predicting that internals are independent.

There are several studies, however, which indicate that internals do not utilize all sources of relevant information in a situation and that their nonconforming behavior may be of a counterconforming nature. Julian and Katz (1968) found that, in a competitive problem-solving situation, internals preferred to

rely upon strategies that involved reliance upon their own personal judgments rather than upon strategies involving reliance upon another person's judgments. This was found to be the case even though the other person was more accurate on the task and even though the same number of points could be obtained for being correct by either using one's own personal judgments or the judgments of the other person. Thus, from a pragmatic point of view, reliance upon one's own judgments was inappropriate in this situation.

Lefcourt (1967) found that internals displayed less responsiveness to external cue-explication than externals; with more explicit directions, externals showed an improvement in task performance while the internals did not. In fact, the externals improved to the point where they performed more adequately than the internals. There is the possibility that the performance of the internals was superior enough initially that improvement was not possible, but there is also the possibility that the internals chose to ignore the directions and maintain their initial manner of performing.

Harvey et al. (1961) termed counterconformity as "negative independence." Negative independence involves the devaluation of external control and a lack of trust in external criteria. This type of behavior is thought to be brought about by a previous history of contact with powerful authority figures (or persons whom the individual is forced to depend upon, exemplified by parent-child relations) who were either punishing or unreliable. When placed in refuting situations, situations which demand or imply reliance upon

external control or criteria, negatively independent individuals fail to perceive, or are incapable of utilizing, information from outside sources and may behave in a manner which is contrary to that of the influencing agent. Such individuals also tend to deprecate the source of influence or control by describing the source in distrusting terms or by projecting malevolent intentions on to him. They will also tend to externalize the blame for failures, or deny them when confronted with negative or contrary opinions.

There are some findings concerning the behavioral and personality correlates of internals which may be of a counter-conforming nature. Internals tend to display avoidant and defensive behavior in situations where there is little chance for personal control. Thus, Lefcourt, Lewis and Silverman (1968) found that internals, when forced to operate within a chance situation, attempted to construe the task as being skill-determined and exhibited an increase in task-irrelevant thoughts and behaviors. Davis and Phares (1967) found that internals sought significantly less information within a chance situation than they did within a skill or ambiguous situation. Efran (1963) and Lipp, Kolstoe and Randall (1967) have found that internals tend to deny information concerning failure to a greater extent than externals.

Several studies (Gold, 1967; Rotter & Mulry, 1965; Schneider, 1968) have found that internals tend to value skill situations more so than chance situations. Internals also have a high concern for demonstrating personal control of their environment (Strodbeck,

1958) and have a high need for autonomy (Hersch & Scheibe, 1967). Sofer (1956) has pointed out that autonomy may represent a need for power or mastery and/or an asocial tendency to be afraid of being influenced by others.

The purpose of the present paper is to clarify the relationship between locus of control-expectancies and conformity. As stated above, the independent person will conform in some instances and not in others. This will depend upon the information which the influencing agent is disseminating and upon the situation. If the information is useful and relevant and if the person is in a situation where he is not sure of his judgments, the independent person will conform. Conforming and counterconforming behavior on the other hand are not dependent upon the informational content of the influencing message. Asch (1956) has shown that conformists will conform regardless of whether the influencing agent is realistic or accurate and Hunt and Schroder (1958) have found that counterconformists will tend to oppose the influencer regardless of the message he is disseminating.

It is hypothesized generally that externals will conform in a social influence situation. Since externals expect, theoretically, the events around them to be controlled by external factors and since they tend to perform more adequately when the need for self-reliance is minimal (Cromwell, Rosenthal, Shakow & Kahn, 1961), it is predicted that externals will conform regardless of the salience of the information disseminated by the influencing agent.

It is also hypothesized that internals will counterconform in

a social influence situation. Due to the findings that internals do not utilize information from outside sources and that they display avoidant and defensive behavior in situations where personal control is limited, it is generally hypothesized that a strong belief in internal control of reinforcement serves as a mechanism for maintaining independence from external sources of control. This will motivate internals not to conform in social influence situations, regardless of the information offered by the influencing agent, and to display behaviors of a negatively independent nature.

It is also hypothesized that individuals with no strong generalized expectancies concerning locus of control of reinforcements will display independent behavior in a social influence situation. That is, they will conform when it is necessary to cope adequately with a situations but will not when it is not. It is theorized that strong generalized expectancies will tend to "blind" individuals to the contingencies available within a particular situation due to the fact that they are reacting more upon past experience (or pre-determined expectancies) than to the cues present within the situation. Bandt (1967) found some evidence to support this position in that subject with high generalized expectancies concerning locus of control of reinforcements (both internals and externals) tended not to react differently to a change in discriminative stimuli within a new situation while those subjects with intermediate generalized expectancies did.

## CHAPTER II

## Method

General Design

A situation was created in which subjects, selected according to their generalized expectancies concerning locus of control of reinforcements, could evaluate, and possibly modify, their judgments on a perceptual task (see p. 12) after being exposed to the judgments of a partner who was performing on the same task. The experiment was presented to the subjects as an attempt to see how the accuracy of perceptual judgments is affected by having two observers (instead of just one) judge the same stimuli. The subjects were instructed that their prime responsibility was to make judgments of the highest possible accuracy and that they could take as much advantage of the other subject's judgments as they felt necessary.

Subjects reported to the experiment in pairs and were allowed to make an initial set of judgments, independently, on the same set of stimuli. After this, each subject in the pair was given manipulated feedback as to the accuracy of his judgments, the judgments of his partner and the accuracy of his partner's judgments. In one experimental condition, subjects received manipulated feedback indicating that their partner was less accurate in his judgments and in the other condition that the partner was more accurate in his judgments. It was thus possible to observe whether the subject changed his judgments and whether these changes resulted in more or less agreement with the partner's judgments.

## Subjects

One hundred and twenty-eight undergraduate students enrolled in an introductory course in psychology constituted the subject pool for the experiment. All subjects had previously completed the 29-item, forced-choice version of the I-E Scale (Rotter, 1966). For a more complete description of the scale see Appendix A. From this pool, a sample of 22 subjects, 10 male and 12 female, was selected whose I-E scores fell at least 2 points below the mean of the total sample (lower 22.4% of the distribution). These subjects were classified as having strong generalized expectancies for internal control of reinforcements (internals). Another sample of 22 subjects, 11 male and 11 female, was selected whose I-E scores fell at least 2 points above the mean of the total sample (upper 22.4% of the distribution). These subjects were classified as having strong generalized expectancies for external control of reinforcements (externals). Finally, another sample of 22 subjects, 9 males and 13 females, was selected whose I-E scores were within  $\pm 1$  point from the total sample mean ( $\pm .26$  SD). These subjects were classified as having no strong generalized expectancies concerning either internal or external control of reinforcement (moderates). Eleven subjects were selected randomly from each of these samples and assigned randomly to each of the experimental conditions. All subjects served on a voluntary basis, receiving neither course credit nor monetary reward.

Table 1 presents the means and standard deviations of the I-E scores for the total subject pool as well as for the internal,

moderate and external samples. T-tests indicate that there were no significant differences between men and women on the I-E scale within either the total subject pool or within the three samples and as a consequence, measures for males and females were combined and analyzed together.

Table 1

Internal-External Control Scores  
For the Subject Pool and Final Samples

Sample	n	$\bar{X}$	S.D.
Total Subject Pool	128	10.88	3.82
males	66	10.72	3.14
females	62	11.04	4.45
Internals	22	6.09	1.53
males	10	6.00	1.24
females	12	6.25	1.81
Moderates	22	10.95	0.89
males	11	11.00	0.77
females	11	10.90	1.04
Externals	22	16.31	2.16
males	9	15.44	2.18
females	13	17.00	2.12

### Apparatus

The apparatus consisted of a vertical bar, 3 ft. from the floor, upon which were mounted a series of 10 lights, each 6 inches apart. Each of the lights was covered by a shade with a small aperture in the center. This permitted a small beam of light to be emitted which would allow for accurate judgments concerning the distance between any two points of light. Each of the lights was

connected to a control panel consisting of 10 switches which, when pulled, would turn on their respective lights. The overall apparatus was covered when the subjects entered the room to prevent their seeing the number of lights or their arrangement on the panel.

#### Experimental Manipulations

Each subject made two sets of judgments concerning the distances between the pairs of lights presented to him. The subject made his first judgments without any information from the partner or the experimenter. The second judgments were made by the subject after being exposed to manipulated feedback concerning the partner's judgments and their accuracy. Feedback was manipulated in two ways. First, an artificial set of judgments was substituted for the partner's actual set of initial judgments in order to establish a discrepancy between the subject's initial set of judgments and those of his partner. In order to create a discrepancy of a realistic nature and in order to reduce the possibility that the subjects would see the discrepancy as being systematic and thus contrived, the artificial set of judgments was determined by adding or subtracting to each of the subject's initial judgments, the quantities 4, 6 and 8 inches. Three additions and three subtractions were made using each of the values thus creating an artificial series of 18 judgments constantly different from the subject's initial set of judgments.

