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#### ABSTRACT

The evidence available in the literature concerning the importance of the concept of trust to the counseling relationship is unequivocal. To date, however, there has been little evidence to suggest that psychologists have adequately defined or understood the concept. The major purpose of this study was to determine if the concept of trust could be at least partially defined simply as the ability to predict. The general hypothesis of interest was that subjects exposed to higher levels of predictability should perform higher on traditional trust-type measures.

The study employed a single factor design with three levels and twelve dependent variables. A total of 45 female high school students were randomly assigned to one of three treatment conditions. The treatment conditions were:

(a) 100% Predictable--the subject was always correct in her predictions about the other player's choice; (b) 50% Predictable--the subject was correct in her predictions only 50% of the time; and (c) 0% Predictable--the subject was never correct in her predictions.

All subjects played 30 trials of a Prisoner's Dilemma game with a confederate of the experimenter. Subjects were required to rate their partner in the experiment on a number of traditional trust-type measures.

A multivariate analysis of variance was performed on the 12 dependent variables. The dependent variables were: (a) the cooperative choice in the Prisoner's Dilemma game; (b) a modified self-disclosure scale; (c) a 7-point bipolar scale concerning the subject's stated desire to continue playing the game with the same partner; and (d) a series of nine semantic differential-type scales.

The results showed significant differences in performance on the 12 dependent variables, collectively, between the three groups ( $p < .001$ ). Three additional analyses were performed on the data comparing only two of the groups at a time. Results of these comparisons showed a significant difference between the 100% Predictable group and the 50% Predictable group ( $p < .001$ ). The second analysis showed a significant difference between the 100% Predictable group and the 0% Predictable group ( $p < .001$ ). A comparison of the 50% Predictable group with the 0% Predictable group did not show a significant difference ( $p = .079$ ).

Implications of this study for counselors, teachers, and parents were discussed. The relationship of the findings presented here to a theory of behavior presented by Tolman (1932) was suggested, and areas for future research were presented.

Examiners:

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## CHAPTER I

### INTRODUCTION

The concept of trust has been of interest to professional counselors, since it seems to be generally agreed that the development of trust is essential to a therapeutic relationship. Erikson (1963) described trust versus mistrust as the first crisis faced by the child and argued that the failure to develop trust inhibits further psychological development. Strong (1968) and Strong and Schmidt (1970) suggested that the client's trust in the counselor affects his acceptance of counselor influence. Gibb (1964) states that trust is essential for growth and a prerequisite for the flow of feelings, formation of goals, and the implementation of influence mechanisms in relationships such as counseling.

In spite of the importance placed on trust, there is little evidence in the literature to indicate that psychologists have adequately defined the concept or understand how trust is developed. A number of terms such as cooperation, reliance, faith, and confidence are often used as synonyms for trust. On the other hand, competition, resistance, defensiveness, and suspicion are sometimes used synonymously with mistrust.

An examination of the more popular definitions of trust indicates that some of the major elements in its definition may be summarized as follows: (a) sufficient predictability of the object to be trusted (self, person, group, situation, event or environment); (b) expectation concerning the object to be trusted; and (c) sufficient nonharmfulness or "good intentions" of the object.

The terms *expectation* and *prediction* have sometimes been used separately and sometimes interchangeably in the literature. For the purposes of the present paper the following definitions of prediction and expectation will be employed.

Prediction, as used here, will mean behavior characterized by stating the outcome of an event prior to the actual occurrence of that event. In addition, prediction will be seen as requiring some prior information about the thing being predicted. A "prediction" made in the absence of any relevant experience of the thing predicted will be considered a random choice or guess.

Expectation can be viewed in a more broad, general sense, as a collection of experiences made up of individual predictions. If a person has no prior relevant experience, and is asked to make a prediction about the outcome of an event he can only make a random guess. However, as a person goes through life he makes predictions and observes the outcomes. Based on numerous individual predictions, the person begins to formulate rules which can be applied when he meets

similar or unknown situations. Based on previous experience with making predictions, the person comes to expect certain outcomes when he is required to make a choice. In an unfamiliar situation, in the absence of any relevant experience with the specific object or event, his best "prediction" (specific response) will be some subjective probability estimate based on his past history. As relevant experience with the object or event to be predicted is increased, a set of expectations and rules is created for that specific object or event. Certain general expectations as well as specific predictions become more probable.

One early definition of trust (Deutsch, 1958) included the terms *expectation*, *motivation* and *confidence*. Deutsch suggested that a person makes a trusting choice because he has confidence that the outcome will produce what is desired rather than what is not desired. A person makes a trusting choice rather than a distrusting choice when he expects the desired outcome and is sufficiently confident in his expectation that the fear of the undesired outcome becomes small in comparison to the positive valence of the desired outcome. Deutsch rejected the term prediction as a possible definition of trust.