A second manipulation involved feedback concerning the accuracy of both the subject's and partner's judgments. In order to maximize the potential for modifying all 18 judgments an average

error term was used to indicate accuracy such that the subjects would not be able to determine exactly which of his 18 initial judgments were inaccurate. The lower the average amount of error per judgment, the more accurate the judgments.

The accuracy of both the subject and the partner was indicated on scales, at the bottom of the recording sheets, ranging from zero to six inches of average error per judgment. The accuracy of the subject was presented on one scale, while the accuracy of the partner was presented on another scale just below that of the subject's. It was felt that this would force the subject to compare his accuracy with that of his partner. It was at this point that the two experimental conditions were established. In one condition, the subject was led to believe that he was more accurate in his judgments than the partner (subject-accurate condition). This was accomplished by giving him feedback that his average error was 1.3 inches per judgment while his partner's average error per judgment was 4.7 inches. These two values were arbitrarily selected to create a discrepancy in accuracy. In the other experimental condition, the subject was led to believe that he was less accurate than his partner (partner-accurate condition) by giving him feedback that his average error per judgment was 4.7 inches while that of his partner was only 1.3 inches.

#### Procedure

Subjects reported to the experiment in pairs. In view of the findings by Rosenthal and his associates (Rosenthal, 1964) concerning experimenter bias, assignment to conditions was handled by an

associate so that the experimenter was unaware of the classification of the subjects when the data were collected.

Several authors (Back, 1951; Sampson & Inske, 1964) have shown that there is a positive relationship between the amount of interpersonal attraction and social influence. Although neither of these studies dealt directly with the sex of the influencer and influencee, it is assumed that there would be more interpersonal attraction amongst opposite sex-dyads and that the chances of social influence would be increased if the influencer and influencee were of opposite sex. To control for this possibility, pairs of subjects in the experimental sessions were of the same sex.

The subjects were ushered into the experimental room and were seated approximately 10 feet away from the apparatus. A barrier separated the subjects from each other. The experiment was introduced in the following manner:

The purpose of this experiment is to examine how the accuracy of individual judgments is affected by having two observers judge the same set of stimuli instead of just one. You will be presented with a series of 18 pairs of lights, and your task will be to judge the distance between them. On the first presentation of the lights, you will record your judgments on the sheets provided, entering them in the first column. At this time, neither of you will have any information concerning the judgments of the other. Your prime responsibility is to make judgments of the highest possible accuracy.

After completing this initial set of judgments, you will return your answer sheets to the experimenter who will then score the accuracy of your judgments. At the same time, the judgments of your partner will be recorded in the second column of your answer sheet along with their accuracy. After this, your answer sheets will be returned for your examination upon which a second set of judgments will be made utilizing the exact same set of lights.

Remember, your prime responsibility is to make judgments of the highest possible accuracy. Each pair of lights will remain on for approximately 5 seconds so that you will have ample enough time to make your judgments. Record your judgments in inches (this is emphasized). Please do not communicate with your partner during any part of the experiment. Are there any questions?

The subjects were then presented the series of 18 pairs of lights. The 18 pairs of lights and their respective distances apart are presented in Table 2, the distances being chosen randomly. Each subject recorded his judgments independently on the recording sheets provided (see Appendix B) after which the sheets were returned to the experimenter. At this time, manipulation of both discrepancy

Table 2

The Eighteen Combinations of  
Lights and Their Respective Distances

Combination		Distance
1.	5-10	30 in.
2.	3-5	12 in.
3.	1-10	60 in.
4.	8-9	6 in.
5.	4-10	36 in.
6.	1-9	54 in.
7.	8-10	12 in.
8.	1-6	36 in.
9.	5-8	18 in.
10.	1-4	18 in.
11.	3-8	30 in.
12.	3-10	42 in.
13.	1-8	48 in.
14.	6-10	24 in.
15.	1-3	18 in.
16.	3-7	24 in.
17.	1-7	42 in.
18.	6-9	18 in.

and accuracy took place. The scoring sheets were then returned to the subjects and the following instructions were read:

The following information is recorded on your answer sheets. In the first column are your initial set of judgments. In the second column you will find your partner's judgments which I have recorded. The accuracy of both you and your partner is presented at the bottom of the page. Accuracy is in terms of the average amount of error, in inches, on each judgment. The accuracy of both you and your partner is indicated on a scale ranging from zero to six inches of average error. Your own accuracy is presented on the top scale while the accuracy of your partner is presented on the scale below. By comparing the two scales, you will get some information as to your accuracy compared to that of your partner. Remember, the higher the average amount of error per judgment, the lower the accuracy.

Now we will make a second set of judgments on the same lights. Mark your judgments this time in the third column. You may now make as much use of your partner's judgments as you think necessary in order for you to make judgments of the highest possible accuracy. Try to obtain the lowest amount of average error per judgment as possible and you may use your partner's judgments as much as you feel it necessary in order to do this. Are there any questions?

The subjects were then shown the 18 pairs of lights for a second time upon which they made a second set of judgments. Upon completion of this task, each subject was asked to rate (1) how competent his partner was, (2) how much he trusted his partner and (3) his own perception of the task as being determined by luck or skill.

#### Dependent Measures

The subject's second set of judgments was scored according to whether they resulted in greater or less agreement (subsequently called "congruence") with the artificial judgments they believed

belonged to their partner. Each judgment was measured in terms of how much it changed from its initial value and was given a plus value if it moved in the direction of the corresponding artificial judgment and a minus value if it moved in a direction away from this same corresponding judgment. These measures were then summed over all 18 judgments and constituted the congruency score. Thus, if a subject showed an overall tendency to modify his judgments in the direction of his partner's judgments, he received a high positive congruency score. If he tended to move away from the partner's judgments, he received a high negative congruency score. Finally, if he showed a tendency to maintain his initial judgments, he received a score near zero.

Two measures were obtained of how much the subject tended to trust his partner during the experiment. One entailed the subject rating how much he had trusted the partner's judgments on a 7-point scale, zero being defined as "little trust" and six being defined as "high trust." A second measure of trust was obtained by asking the subject to describe his partner's performance on the task by checking off those adjectives from a list which he felt applied to his partner's performance. These adjectives, taken from the Adjective Check List (Gough & Heilbrun, 1965), had previously been rated on the dimension of trustworthiness, utilizing a technique similar to that used by Anderson (1965). For a complete description of the procedure and the final adjective check list see Appendix C. A measure of trust was obtained by summing the trust ratings of the adjectives checked off by the subject and computing their average.

Each subject was asked to check off at least three adjectives from the list.

Each subject was also asked to rate his partner's competency on the task. He was asked to rate this on a 7-point scale with zero being defined as "very competent" and six being defined as "very incompetent." Each subject was also asked to rate the experimental task on the dimension of luck-skill. He rated this dimension on a 7-point scale with zero being defined as "luck" and six being defined as "skill."

#### Experimental Predictions

The first set of hypotheses are concerned with the effects of perceived accuracy upon social influence. These hypotheses serve as a manipulation check to assure that the two experimental conditions, in which either the subject or the partner is perceived as being more accurate, were established.

Hypothesis 1A. It is predicted that when the partner is presented as being more accurate in his judgments than the subject, the partner will be perceived as being more competent than when the partner is less accurate in his judgments.

Hypothesis 1B. It is predicted that the partner will be perceived as being more trustworthy in the partner-accurate condition than in the subject-accurate condition, where trustworthiness is measured by the average scaled trust-value of the adjectives used to describe the partner and by ratings on the 7-point, Likert-type scale of trustworthiness.

Hypothesis 1C. It is predicted that when the partner is

perceived as being more accurate in his judgments than the subject, the latter will be more likely to change his initial judgments in the direction of those of his partner than when the subject is seen as being more accurate than the partner. The resulting amount of increase in agreement brought about by changes in judgments is termed "congruence."

Hypothesis 1D. It is hypothesized that the ratings of competence and trustworthiness as well as the measure of congruence will, taken as a set of measures, be higher in the partner-accurate condition than in the subject-accurate condition.

A second set of hypotheses are concerned with the main effects of locus of control upon social influence and, more importantly, the effects of the interaction between locus of control and perceived accuracy upon social influence. The predicted interactions are presented in Figures 1a and 1b.

Hypothesis 2A. It is predicted that the congruency scores of the internals will be lower than those of the externals with the congruency scores of the moderates falling between those of the internals and externals.

Hypothesis 2B. It is predicted that, across both accuracy conditions, the internals will demonstrate lower ratings of the partner's competence than will the moderates and the externals, in that order.

Hypothesis 2C. It is predicted that across both accuracy conditions, the internals will rate the partner as being less trustworthy than will the moderates and the externals in that order.