A second definition (Rotter, 1971) focused on the term expectation: Trust is the "expectancy that the word, promise, verbal or written statement of another individual or group can be relied upon" (1971, p. 144). In a similar definition, Giffin (1967) suggested that trust was the "reliance upon

the communication behavior of another person in order to achieve a desired but uncertain objective in a risky situation" (p. 105).

Few writers have included prediction in their conceptualizations of trust. When prediction has been included it has generally been in theoretical models, rather than attempts to examine the concept in an experimental design. The term prediction has been used only loosely in attempts to talk about the concept of trust.

One major approach to the study of trust may be characterized by the work of Rotter (see Rotter, 1971, for a review). The basis of this approach has been to construct scales which will accurately identify people in the population on a continuum who are strongly trusting on one end and weakly trusting on the opposite end. This approach may provide the counselor with valuable information concerning what a particular person's expectancies are about the world in general, but does not provide for specific means of developing trust.

A second major approach to the study of trust has followed the early work of Deutsch (1958). This approach can be summarized as an attempt to identify and manipulate variables which will increase an individual's ability to predict in an initially unpredictable situation.

If the ability to predict can be accepted as a possible partial definition of trust, then an alternative method of study would be to study prediction directly. In other words,

it should be possible to manipulate the environment in such a way as to insure that specific predictions are either correct or incorrect, thereby either increasing or decreasing the quality called "trust."

Since trust is widely accepted as an important concept in the counseling relationship, a more precise and operational definition would seem to be needed if we are to make the concept operational in any sense other than intuitive. If the effectiveness of the counseling process depends to a large measure on the establishment of trust, then it would seem important to discover in what ways trust may be established.

The purpose of the present study was to examine the possibility that trust may be at least partly defined simply as being able to predict. The study examined the effects of three degrees of accuracy in prediction on "trust type" responses as measured by traditionally used measures of trust.

## CHAPTER II

### REVIEW OF RELATED LITERATURE

The present chapter is organized into two sections. The first section reviews the literature which has examined trust as generalized expectancy. The second section reviews the literature which has studied trust using experimental games. The relevant research in the second section will be presented in table form, followed by a discussion of the important studies.

#### *Generalized Expectancy*

One approach to research in the area of trust has focused on the role of individual differences in the tendency to display trust. Rotter (1967, 1971) defined trust as the "expectancy that the word, promise, verbal or written statement of another individual or group can be relied upon" (1971, p. 444). Rotter (1967) employed his definition as the basis for developing an Interpersonal Trust Scale that would place subjects along a continuum from low to high trust.

The personality variable of trust was conceptualized by Rotter within the wider area of social learning theory. Within this context, trust was viewed as a generalized expectancy developed from specific histories of interactions

and generalized to novel situations to guide behavior. For example, a person who had come from a family where everyone fulfilled their promises would tend to place confidence in the promises of strangers (high trust). On the other hand, a person who had come from an environment in which people did not usually fulfill their promises would tend to disbelieve the promises of strangers (low trust). What Rotter has attempted to measure can be seen as a generalized expectancy that communication can be believed.

A review of studies using the Interpersonal Trust Scale (Rotter, 1967) would indicate that it has received some construct validity (see Rotter, 1971), but that the behavioral evidence is still weak. McDonald, Kessel and Fuller (1972), in a study of self-disclosure and trust, reported no significant relationship between the Rotter Interpersonal Trust Scale and trust as measured by the Prisoner's Dilemma game. McDonald, et al. tested the hypothesis that self-disclosure would be positively related to trust. Three measures of trust were employed: (a) Rotter's Interpersonal Trust Scale (ITS); (b) a modified form of Deutsch's Prisoner's Dilemma game (PD); and (c) a self-report trust measure developed by one of the authors (Kessel). The results of the study indicated that the selection of trusting-type choices in the PD game were significantly correlated with the total score for the self-disclosure scale. No significant relationship was found between the ITS and self-disclosure. The authors suggested that the Rotter ITS and the PD game were measuring

different constructs or different kinds of trust.

Rotter (1971) has suggested that the failure of studies employing games as a research tool to find effects of personality variables on cooperative (i.e., trust-type) behavior could be a result of the nature of the game situation. Support for this general conclusion has been suggested by Ward (1972) and Schlenker, Helm and Tedeschi (1973). Schlenker, et al. divided female college students into groups of high and low trusters on the basis of scores on the Rotter ITS. The subjects then played 50 trials of a PD game against a simulated other player. The simulated player was able to send messages to the subject indicating the simulated other's intended choice on the next trial. The simulated player kept her promise either 10% or 90% of the time. Results of the study showed a marginal support for the main effect of trust level ( $p < .07$ ).

The second hypothesis was that subjects who received 90% credible responses would be more cooperative (trusting) than subjects in the 10% credible condition. This hypothesis was supported.

According to the rationale behind the ITS (Rotter, 1967), behavioral trust is defined as reliance on the communications of another person. If communication is absent or cannot be interpreted, then the subject would have only his past history (generalized expectancy) to rely on, and the situation is not clearly a trust situation.. Results reported by Schlenker, et al. (1973) supported the hypothesis that

subjects who have a high generalized expectancy of trust will make more cooperative responses, but that explicit information tends to have the strongest effect. In other words, subjects who received highly credible promises (relevant experience) tended to cooperate significantly more often than subjects who received promises of low credibility, regardless of the scores on the ITS. Results from other studies (Gahagan & Tedeschi, 1969; Lindskokd & Bennet, 1973) have tended to support the strength of effect of promise credibility on cooperation.

#### *Experimental Games*

The most widely used means by which trust behavior has been inferred, defined, and measured has been the observation of choice behavior in non-zero-sum games, in particular, the Prisoner's Dilemma game (see Luce & Raiffa, 1957, for a verbal description). The Prisoner's Dilemma (see Gallo & McClintock, 1965; Swingle, 1970; and Wrightsman, O'Conner, & Baker, 1972, for a review) in its abstract form, is given in Figure 1.

An examination of Figure 1 shows that Person I can win most and lose least by choosing Y (person I's payoff is always the first number in a cell). In a similar fashion, person II can win most and lose least by choosing B. If I chooses Y and II chooses B they both lose 9 units. Both persons can win only if they end up in the AX cell. A state of mutual trust is said to exist if both players cooperate,

		Person II	
		A	B
Person I	X	+9      +9	+10     -10
	Y	-10     +10	-9      -9

FIGURE 1 Prisoner's Dilemma Game Matrix  
(Deutsch, 1973).

end up in the AX cell. A state of suspicion or distrust is said to exist if the players end up in one of the other three cells.

The general approach of researchers using the PD game as a measure of trust has been to isolate variables which might increase trusting behavior. Table I presents the relevant research relating to each of four main variables of interest: (a) the effect of possibilities for communication; (b) the effect of meaningfulness of rewards; (c) personality variables; and (d) strategy of the other player.

*Communication.* The volumes of research currently available on the Prisoner's Dilemma game can be traced to the early work of Deutsch (1958). Deutsch presented subjects with a two-person bargaining game. Starting with a basically unpredictable situation, the experimenter increased the amount of information subjects received about the other player's intentions. Predictability was increased in two ways; through instructions concerning the motivational orientation; and by allowing communication among subjects. The results indicated that trust, as measured by the cooperative choice, was produced under a cooperative orientation. The behavior resulting from an individualistic orientation was greatly influenced by situational conditions such as the ability to communicate. Subjects with an individualistic orientation were more likely to trust (i.e., make a cooperative choice) if they could communicate freely before making their choices.

TABLE I

Summary of Research Employing the  
Prisoner's Dilemma Game

Variable of Interest	Relevant Studies
Communication	Deutsch, 1958 Loomis, 1959 Wichman, 1970
Meaningfulness of Rewards	Evans, 1964 Gallo, Funk & Levine, 1969 Gumpert, Deutsch & Epstein, 1969 Messe', Bolt & Sawyer, 1971 Oskamp & Kleinke, 1970 Wrightsman, 1966
Personality Variables	Wrightsman, 1966 Uejio & Wrightsman, 1967
Strategy of the Other Player	Oskamp, 1974 Whitworth & Lucker, 1969

Loomis (1959) corroborated Deutsch's results concerning the effect of communication upon trust; he found that trust (cooperation) increased as a function of the completeness of the communication. A simple statement of expectation produced a lower level of perceived trust than a statement combining expectation, intention, and consequence.

Wichman (1970) suggested that the kind of communication has an effect on trust, as measured by the cooperative response in the PD game. Wichman tested four groups of subjects. One group played the PD game with only *verbal* communication permitted. A second group was permitted only *visual* communication. A third group was allowed both *verbal and visual*, and the fourth was permitted *no* communication. The results indicated that amount of communication increased the number of cooperative responses. Subjects who were not allowed to communicate showed the lowest level of cooperation. Subjects who were allowed both visual and verbal communication showed the highest level of cooperation.

*Meaningfulness of rewards.* It has been suggested (Kee & Knox, 1970) that the payoff or incentives in a real life trust situation are often complex and incalculable. Much of the research using the Prisoner's Dilemma game, however, has employed points or imaginary money as reward. The basic question concerning meaningfulness of rewards can be viewed as two contrasting theories. One theory (e.g., Deutsch, 1972) holds that the low number of cooperative choices typically found in PD studies (as noted by Gallo & McClintock,

1965) is a function of psychologically meaningful variables such as a lack of mutual trust. The contrasting position (e.g., Gallo & McClintock, 1965; Messé, Bolt & Sawyer, 1971) suggests that the low level of cooperation results from a lack of motivation to do well (i.e., to win as much as possible for oneself).