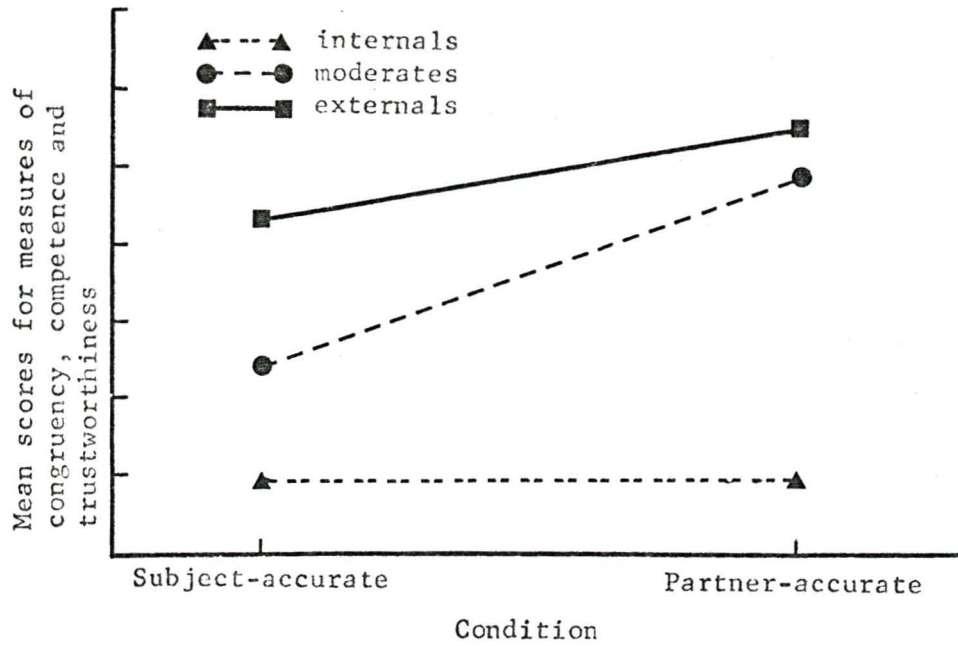


Figure 1a. Experimental predictions concerning measures of congruency and ratings of the partner's competence and trustworthiness.

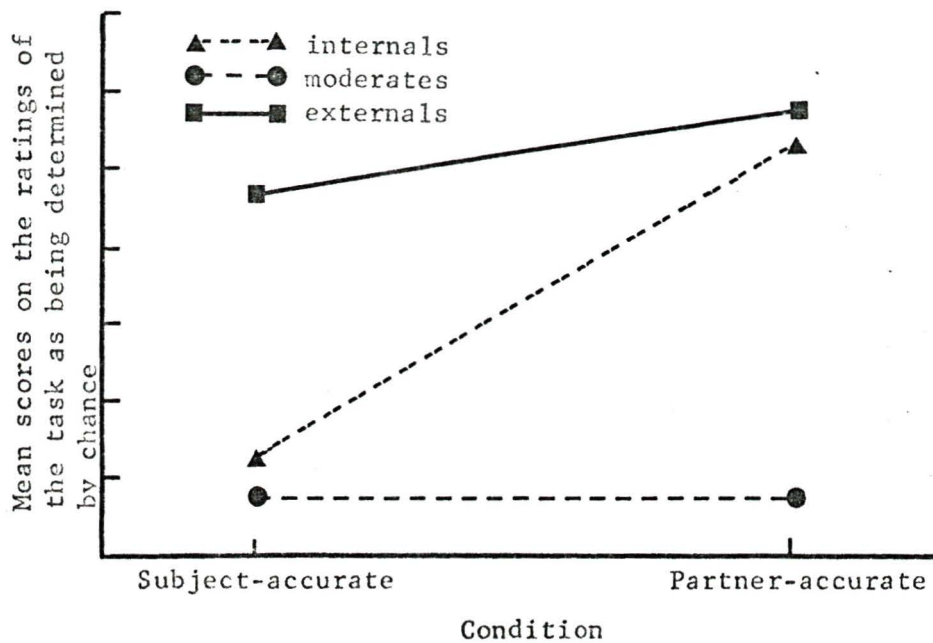


Figure 1b. Experimental predictions concerning the ratings of the task as being determined by chance.

This will be the case with both the mean scaled trust-value of the adjectives used to describe the partner and the Likert-type scale of trustworthiness.

Hypothesis 2D. It is predicted that there will be an overall negative relationship between the degree to which an individual feels externally controlled and the degree to which he will rate the task as being one of skill.

Hypothesis 2E. It is predicted that manipulated accuracy will only have an effect upon the congruency scores of the moderates and the congruency scores of the internals and externals will remain low and high, respectively, across both subject-accurate and partner-accurate conditions.

Hypothesis 2F. It is predicted that the accuracy manipulation will only effect the moderate's ratings of the partner's competence and that the ratings given by the internals and externals will not be affected. The ratings of the partner's competence are predicted to increase from the subject-accurate to the partner-accurate condition for the moderate subject group, but the ratings given by the internals and externals will remain low and high, respectively, across both conditions.

Hypothesis 2G. The prediction is made that only the mean ratings of the partner's trustworthiness given by the moderates will show an increase from the subject-accurate to the partner-accurate condition. The mean ratings given by the internals and externals are predicted to remain low and high, respectively, across both accuracy conditions.

Hypothesis 2H. It is predicted that the externals will perceive the task as being based upon chance and that the moderates will see the task as being based upon skill, regardless of who is more accurate, the subject or the partner. The internals, on the other hand, are predicted to see the task as being based upon skill in the subject-accurate condition and based upon chance in the partner-accurate condition (see specifically Figure 1b).

## CHAPTER III

## Results

The Effects of Perceived Accuracy Upon Social Influence

The first set of hypotheses deal with the effects of manipulated accuracy upon the degree of social influence and upon the perceptions of the influencing agent. In the present study, the accuracy of a subject's judgments was manipulated so that he appeared to be either more (subject-accurate) or less (partner-accurate) accurate than a partner performing on the same task.

Hypothesis 1A. It was predicted that if the judgments of the partner are presented as being more accurate than those of the subject, the partner is more likely to be perceived by the subject as being competent than when the partner is less accurate. Mean ratings of the partner's competence are presented in Table 3. Mean ratings of the partner's competence are significantly higher in the partner-accurate condition than in the subject-accurate condition. The percentage of variance associated with this effect, estimated from  $\eta^2$ , is 24.0.

Hypothesis 1B. It was predicted that the partner would be perceived as being more trustworthy in the partner-accurate condition than in the subject-accurate condition where trustworthiness is measured by the average scaled trust-value of the adjectives used to describe the partner and by the 7-point, Likert-type scale of trustworthiness. The mean scaled trust-values of the adjectives are presented in Table 3. The average scaled trust-value of the adjectives used to describe the partner are

Table 3

Means for the Four Dependent Measures in the Subject-Accurate and Partner-Accurate Conditions Along with Their Associated F-ratios, Probability levels,  $\text{Eta}^2$ , and Standardized Discriminant Function Coefficients

Dependent Measure	Mean Score Subject-Accurate Condition (n = 33)	Mean Score Partner-Accurate Condition (n = 33)	F-ratio (df = 1,65)	Probability Of Difference Less Than	$\text{Eta}^2$	Standardized Discriminant Function Coefficient
Ratings of the partner's competence	2.77	3.86	20.75	.001	.240	0.606
Trust-value of adjectives used to describe the partner	3.12	4.04	14.50	.001	.188	0.422
Scale ratings of partner's trustworthiness	2.26	2.80	3.42	ns	.051	-0.048
Congruency of Initial judgment changes	8.81	21.42	10.46	.002	.137	0.455

significantly higher in the partner-accurate than in the subject-accurate condition. The percentage of variance associated with this effect is 18.8.

Mean ratings of the partner's trustworthiness, measured by the Likert-type scale, were not significantly different between the subject-accurate and partner-accurate conditions (see Table 3). The product-moment correlation coefficient between the average scaled trust-value of the adjectives used to describe the partner and the Likert-type scale ratings of trustworthiness was 0.24, this relationship being non-significant.

Hypothesis 1C. It was predicted that when the partner is perceived as more accurate in his judgments than the subject, the latter will be more likely to change his initial judgments in the direction of those of his partner than when the subject is seen as more accurate than the partner. The resulting similarity in judgments is called "congruency" in the present study. The mean congruency scores for both accuracy conditions are presented in Table 3. Significantly higher mean congruency-scores were obtained in the partner-accurate condition than in the subject-accurate condition. The percentage of variance associated with this effect was 13.7.

In order to check whether the manipulations had been successful in establishing differential accuracy between the subject and his partner (thus establishing an influencing situation), it was hypothesized that the ratings of competence and trustworthiness and the measure of congruency would, taken as a set, significantly

discriminate between accuracy conditions. To test this hypothesis, (hypothesis 1D), a multivariate F-ratio was computed. This tests the significance of the discriminant function that best discriminates between conditions with the discriminating power of any one variable being indicated by its standardized discriminant function coefficient. The multivariate F-ratio, using Wilk's lambda criterion (Rulon & Brooks, 1968), was significant ( $F = 7.81$ ,  $df = 5,57$ ,  $p < .001$ ), indicating that the dependent measures of partner's competence and trustworthiness and of congruency were significantly able, as a set, to discriminate between the subject-accurate and the partner-accurate conditions.

The standardized discriminant function coefficients are listed in the last column of Table 3. As indicated by these coefficients, ratings of the partner's competence was the most powerful discriminator of conditions, followed by congruency-scores and ratings of the partner's trustworthiness using the average scaled trust-value of the adjectives used to describe the partner. The Likert-type scale ratings of the partner's trustworthiness proved to be a poor discriminator of the accuracy conditions.

#### The Effects of Locus of Control Upon Social Influence

The second set of hypotheses state that a person's generalized expectancies concerning the locus of control of reinforcements will effect his reactions in social influence situations. Specific predictions are presented graphically in Figures 1a and 1b on page 21. Those individuals (internals) holding strong beliefs that they have personal control of the outcomes of their behavior were

hypothesized to be resistive to social influence regardless of the influencer's competence. In addition, and in accordance with Harvey et al's (1961) theory, internals were hypothesized to display negatively independent attitudes and perceptions. Those individuals (externals) holding strong beliefs that the outcomes of their behavior are in the control of extrapersonal forces such as chance or powerful others were hypothesized to be very susceptible to social influence. Finally, those individuals (moderates) without strong beliefs concerning locus of control of reinforcements were hypothesized to be more sensitive to the informational content of the influencer's message than to any strong generalized expectancies. Consequently, moderates were hypothesized to be open to social influence when the influencer was competent and not when the influencer was not competent.

Hypothesis 2A. Across both accuracy conditions, the congruency scores of the internals will be lower than those of the externals with the congruency scores of the moderates falling between those of the internals and externals. The obtained mean congruency scores for the three locus-of-control groups are presented in Table 4. The reverse of the prediction was found with the internals obtaining the highest congruency scores followed by the moderates and externals. These differences were not significant however (see Appendix D). There was a significantly negative relationship between degree of externality and congruency scores ( $\underline{r} = -0.27, p < .05$ ) but the amount of variance accounted for by this relationship is a minimal 7.3.

Since the differences in the original congruency scores were approaching significance, an additional post hoc measure of congruence was computed which was felt to be a more sensitive measure of social influence. This second measure of congruence seemed more appropriate in that it was based upon the relationship between the amount of change in initial judgments and the discrepancy that was established between the subject's initial judgments and those of his partner. This revised congruency measure was calculated by dividing the amount of change in the initial judgment by the discrepancy between that initial judgment and the corresponding judgment of the partner. This proportional measure was given a plus value if the initial judgment changed in the direction of the partner's judgment and a minus value if it moved in the opposite direction. These proportional measures were summed over all 18 judgments and constituted the revised congruency score. Although no a priori hypothesis was made concerning this specific measure of congruency, since the variable being measured was still a congruency measure, the same hypothetical relationships examined in hypothesis 2A were applied to the revised congruency measure.

Hypothesis 2A'. The mean revised congruency scores for the internals will be smaller than those of the externals with the revised congruency scores for the moderates falling between those of the internals and externals. The mean revised congruency scores in Table 4 again show a reversal of the prediction, the difference being of border-line significance ( $p > .07$ ) (see Appendix D). As a result, two a posteriori comparisons were tested in which the mean

Table 4

Mean Congruency Scores, Mean Ratings of the Partner's Competence and Trustworthiness and Mean Ratings of the Task Along the Chance-Skill Dimension for the Three Locus-Of-Control Groups

Dependent Measure	Mean Of Internal Group (n = 22)	Mean Of Moderate Group (n = 22)	Mean Of External Group (n = 22)	F-ratio (df = 2,60)	Probability Less Than
Original Congruency Measure	20.86	13.64	11.50	1.94	.15
Revised Congruency Measure	3.85	2.03	1.98	2.73	.07
Rating Of Partner's Competence	3.61	3.69	3.20	1.90	ns
Trust-Value Of Adjectives Used to Describe Partner	3.65	3.70	3.39	0.62	ns
Scale Rating Of Trustworthiness	2.52	2.78	2.30	0.89	ns
Ratings Of Task On Chance-Skill Dimension	4.09	3.77	3.91	0.28	ns

revised congruency scores of the internals were compared with those of the moderates and those of the externals. The results indicate that the mean revised congruency scores for the internals were significantly higher than those of the externals ( $F = 3.99$ ,  $df = 1,60$ ,  $p < .05$ ). In addition, the mean revised congruency scores of the internals were significantly greater than those of the moderates ( $F = 4.21$ ,  $df = 1,60$ ,  $p < .045$ ). The difference between the moderates and the externals on this measure was not significant. The percentage of variance accounted for by the differences between internals and externals and between the internals and moderates are 5.3 and 5.6, respectively.

Hypothesis 2B. It was predicted that across both accuracy conditions, the internals would demonstrate lower ratings of the partner's competence than would the moderates and externals, consecutively. Mean ratings of the partner's competence for the three locus-of-control groups are presented in Table 4. The differences obtained between locus-of-control groups were not significant thus not supporting the hypothesis (see Appendix D).

Hypothesis 2C. It was predicted that across both accuracy conditions, the internals would rate the partner as being less trustworthy than would the moderates and externals, with the externals' ratings being higher than the moderates'. This was hypothesized to be the case with both the mean scaled trust-ratings of the adjectives used to describe the partner and the Likert-type scale of trustworthiness. The mean ratings of trustworthiness on both measures are presented in Table 4. The mean scores for both

of these measures were not significantly different between the locus-of-control groups (see Appendix D). Again, the hypothesis was not supported.

Hypothesis 2D. It was predicted that there would be a negative relationship between the degree to which an individual feels externally controlled and the degree to which he will rate the task as being one of skill. The correlation between externality, as measured by the I-E Scale, and ratings of the task on the zero (chance) to six (skill) point scale was  $-0.12$ . This negative relationship was not significant. The mean ratings of the task along the chance-skill dimension for the locus-of-control groups are presented in Table 4. The differences in the mean ratings were also not significant (see Appendix D).

The above set of hypotheses were concerned with locus of control differences across both accuracy conditions. A third set of hypotheses are concerned with the interaction effects of locus of control and manipulated accuracy. These hypotheses again are presented in Figures 1a and 1b (see p. 21).

Hypothesis 2E. It was predicted that manipulated accuracy would only have an effect upon the congruency scores of the moderates and that the congruency scores of the internals, and externals would remain low and high, respectively, across both subject-accurate and partner-accurate conditions. Mean congruency scores for the locus-of-control groups in both accuracy conditions are presented in Figure 2. The test of the effects of the interaction of locus of control and manipulated accuracy upon congruency

scores was not significant (see Appendix E). As can be seen, all of the locus-of-control groups demonstrated an increase in mean congruency scores from the subject-accurate to the partner-accurate condition.

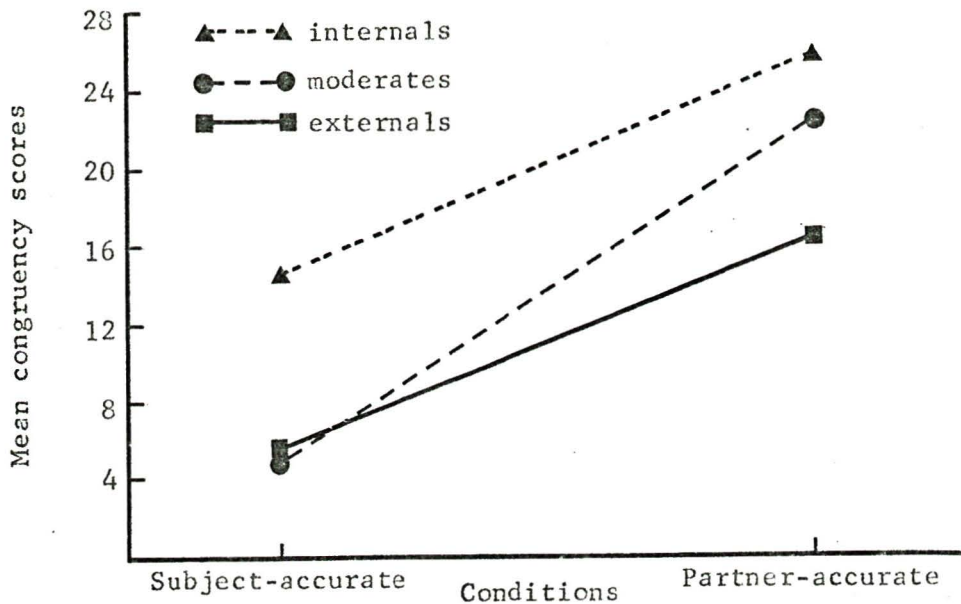


Figure 2. Mean congruency scores in the subject-accurate and the partner-accurate conditions.

The means for the revised congruency scores for the locus-of-control groups in both accuracy conditions are presented in Figure 3. The effects of the interaction between locus of control and manipulated accuracy upon this congruency measure were also tested and found to be non-significant (see Appendix D).