Studies which have examined this latter hypothesis by manipulating the magnitude of rewards available in the PD matrix (e.g., Evans, 1964; Gallo, Funk & Levine, 1969; Gumpert, Deutsch & Epstein, 1969; Messé, et al., 1971; Oskamp & Kleinke, 1970; Wrightsman, 1966) have produced mixed results, but most have shown that high levels of potential rewards do not result in more cooperative choices than do matrices with low or imaginary rewards. Two studies (Gumpert, et al., 1969; Messé, et al., 1971) which examined different levels of real money rewards (rather than real vs. imaginary) found that subjects who played for high rewards did not make significantly more cooperative choices than subjects who played for low rewards. A third study (Oskamp & Kleinke, 1970) found no consistent effect for the variations in magnitude of reward.

*Personality variables.* Most research dealing with the effect of personality variables on behavior in the PD game has yielded inconsistent results (see Wrightsman, et al., 1972, pp. 97-103 for a review). Of the studies reviewed, only a few are of interest in relation to trust.

One study (Wrightsman, 1966) tested subjects in a two

trial game. Each subject was asked to choose first on trial one and second on trial two. The subjects were given the Philosophies of Human Nature Scale (PHN). Trusting subjects were found to have more positive attitudes toward human nature, saw people as more independent and altruistic. Trust was defined as the choice of the cooperative response when accompanied by a statement of expectation that the other player would choose cooperatively, if the subject gave as a reason for his choice a concept of trust, fairness or cooperation. An attempt to extend the relationship found earlier with the PHN to a 50-trial game (Uejio & Wrightsman, 1967) had only moderate success.

*Strategy of the other player.* One of the most frequently studied variables in PD research has been the effect of the strategy of the other player. That is, the subject plays against a pre-programed strategy controlled by the experimenter. Studies of strategy have generally employed one of two procedures. The most frequently used procedure has been that of simultaneous play. In a simultaneous play situation both the subject and the programed player respond at the same time and independently of each other. Results of studies using simultaneous play are in general agreement with results from studies employing sequential play (see Oskamp, 1971, for a review).

Sequential play has been indicated (Kee & Knox, 1970) as more representative of actual real life transactions involving trust formation. One player, the subject, always

makes the first choice so that the programmed player's choice is contingent on the subject's behavior. In real life one person usually emits a trusting response, and this response is then acted upon by the person being trusted. He may reciprocate with trustworthy or untrustworthy behavior.

In a recent study by Oskamp (1974) simultaneous and sequential play was examined. Oskamp tested 160 freshmen women using various strategy and response procedures. The four strategies used were: (a) random 10% Cooperation; (b) random 90% Cooperation; (c) Tit-for-Tat, contingent response-matching with a one trial lag (i.e., matching the subject's preceding response); and (d) Free-Play, where two subjects were actually paired. The two response procedures were simultaneous and sequential. Results of this study showed a significant main effect for strategies: the 10% Cooperation strategy produced least cooperation (39%); the 90% Cooperation strategy next-to-least (52%); the Free-Play condition next (62%); and the Tit-for-Tat strategy produced the highest cooperation (70%). The differences between conditions were similar to the findings of previous research reported by Whitworth and Lucker (1969). There were no significant main effects for response procedure. There was a significant interaction between response procedure and payoff matrix. Sequential responding produced greater cooperation with a near-zero-payoff matrix (64% vs. 50%). Simultaneous responding produced greater cooperation with the positive payoff matrix (60% vs. 49%). This interaction

was interpreted as evidence for non-equivalent effects of simultaneous and sequential response procedures.

To summarize, it would seem that the variables of personality and magnitude of reward have yielded negative or inconsistent results as factors increasing trust-type responses in the PD game. On the other hand, variables which increase prediction in the PD game situation seem to yield mostly consistent and positive results. For example, the work of Deutsch (1958) and Loomis (1959) seem to indicate that when communication possibilities are increased there is a resultant increase in trust (i.e., the cooperative response in the PD game). The work of Oskamp (1974) and others suggest that as the strategy of the other player becomes more predictable, increases in trust-type responses in the PD game are observed.

## CHAPTER III

### METHOD

The present study was conducted in order to determine whether subjects exposed to higher levels of predictability will exhibit higher trust than subjects exposed to lower levels of predictability. The present study examined three levels of predictability in a Prisoner's Dilemma game, and the effects of each one on a subject's "trust type" responses toward her partner in the game.