Hypothesis 2G. The prediction was made that the accuracy manipulation would only effect the moderate's ratings of the

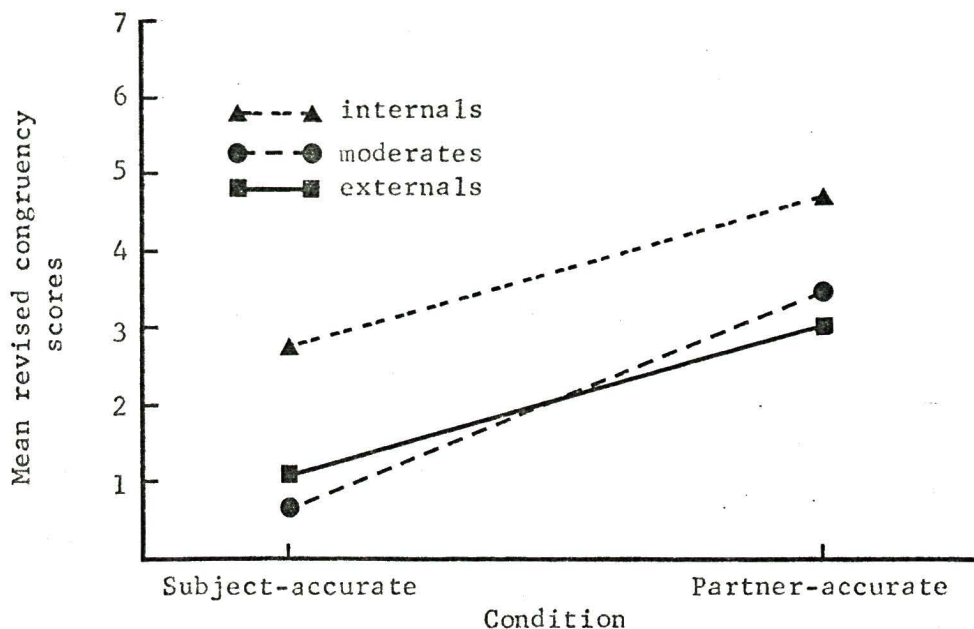


Figure 3. Mean revised congruency scores in the subject-accurate and partner-accurate conditions.

partner's competence and that the ratings given by the internals and externals would not be effected. The ratings of the partner's competence were predicted to increase from the subject-accurate to the partner-accurate condition for the moderate subject group, but the ratings given by the internals and externals would remain low and high, respectively, across both accuracy conditions. The mean ratings of the partner's competence for the locus-of-control groups in both accuracy conditions are presented in Figure 4. The test of the effects of the locus of control by manipulated accuracy interaction upon ratings of the partner's competence was not

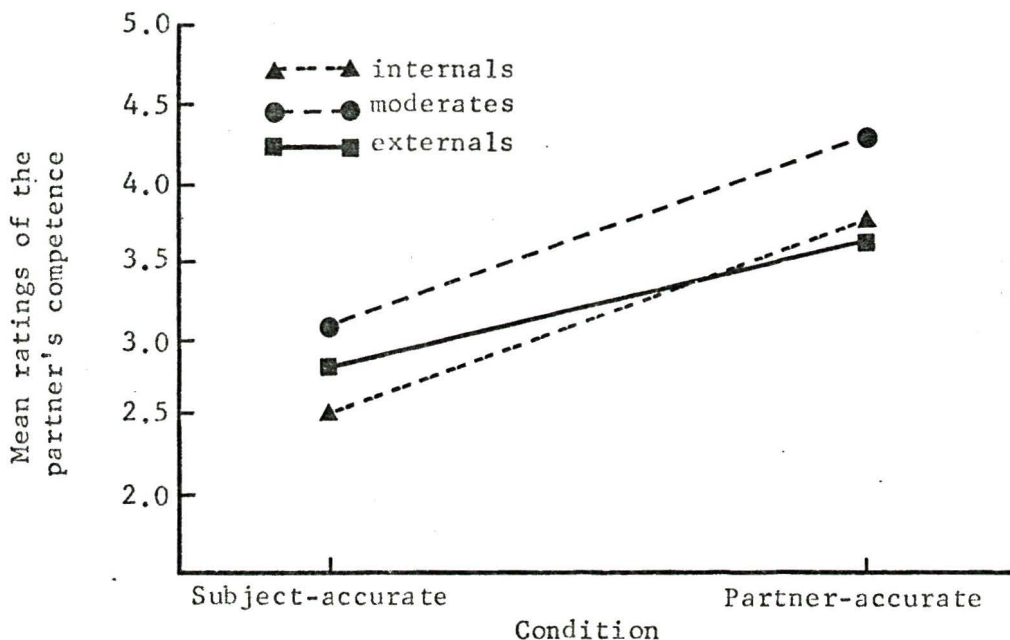


Figure 4. Mean ratings of the partner's competence in the subject-accurate and partner-accurate conditions.

significant (see Appendix E). Again, all three locus-of-control groups demonstrated increased mean ratings of the partner's competency when the partner was more accurate in his judgments.

Hypothesis 2H. The prediction was made that only the mean ratings of the partner's trustworthiness given by the moderates would show an increase from the subject-accurate to the partner-accurate condition. The mean ratings given by the internals and externals were predicted to remain low and high, respectively, across both accuracy conditions. The above predictions were made for both the mean scaled trust-ratings of the adjectives used to

describe the partner and for the 7-point, Likert-type scale of trustworthiness.

The mean trust-value of the adjectives used by the locus-of-control groups to describe the partner is both accuracy conditions are presented in Figure 5. The test of the locus of control by manipulated accuracy interaction upon this measure was not significant (see Appendix E). The mean scale rating of the partner's trustworthiness given by the locus-of-control groups in both accuracy conditions are presented in Figure 6. Again, the test of the effects of the locus of control by manipulated accuracy interaction upon this measure was not significant (see Appendix E). For all subjects, the mean score on both measures of trustworthiness increased when the partner was more accurate in his judgments than the subject.

Hypothesis 2I. It was hypothesized that the externals would perceive the task as being based upon chance and that the moderates would see the task as being based upon skill, regardless of who was more accurate, the subject or the partner. The internals, on the other hand, were hypothesized to see the task as being based upon skill in the subject-accurate condition and based upon chance in the partner-accurate condition. These predictions are presented in Figure 1b on page 21. The mean ratings of the task along the chance-skill dimension for the locus-of-control groups in both accuracy conditions are presented in Figure 7. The test of the effect of the interaction of locus of control and manipulated accuracy upon this measure was not

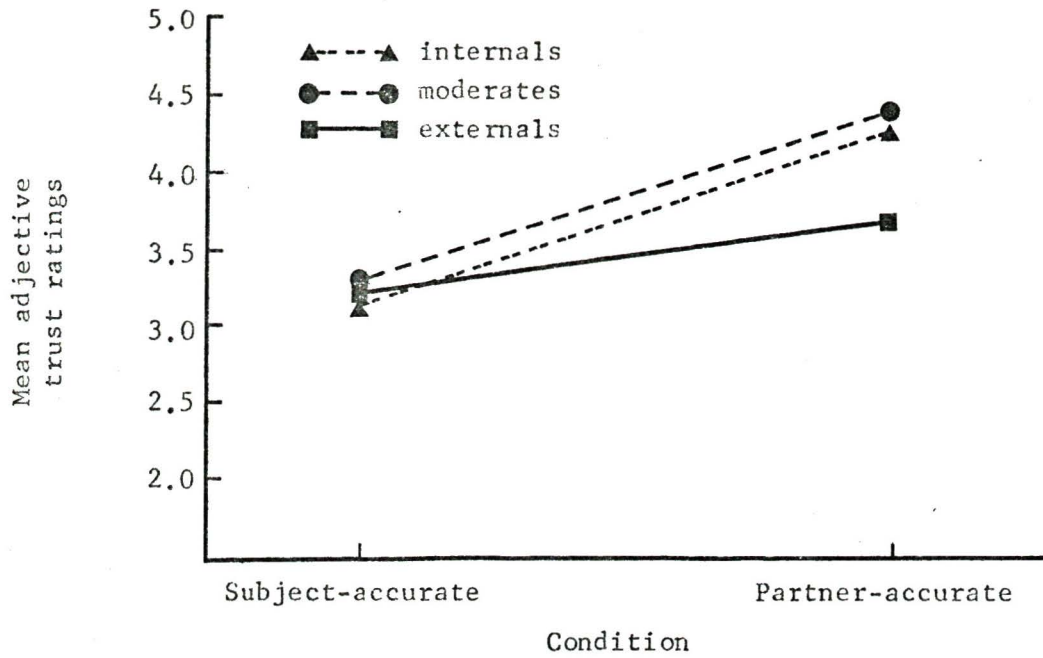


Figure 5. Mean scaled trust-value of the adjectives used to describe the partner in the subject-accurate and the partner-accurate conditions.