#### *Design*

The design consisted of one factor with three levels, and 12 dependent variables. The three levels of predictability were:

1. 100% accurate prediction of the other player's choices (Level 1)
2. 50% accurate prediction of the other player's choices (Level 2)
3. 0% accurate prediction of the other player's choices (Level 3)

Subjects in all three conditions played 30 trials of a Prisoner's Dilemma game with a confederate of the experimenter. Subjects in the 100% Predictable condition were informed that their prediction about the "other" player's choice was correct on each of the 30 trials.

Subjects in the 50% Predictable condition were informed that their prediction about the "other" player's choice was correct on only 50% (15) of the trials. The order of correct prediction was random, with no restrictions, for each individual subject.

Subjects in the 0% Predictable condition were informed that their prediction about the "other" player's choice was correct on none (0) of the 30 trials.

Hypotheses were tested using a Multivariate Analysis of Variance. Twelve dependent measures were employed in the study: (a) the cooperative choice in the Prisoner's Dilemma (PD) game; (b) a modified self-disclosure scale; (c) a 7-point bipolar scale concerning the subject's stated desire to continue playing the game with the same partner; and (d) a series of nine semantic differential-type scales.

The first dependent measure employed was defined as a cooperative choice. A cooperative choice was defined by the event in which the subject chose the black circle and predicted that the other player would also choose the black circle (Black-Black).

The second dependent measure was an adaptation of the Jourard Self-Disclosure Questionnaire (Jourard & Lasakow, 1958). This scale (JSQD) consists of 60 items--10 items in each of 6 content areas: attitudes and opinions, tastes and interests, work (or studies), money, personality, and body. Subjects respond by indicating the extent to which the information has been revealed to four target persons:

mother, father, best opposite-sex friend, and best same-sex friend. Items are scored as: 0--no disclosure to the target person, 1--disclosure only in general terms, or 2--full and complete disclosure about the item.

The JSQD was modified for use in the present study. Only one target person was rated, the subject's partner in the PD game. Items were scored from 1 to 3 in order to eliminate possible negative values attached to a zero rating. Two items were deleted from the original scale. The items not included were: (a) sexual morality and (b) adequacy and style in sexual behavior.

The third dependent measure was a 7-point bipolar scale asking the subject to what extent she would prefer the same partner or a different partner (Partner Preference) if she were to play the game again.

The other dependent measures consisted of a listing of nine semantic differential type items asking the subject to rate her partner in the experiment. The nine items presented were: sincere-insincere, trustable-untrustable, honest-dishonest, reliable-unreliable, open-closed, consistent-inconsistent, responsible-irresponsible, predictable-unpredictable, and dependable-undependable.

### *Hypotheses*

The general hypothesis of interest was that there would be a significant difference in performance on the 12 dependent measures across the three levels of predictability.

The specific hypotheses were:

Hypothesis 1. There is a significant difference in performance on the 12 dependent measures between the 100% Predictable condition and the 50% Predictable condition, and the difference will be in a positive direction ( $X_{100} > X_{50}$ ).

Hypothesis 2. There is a significant difference in performance on the 12 dependent measures between the 100% Predictable condition and the 0% Predictable condition ( $X_{100} \neq X_0$ ).

Hypothesis 3. There is a significant difference in performance on the 12 dependent measures between the 50% Predictable condition and the 0% Predictable condition ( $X_{50} \neq X_0$ ).

### *Subjects*

A total of 46 female volunteers participated in the study. One subject was eliminated as a result of an error in procedure. The age range for the group was from 16 to 18 years. The sample was drawn from a population of middle to upper-middle income female students in grades 11 and 12 in two public secondary schools from the Greater Victoria School District, Victoria, British Columbia.

The recruitment of subjects was coordinated by the girls' counselor in each school. A total of 15 subjects in the first school, and 30 subjects in the second school were included in the study. Subjects were randomly assigned to one of three treatment conditions with 15 subjects in each

condition.

#### *Materials and Apparatus*

*Apparatus.* The experiment was conducted in a small, quiet conference room of the participating schools. Each room contained a fairly large table (large enough to provide work space for the two players and the experimenter, and also accommodate the separating screen) and two chairs. A translucent plastic panel separated the two players. The panel was 40 inches long and 36 inches high. The panel was clear enough for the subjects to identify a female figure, but did not allow them to distinguish the identity of the confederate. In front of each player, and taped to the divider panel was a copy of the payoff matrix (see Figure 2).

An examination of Figure 2 shows that the first player (the subject) can win most and lose least by choosing the red circle (the first person's payoff is always the number which is circled). In a similar fashion, the second person (Other Player) can win most and lose least by choosing the red circle. If both players choose the red circle they each lose 4 points. Both players can win only if they end up in the black-black cell. A state of mutual trust is said to exist if both players cooperate, end up in the black-black cell.