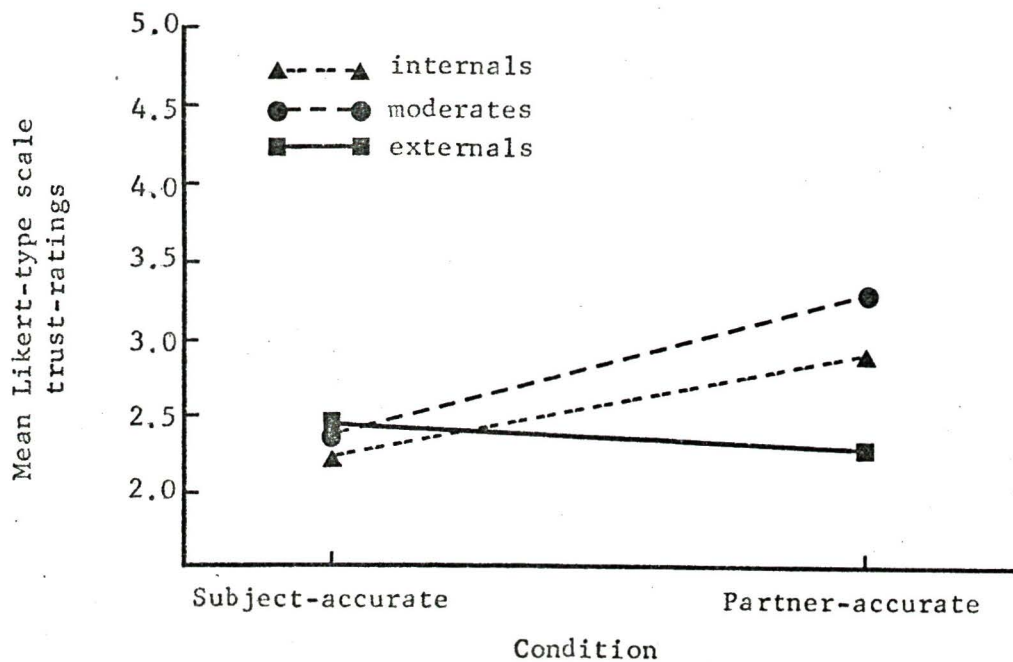


Figure 6. Mean Likert-type scale ratings of the partner's trustworthiness in the subject-accurate and partner-accurate conditions.

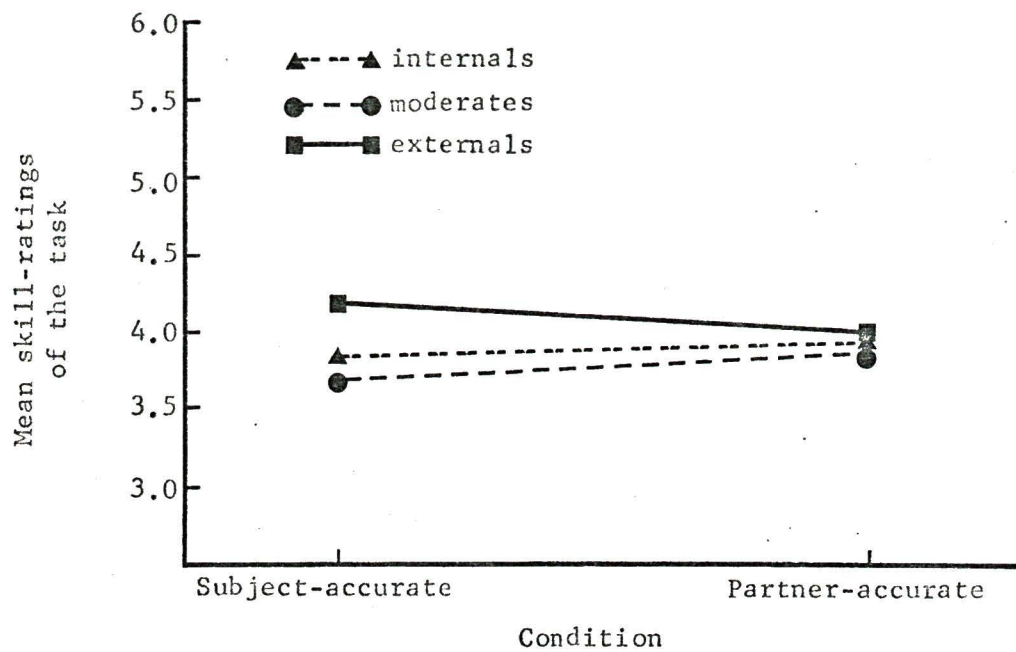


Figure 7. Mean ratings of the task as being determined by skill in the subject-accurate and partner-accurate conditions.

significant (see Appendix E).

## CHAPTER IV

## Discussion

The present study was conducted in order to determine whether individual expectancies concerning locus of control of reinforcements would effect reactions in a social influence situation. Social influence was established by giving subjects an opportunity to revise their initial judgments on a task after being shown the judgments of another person who was presented as being more accurate than the subject. It was predicted that internals would counterconform in a social influence situation whereas moderates and externals would display independent and conforming behavior, respectively.

The first set of hypotheses (hypotheses 1A-1D) served as checks on whether social influence had actually been established by manipulating feedback so as to indicate that a partner was more accurate in his judgments than the subject. The findings related to these hypotheses confirm previous studies (Campbell, 1961; Goldberg & Lubin, 1958; Levinger, 1959) in which the degree to which a person is influenced by another is positively related to the perceived competency of the influencer. Subjects were more likely to perceive a partner as being competent and trustworthy when the partner's judgments were presented as being more accurate. The subjects were also more likely to change their initial judgments in the direction of those of the partner when the partner was seen as being more accurate. Assured that the conditions for social influence had been established, the effects of locus of

control upon the extent of influence were then examined.

The second set of hypotheses (hypotheses 2E-2H) describe the effects of the interaction between locus of control and perceived accuracy upon social influence. Specifically, internals were predicted to be counterconforming in that they would resist being influenced by the partner's judgments regardless of who was perceived as being more accurate, the subject or the partner. Counterconformity would be reflected in low congruency scores and in low ratings of the partner's competence and trustworthiness in both the subject-accurate and partner-accurate conditions. Counterconformity was also predicted to be reflected in ratings of the task as being skillful in the subject-accurate condition but as being based upon chance in the partner-accurate condition.

Conversely, externals were predicted to be conformists in that they would be influenced by the partner's judgments regardless of whether the partner was seen as accurate or not. Conformity was hypothesized to be reflected in high ratings of the partner's trustworthiness and competence and in high congruency scores in both the subject-accurate and partner-accurate conditions. In additions, externals were predicted to see the task as being determined by chance in both accuracy conditions.

Finally, moderates were predicted to be independent in that they would be influenced by the partner's judgments in the partner-accurate condition but not in the subject-accurate condition. Independent behavior was hypothesized to be reflected in high congruency scores and high ratings of the partner's

competence and trustworthiness in the partner-accurate condition but low congruency scores and low ratings of the partner's competence and trustworthiness in the subject-accurate condition. In addition, moderates were hypothesized to see the task as being determined by skill in both accuracy conditions.

None of the hypothesized interactions between locus of control and perceived accuracy were significant. All of the subjects, regardless of their classification on the I-E scale, were more influenced when the partner was presented as being more accurate than the subject. On the average, subjects in all three locus-of-control groups showed more congruency in the partner-accurate condition as well as higher ratings of the partner's trustworthiness and competence. On the average, subjects in all three locus-of-control groups tended to rate the task slightly towards the skill end of the scale, the average rating being 3.9 on a scale ranging from zero (chance) to six (skill) with three being the hypothetical midpoint. Evidence from these findings, therefore, do not support the main contention that internals are counterconforming and that moderates and externals are independent and conforming, respectively, under the conditions existing in the present experiment.

The finding that the internals were more influenced by an accurate partner than an inaccurate partner tends to confirm Rotter's (1966) contention that internals would resist covert attempts at influencing them (i.e., verbal conditioning) but would be influenced if the attempt was overt and if it were of pragmatic

value in dealing with a situation. The Julian and Katz (1968) finding that internals preferred not to rely upon another person's judgments, even though this other person was made to appear more accurate, may have been due to the internal's perception that they were being influenced in a covert manner. The subjects in the Julian and Katz study never actually saw the partner's responses but were just asked to state blindly whether they wanted to trust the other person's judgments or use their own. The possibility of perceived experimenter deception seems quite high in the Julian and Katz study whereas in the present study, this possibility may have been reduced by allowing the subjects to see each others judgments.

The findings concerning the externals also tend to indicate that external subjects do not conform "blindly" to others; the externally oriented subjects also showed an increased tendency to be influenced by the judgments of another person when this person was presented as being competent. This finding supports a previous finding by Ritchie and Phares (1969) in which they found that externals would change their attitudes on an issue only if presented with arguments from a knowledgeable source and not if presented with these same arguments from a person with no knowledge of the issue.

The third set of hypotheses (hypotheses 2A-2D) were concerned with the main effects of locus of control upon social influence. It was predicted that the externals would be most influenced by the partner's judgments, regardless of his competency, followed in

order by the moderates and the internals. Although the locus-of-control groups did not differ in their ratings of the partner's competence and trustworthiness nor in their ratings of the task as being determined by luck or skill, significant differences were obtained on the revised congruency scores of the three groups. These differences were in an opposite direction to those predicted, with the internals showing higher revised congruency scores than both the moderates and the externals. The moderates also did not differ significantly from the externals.