*Materials.* On the table in front of each subject was a tablet on which a red and a black circle were drawn. The tablet contained 35 identical sheets, one for each trial, on

FIGURE 2 The Payoff Matrix

		Other Player	
		Black	Red
You	Black	+4	+5
	Red	-5	-4

which the subject recorded her choice on each trial. There also was a record sheet on which the subject recorded the choice she predicted the other player to make, and a scale on which she indicated her level of certainty concerning her prediction. Each record sheet contained spaces for 35 trials, but only 30 trials were run in order to avoid end effects. A sample of the record sheet is presented in Figure 3.

The experimenter stood between the two players and at the end of the table. He recorded the responses of the players on a data sheet (see Figure 4, Appendix). The experimenter was able to see the choices made by the subject, and passed the choices that were indicated on the tablets to the other player. Based on the predictions of the subject, the experimenter informed the confederate of the choice she should make using a predetermined code.

#### *Procedure and Instructions*







The subject was met by the experimenter and asked to take the chair at the table across from the confederate who was always already seated. The subject was informed that she would be participating in a study concerned with how people make decisions. The subject was told that the study consisted of two parts, the first part being a game that two people play together, and the second part asking each player to fill out some questionnaire type items.

A set of instructions was then given to each player,

FIGURE 3 The Record Sheet

*What You Expect Your Partner to Choose*

*How Certain You Are that Your Partner Will Choose the Color You Expect*

1.	B	R	
			<p>Completely certain she WILL CHOOSE the color I expect</p> <p style="text-align: center;">Uncertain</p> <p style="text-align: right;">Completely certain she WILL NOT CHOOSE the color I expect</p>
2.	B	R	
3.	B	R	
4.	B	R	
7.	B	R	
			<p>Completely certain she WILL CHOOSE the color I expect</p> <p style="text-align: center;">Uncertain</p> <p style="text-align: right;">Completely certain she WILL NOT CHOOSE the color I expect</p>
35.	B	R	

and they were asked to follow along as the experimenter read them aloud. The instructions were as follows:

The purpose of this experiment is to study some of the ways in which people make decisions. You will play several trials of a game in which each of you will be asked to make some choices. Each of you will have a chance to win some points. I would like you to imagine that these points represent real money. This is what you will do.

You see in front of you a sheet with four colored circles. A red and a black circle labelled "YOU" and a red and a black circle labelled "OTHER PERSON". There are four pairs of numbers. The first number of each pair indicates your score. The second number of each pair indicates the score of the other person.

You also have in front of you a tablet on which there are two colored circles, a red one and a black one. On each trial you will choose one of these circles and place a tick ( $\checkmark$ ) mark above it.

If you check the black circle, two things can happen: (1) If the other person also checks the black circle, you get four points and your partner gets four points. (2) If you check the black circle and she checks the red circle, you get five points taken away and she gets five points.

Suppose you check the red circle. Again, two things can happen: (1) If the other person checks the black circle, you get five points and she gets five points taken away. (2) If you check the red circle and your partner also checks the red circle, you get four points taken away and she gets four points taken away.

One person will choose first on all trials; we will decide by flipping a coin. The person who goes first will mark her choice on the tablet on each trial. She will hand the sheet to the experimenter who will record her choice and then hand it to the other player. The person who goes second will then mark her choice on the tablet and hand it to the experimenter. The experimenter will record her choice and hand it to the first player. The second player will make her choice knowing what the first person has chosen.

You also have in front of you a record sheet. At the start of each trial you are to (1) record the choice you expect your partner to make; and

(2) place a tick (✓) mark along the line to indicate your degree of certainty that your partner *will* or *will not* choose the color you expect. If you were completely certain that your partner *would choose* the color you expect you would place a tick (✓) mark at the extreme left side of the line. If you were completely certain that your partner *would not choose* the color you expect you would place a tick (✓) mark at the extreme right side of the line. If you were uncertain you would place a tick (✓) mark at the center of the line.

Are there any questions?

After the instructions had been read, the experimenter flipped a coin and someone was asked to call it in the air. Regardless of how the coin fell, the interpretation by the experimenter was that the subject would choose first.

The players were then asked to answer some "practice" questions concerning the rules of the game. Each player was given a sheet on which there were eight questions concerning the payoffs resulting from the various possible combinations of choices. At the same time each player was given a tablet on which the answers to the practice questions had been written. The players were instructed to turn over the numbered cards as they completed each question. They were asked to check their answer against the answer printed on the card, and to make any corrections required. After both players had completed the "practice" questions and any of the subject's questions answered, the materials were collected and set aside.

The experimenter then indicated that the first trial was to begin. On the first trial the players were directed through the sequence of events, step by step. The players

continued at their own rate until 30 trials had been completed. At the end of the 30 trials the experimenter indicated that only 30 trials would be played.

The subject was taken to the second experimental room. She was given the questionnaires and the instructions for each were read aloud verbatim by the experimenter. The subject was asked to complete all of the questions and return them to the experimenter before returning to class. Each subject was also given a mimeographed letter requesting that they not discuss the experiment with other students, and a promise that the study would be discussed with them at a later date (see Figure 5, Appendix).

All of the subjects were invited to attend a debriefing session which took place approximately two weeks following the conclusion of the study. At this session the subjects were introduced to the confederate, the real purpose of the study was explained, and questions raised by the subjects were answered.

#### *Pilot Study*

A pilot study was conducted to test the effectiveness of the experimental procedures. A total of 28 Education 200 students from the University of Victoria participated.

The subjects were assigned to one of five treatment conditions: (a) 100% Predictable, (b) 90% Predictable, (c) 50% Predictable, (d) 10% Predictable, and (e) 0% Predictable. A total of 14 subjects played only 20 trials of a

Prisoner's Dilemma game, and 14 subjects played 30 trials. All subjects played the game with a confederate of the experimenter. The procedure was similar to the one described earlier in this chapter.

The dependent measures employed in the pilot study were: (a) the complete Jourard Self-Disclosure Questionnaire (Jourard & Lasakow, 1958) and an additional target person (partner in the experiment), (b) the cooperative choice in the PD game, (c) a series of 8 semantic differential-type items, and (d) a 10-item Linkert-type scale developed by Kessel (1972). Based on the outcomes of the pilot it was concluded that:

1. The confederate was perceived as an actual player.
2. The number of trials presented should be at least 30.
3. The treatment levels should be 100% accurate, 50% accurate, and 0% accurate.
4. The study should include only female subjects.

There was some indication that males tended to rate the female confederate differently than female raters.

5. The self-disclosure scale should be modified to include only one target person (the subject's partner in the experiment).
6. The Kessel scale should not be included, as it seemed to be measuring a "generalized expectancy." This scale has been found to correlate with the Rotter I-T-S (MacDonald, Kessel & Fuller, 1972).

Based on the results of the pilot study, it was concluded that the experimental procedures were adequate to test the hypotheses.

## CHAPTER IV

### RESULTS

The means and standard deviations for performance on the 12 dependent variables were computed for each of the 3 treatment groups. These data are given in Table II.

In general, performance differences were found which favored the 100% Predictable group. Performance on the 12 dependent variables, collectively, was found to discriminate between the 100% Predictable group and the 50% Predictable group. The dependent variables were also found to discriminate between the 100% Predictable group and the 0% Predictable group. The dependent variables were not found to discriminate between the 50% Predictable group and the 0% Predictable group.

#### *Major Findings*

In order to test the general hypothesis that there would be a significant difference in performance between the 3 groups on the 12 dependent variables, the data were subjected to a one-way Multivariate Analysis of Variance (Clyde, 1970). The results of the overall multivariate test, based on the first root (first discriminant function), was significant ( $F = 4.08$ ,  $df = 24/62$ ,  $p < .001$ ). In the discriminant function analysis two functions emerged, the first significant

TABLE II

Means and Standard Deviations for Three Treatment Groups on Twelve Dependent Variables

Variable		100% Predictable		50% Predictable		0% Predictable	
Number	Description	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
1	Black-Black	9.00	4.84	9.20	5.00	8.00	2.54
2	Self Discl.	119.73	19.25	115.47	24.02	101.93	16.67
3	Partner Pref.	4.80	1.70	3.07	1.75	3.20	1.57
4	Sincere	5.67	1.05	5.00	.93	4.27	.96
5	Trustable	6.13	.74	4.67	1.35	3.53	1.19
6	Honest	5.87	.83	4.93	1.44	4.60	.74
7	Reliable	6.13	.83	4.67	1.68	3.33	1.45
8	Open	5.07	1.10	4.20	1.52	3.40	1.55
9	Consistent	6.27	1.03	3.60	1.88	3.87	2.03
10	Responsible	5.73	.88	4.73	1.10	4.00	.76
11	Predictable	6.33	.90	3.53	1.30	3.60	1.81
12	Dependable	5.80	.78	4.80	1.32	3.80	1.21

at the .001 level and accounting for 84% of the discriminatory power. That is, 84% of the total discriminatory power is attributable to the first discriminant function. The percentage of discriminatory power was calculated by use of the eigenvalues for the two discriminant functions  $(3.1346/[3.1346 + .6111]) = .84$ . The second function failed to reach significance ( $p = .107$ ) and accounted for 16% of the discriminatory power.

High statistical significance does not necessarily imply a large magnitude of difference. In order to assess the size of the difference, an index of the total discriminatory power,  $\omega^2$  multi., was used (Tatsuoka, 1971). In this analysis  $\omega^2$  multi. = .8392; thus about 84% of the total variability of the discriminant function is attributable to group differences. In other words, 84% of the proportion of variance of the criterion, which in this case is group differences, is extracted by the predictor variables.