The remaining dependent measures do not provide an explanation of these unexpected differences. The differences in congruency scores can not be explained by differences on the measures of competence, trustworthiness or ratings of the task as being determined by chance or skill, since the main effects of locus of control were not significant for these measures. Thus, the finding that the moderates and externals displayed lower congruency scores than the internals is not due to lower ratings of the partner's competence and trustworthiness on behalf of the externals and moderates.

In order to elucidate these differences, several post hoc analyses were performed. The first analysis tested whether the internals had higher congruency scores because they had a higher number of changes in their initial judgments than the externals and moderates. In order to test this result, a 3 X 2 analysis of variance was performed on the number of initial judgment-changes with three levels of locus of control and two levels of accuracy

being the factors. This text proved to be non-significant with the average number of initial judgment-changes over all subject groups being 10 out of 18 judgments. Analyses are presented in Appendix F.

The higher congruency scores for the internals may also have been due to a higher number of conforming (increased congruence) versus counterconforming (decreased congruence) changes in judgments for the internals than for the moderates and externals. To test this possibility, another 3 X 2 analysis of variance was performed upon the number of conforming judgment-changes minus the number of counterconforming judgment-changes. The F-ratio again proved to be non-significant (see Appendix G).

The revised congruency measure was obtained by summing over three levels of discrepancy between the subject's initial judgment and that of his partner. The possibility exists that the higher congruency scores of the internals may have been due to their being more influenced by one level of discrepancy than were the externals or the moderates. As a consequence, the mean congruency scores at each level of discrepancy were examined in both accuracy conditions and for each locus-of-control group. The mean congruency scores for the locus-of-control groups in each accuracy condition and at each level of discrepancy are presented in Appendix H. To test the effects of the interactions between discrepancy level and perceived accuracy, and between discrepancy level and locus of control, a 3 X 3 X 2 multivariate analysis of variance was performed on the revised congruency scores with 3

levels of locus of control, 2 levels of perceived accuracy and with the 3 levels of discrepancy being treated as a repeated measure. The multivariate analysis again used Wilk's lambda criterion and provides for an exact test of the equality of replicated means regardless of whether the homogeneity of covariance assumption can be met.

The multivariate test of the interaction between perceived accuracy and discrepancy level was non-significant (see Appendix I) indicating that the profile of mean congruency-scores over the three discrepancy levels are parallel. The multivariate test of the interaction between locus of control and discrepancy level approached significance (see Appendix I). The mean congruency scores for the internals, moderates and externals at each level of discrepancy are presented in Figure 8. An examination of this figure suggests that the differences between the three locus-of-control groups decrease as discrepancy level increases, and this is substantiated by the significant linear component of the discrepancy by locus-of-control interaction (see Appendix J).

Although the interaction is not significant at the a priori alpha level, the data suggest that the obtained differences between locus-of-control groups in congruency scores may have resulted from the differences between the groups in the degree to which they were influenced when the discrepancy between the subject's judgments and those of the partner was four inches rather than six or eight inches. The data suggest that differentiation between locus-of-control groups occurred only with a

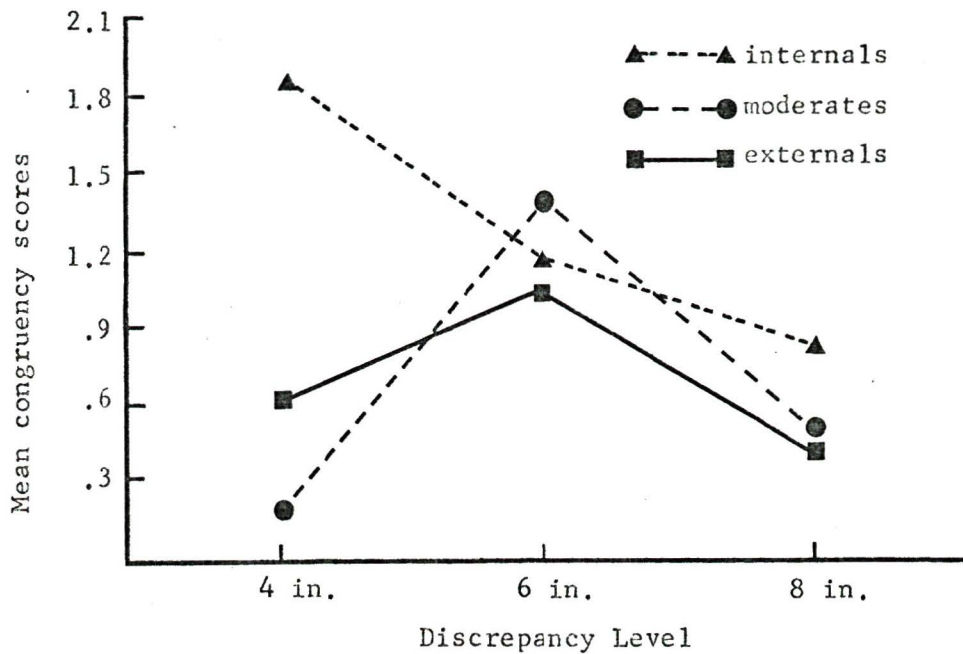


Figure 8. Mean congruency scores for the internals, moderates and externals at the three discrepancy levels.

discrepancy level less than six inches with the internals demonstrating higher congruency scores than either the moderates or the externals. Future research in this area should not assume that internals, moderates and externals will be equally influenced at all levels of discrepancy between the subject's judgments and those of the influencer. In future replications of the present study, in order to differentiate between locus-of-control groups, discrepancies of less than six inches should be used.

One final finding which is of interest is that those

individuals with no strong generalized expectancies concerning locus of control of reinforcement (moderates) were not significantly different from the externals in how much they were influenced by the partner's judgments. Since very little research has been carried out on individuals without strong locus-of-control expectancies, this finding is hard to interpret. It should be noted that the mean I-E score for the present sample was 10.88 which is three points higher than the means usually reported in other studies. Since moderates were defined as those subjects obtaining scores around this mean, they still fall almost one standard deviation away from the means that Rotter (1966) reports in his original standardization of the scale. The possibility exists, therefore, that those subjects defined as moderates may have had external locus-of-control expectancies. This might explain why the moderates' behavior in the experiment was similar to that of the externals.

#### Suggestions For Future Research

The relationship between social influence and locus of control remains in question. The finding that the overall congruency scores of the externals were significantly less than those of the internals is contradictory to previous findings in which externals are more conforming than internals. One possible explanation lies in the effects of differing levels of discrepancy between subject and influencer with the findings suggesting that internal subjects are more influenced by smaller discrepancies than externals. In order to maximally discriminate between locus-

of-control groups, future research should use discrepancies less than six inches.

The results of the present study have also not made clear the effects of social influence upon those individuals not holding strong generalized expectancies concerning locus of control. The present study found no differences between the moderates and the externals in their susceptibility to social influence, but the possibility exists that the subjects classified as moderates held expectancies concerning locus of control which were more like those of the externals. In order to maximize the differences between moderates and externals, it is suggested that in future research subjects be selected by using the norms originally provided by Rotter (1966).

Mischel (1968) points out that the utility of any psychometric scale in grouping subjects lies in how well the scale is able to predict individual differences compared to more cumbersome methods of prediction. Although an individual's locus-of-control expectancies can be measured behaviorally using Rotter's Level of Aspiration Board (Rotter, 1945), the construct validity of the I-E scale has been demonstrated sufficiently enough (see Appendix A) so as to warrant using a more easily administered, 29-item scale for assessing individual differences in locus of control. Future research could also, however, examine the relationship between social influence and locus-of-control expectancies by the manipulation of the subject's expectancies. Blackman (1962) has found that chance versus skill expectancies may be manipulated by

controlling the sequence of reinforcements in a task. Blackman has shown that as reinforcement schedules deviate from a 50-50 payoff schedule, perceptions of a task as being determined by skill increase. Manipulation of this type could be used to establish control-expectancies before social influence was introduced.

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## APPENDIX A

A description of the content, construction  
and validity of the Internal-External Control Scale

### Instructions

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you are concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief: obviously there are no right or wrong answers.

Your answers to the items on this inventory are to be recorded on a separate answer sheet which is loosely inserted in the booklet. Remove this answer sheet now. Print your name and any other information requested by the examiner on the answer sheet, then finish reading these directions. When finished, you may begin.

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. Find the number of the item on the answer sheet and cross out a or b depending on which statement you believe to be most true.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you are concerned. Also try to respond to each item independently when making your choice: do not be influenced by your previous choices.

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 others.
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 things 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 is really 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 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 role 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 on a local level.

---

Note. - Total score is the number of underlined items. Underlined items are keyed in the external direction. Items with no underline are filler items designed to disguise the purpose of the test.

## Construction and Validity

Rotter, Liverant and Crowne (1961) replicated previous studies (James & Rotter, 1958; Phares, 1957) and found that there were greater increments and decrements in verbalized expectancies following success and failure respectively under skill conditions than under chance conditions. These authors also found that it took more to extinguish expectancies after 100% reinforcement when the task was one of skill than when it was based upon chance and found longer extinction periods following 50% reinforcement for chance-determined tasks than for skill-determined tasks. These different patterns of behavior on skill versus chance-determined tasks were used as criteria in constructing and validating items on the I-E scale. Individuals performing on a task in much the same way as individuals performing a task under chance conditions were classified as externals while those individuals performing on a task in a similar manner to individuals performing a skill-determined task were classified as internals. Only those items on the final version of the I-E scale were retained in which there was a significant correlation between a subject's classification and the direction of the alternative he chose on each item. The final selection of each item was also based upon its correlation with the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1964). Only those items with low correlations with this scale were retained.

Internal consistency reliabilities range from .79 to .65

in four college samples reported by Rotter (1966). Test-retest reliabilities over a one-month period ranged from .83 to .55 for first-year college students. Subsequent research with the scale (Rotter, 1966) found correlations between the I-E scale and the Marlowe-Crowne Social Desirability Scale to range from  $-.12$  to  $-.35$ . Correlations of the I-E scale with measures of intelligence are also minimal, ranging from  $-.22$  to  $.03$  (Rotter, 1966). The discriminant validity of the scale thus appears to be adequate.

Numerous studies have also found predicted differences in behavior between subjects classified as internals, moderates and externals on the basis of their I-E scores (e.g., Cromwell, Rosenthal, Shakow & Kahn, 1961; Crowne & Liverant, 1963; Davis & Phares, 1967; Getter, 1966; Julian & Katz, 1968; Lefcourt, 1967; Phares, 1968; Phares, Ritchie & Davis, 1968; Ritchie & Phares, 1969; Rotter & Mulry, 1965). Therefore, use of the I-E scale in dividing subjects into groups appears justified at this stage of research.

APPENDIX B

Subject's Response Sheet

Code Number: \_\_\_\_\_

Light-pair Number	Initial Set Of Judgments	Your Partner's Judgments	Second Set Of Judgments
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			

Your average error per judgment / / / / /  
 Your partner's average error per judgment / / / / /  
 Average error per judgment in inches 0" 1.5" 3" 4.5" 6"

#### APPENDIX C

The derivation and description  
of the adjective check-list used  
to obtain a measure of trustworthiness

Forty students, ranging from second-year to graduate students in psychology (18 males and 22 females), were asked to rate the adjectives from the Adjective Check List (Gough & Heilbrun, 1965) in terms of how willing they would be to trust, or rely upon, a person's judgments who was described by each of these adjectives. They were asked to rate the adjectives on a seven-point scale with zero being defined as the "least favorable rating" and six being defined as the "most favorable rating." The average rating of those adjectives which were most applicable to the experimental situation was computed and rank ordered; adjectives like "sexy" and "handsome" were eliminated as were adjectives on which there were significant sex differences on trust-ratings. This left 140 adjectives which were then divided into 35 equal intervals with one adjective being chosen from each interval for the final list. This final list of adjectives appears on the following page along with their average trust-rating and standard deviation.

Final List of Adjectives  
Used to Measure Trustworthiness

Adjective	Average Trust Rating	SD
unintelligent	0.66	0.82
undependable	0.74	0.88
confused	1.15	1.26
careless	1.17	1.07
lazy	1.26	1.18
distractable	1.37	0.93
hasty	1.57	1.07
forgetful	1.57	1.07
indifferent	1.66	1.24
disorderly	1.76	1.30
apathetic	1.95	0.93
suggestible	2.10	1.16
awkward	2.26	1.19
changeable	2.53	1.51
conventional	2.82	0.92
moderate	3.26	0.94
unconventional	3.47	1.05
self-confident	3.80	1.24
deliberate	4.00	1.17
planful	4.05	1.17
methodical	4.07	1.22
serious	4.26	1.04
reflective	4.30	0.92
practical	4.45	1.03
confident	4.52	0.84
stable	4.57	0.97
realistic	4.72	1.30
thoughtful	4.77	0.93
rational	4.80	1.15
organized	4.92	1.17
logical	5.12	0.95
clever	5.32	0.86
alert	5.40	0.90
clear-thinking	5.59	0.55
capable	5.70	0.64

## APPENDIX D

Multivariate and Univariate Tests of the Main Effects of Locus of Control on Measures of Congruency, Trustworthiness, Competence and Chance-Skill Determination of the Task

Multivariate Tests <sup>1</sup>				
Test of Roots	$\underline{F}$	$\frac{df}{\text{hypothesis}}$	$\frac{df}{\text{error}}$	$\underline{p}$ less than
1 through 2	1.18	12	110	.30
2 through 2	0.68	5	55	.64
Univariate Tests				
Variable	$\underline{F}(2,60)$	MS	$\underline{p}$ less than	standardized discriminant function coefficient
Original Congruency Measure	1.94	529.74	.15	-2.25
Revised Congruency Measure	2.74	0.24	.07	2.81
Trust-value of Adjectives Used to Describe Partner	0.62	0.59	.54	0.24
Scale Rating of Trust- worthiness	0.89	1.23	.42	0.11
Ratings of Partner's Competence	1.91	1.81	.16	-0.54
Ratings of Task on Chance- Skill Scale	0.28	0.44	.75	0.16

<sup>1</sup>Multivariate test uses Wilk's lambda criterion.

## APPENDIX E

Multivariate and Univariate Tests of the Locus of Control by  
Perceived Accuracy Interaction on Measures of Congruency,  
Trustworthiness, Competence and Chance-Skill  
Determination of the Task

Multivariate Tests <sup>1</sup>				
Test of Roots	<u>F</u>	<u>df</u> hypothesis	<u>df</u> error	<u>p</u> less than
1 through 2	0.28	12	110	.99
2 through 2	0.15	5	55	.98
Univariate Tests				
Variable	<u>F</u> (2,60)	MS	<u>p</u> less than	standardized discriminant function coefficient
Original Congruency Measure	0.19	51.02	.83	0.11
Revised Congruency Measure	0.13	0.01	.87	0.08
Trust-value of Adjectives Used to Describe Partner	0.66	0.63	.52	0.48
Scale Ratings of Trust- worthiness	1.02	1.41	.36	0.72
Ratings of Partner's Competence	0.35	0.34	.70	-0.01
Ratings of Task on Chance- Skill Scale	0.29	0.46	.75	-0.07

<sup>1</sup>Multivariate test uses Wilk's lambda criterion.

## APPENDIX F

Analysis of Variance of  
the Number of Initial Judgment  
Changes

Source	<u>df</u>	MS	<u>F</u>
Locus of Control (I)	2	19.28	1.42
Perceived Accuracy (A)	1	26.72	1.97
A X I	2	0.59	0.04

## APPENDIX G

Analysis of Variance Of  
the Number Of Conforming Minus  
Counter-conforming Judgment-  
Changes

Source	<u>df</u>	MS	<u>F</u>
Locus of Control (I)	2	28.95	1.22
Perceived Accuracy (A)	1	121.04	5.52*
A X I	2	2.86	0.12

Note - \*  $p < .05$

## APPENDIX H

Mean Congruency Scores for the Locus-of-Control Groups in Each Accuracy Condition and at Each Level of Discrepancy

Conditions		Discrepancy Level		
		4 in.	6 in.	8 in.
Subject-Accurate	Internals	1.41	0.88	0.63
	Moderates	-0.31	0.76	0.19
	Externals	0.28	0.92	-0.09
Partner-Accurate	Internals	2.28	1.51	1.01
	Moderates	0.58	2.03	0.73
	Externals	0.94	1.19	0.85

## APPENDIX I

Multivariate and Univariate Tests of the Interaction Between  
Discrepancy Level and Perceived Accuracy

Multivariate Tests <sup>1</sup>				
Test of Roots	<u>F</u>	<u>df</u> hypothesis	<u>df</u> error	<u>p</u> less than
1 through 1	0.13	2	59	.88
Univariate Tests				
Variable	<u>F</u> (1,60)	MS	<u>p</u> less than	standardized discriminant function coefficient
Linear Component of Interaction	0.23	0.29	.63	1.05
Quadratic Component of Interaction	0.00	0.00	.99	0.33

<sup>1</sup>Multivariate tests used Wilk's lambda criterion.

## APPENDIX J

Multivariate and Univariate Tests of the Interaction Between  
Discrepancy Level and Locus of Control

Multivariate Tests <sup>1</sup>				
Test of Roots	<u>F</u>	<u>df</u> hypothesis	<u>df</u> error	<u>p</u> less than
1 through 2	2.13	4	118	.08
2 through 2	0.00	1	59	.96
Univariate Tests				
Variable	<u>F</u> (2,60)	MS	<u>p</u> less than	standardized discriminant function coefficient
Linear Component of Interaction	4.09	5.03	0.02	0.87
Quadratic Component of Interaction	1.43	5.63	0.25	-0.31

<sup>1</sup>Multivariate test uses Wilk's lambda criterion.

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(name)

March 5, 1972  
(date)