A univariate analysis of variance was computed on each of the 12 dependent variables for the 3 treatment groups. The results of the analysis showed a significant difference between the 3 treatment groups on 10 of the 12 dependent variables ( $p < .01$ ). The 2 variables which did not reach significance were Black-Black and Self-Disclosure. The results of the univariate analyses are summarized in Table III.

The next step in testing the general hypothesis of a significant difference between the 3 treatment groups was

TABLE III

Results of the Multivariate and Univariate Tests of the Significance of the Differences Between the 100% Predictable, 50% Predictable and 0% Predictable Groups

<i>MULTIVARIATE TESTS OF SIGNIFICANCE USING WILKS LAMDA CRITERION</i>				
Test of Roots	<i>F</i>	<i>df</i> Hyp.	<i>df</i> Err.	<i>p</i> <
1	4.08	24.00	62.00	.001
2	1.75	11.00	31.50	.107

<i>UNIVARIATE F TESTS</i>				
Variable Description	<i>MS</i>	<i>F</i>	<i>p</i> <	% of Variance Accounted For
Black-Black	6.20	0.34	.714	1.6
Self-Discl.	1295.46	3.17	.06	13.1
Partner Pref.	13.96	4.98	.01	19.2
Sincere	7.36	7.67	.001	26.8
Trustable	25.49	20.26	.001	49.1
Honest	6.47	5.87	.006	21.8
Reliable	29.42	15.76	.001	42.9
Open	10.42	5.28	.009	20.1
Consistent	32.36	11.11	.001	34.6
Responsible	11.36	13.30	.001	38.8
Predictable	35.29	19.94	.001	48.7
Dependable	15.00	11.84	.001	36.1

Note: All Univariate *df* = 2/42

to perform a Stepwise Multiple Discriminant Analysis (Dixon, 1973). This analysis was conducted to determine the independent contribution of each of the 12 variables to the discrimination between the 3 groups. The purpose of the analysis was to determine if the list of 12 dependent variables might be reduced in number. The results are presented in Table IV. The  $F$ -values in Table IV indicate that 4 variables made significant independent contributions to the discrimination between the groups: Trustable, Predictable, Sincere, and Self-Disclosure. An examination of the group means (see Table II) for the 4 variables indicated that Trustable and Sincere discriminated between each of the 3 groups. The Predictable variable discriminated between the 100% Predictable group ( $\bar{X} = 6.33$ ) and both the 50% and 0% Predictable groups ( $\bar{X}_{50} = 3.53$ ;  $\bar{X}_0 = 3.60$ ). The variable of Self-Disclosure discriminated between the 0% Predictable group ( $\bar{X} = 101.93$ ) and the 100% and 50% Predictable groups ( $\bar{X}_{100} = 119.73$ ;  $\bar{X}_{50} = 115.47$ ).

Four variables which showed significant univariate differences between the groups (Reliable, Consistent, Responsible, and Dependable) did not make a significant contribution to the discrimination between groups. This was a result of shared variance with at least one of the variables which had already been included. On the basis of the correlations (see Table X, p. 45), Responsible was found to share 50.4% of its variance with Trustable, and 28.1% with Predictable. The Dependable variable overlapped 46.2% with

TABLE IV

The Rank Order of the Variables in Terms of Their Independent Contribution to the Discrimination Between the 100% Predictable, 50% Predictable and 0% Predictable Groups

Step Number	Variable Description	At Each Step		Cumulative	
		F-value	dfH/dfE	F-value	dfH/dfE
1	Trustable	20.28**	1/42	20.28**	2.42
2	Predictable	10.58**	2/41	14.89**	4/82
3	Sincere	3.34*	3/40	11.53**	6/80
4	Self-Discl.	3.02*	4/39	9.79**	8/78
5	Consistent	2.24	5/38	8.50**	10/76
6	Dependable	2.32	6/37	7.69**	12/74
7	Responsible	1.88	7.36	7.00**	14/72
8	Honest	.65	8/35	6.15**	16/70
9	Partner Pref.	.78	9/34	5.52**	18/68
10	Black-Black	.91	10/33	5.04**	20/66
11	Reliable	.51	11/32	5.56**	22/64
12	Open	.17	12/31	4.08**	24/62

\*  $p < .05$

\*\*  $p < .01$

Trustable and 30.3% with Predictable. The Consistent variable shared 51.8% of its variance with Predictable, and 31.4% with Trustable. The fourth variable, Reliable, shared 65.6% of its variance with Trustable, and 31.4% with Predictable.

The three specific research hypotheses were tested using the Multivariate Analysis of Variance (Clyde, 1970). The first analysis compared only the 100% Predictable group with the 50% Predictable group using the 12 dependent variables. The second analysis compared the 100% Predictable group and the 0% Predictable group. The third analysis compared the 50% and 0% Predictable groups.

*Analysis 1.* The hypothesis that subjects in the 100% Predictable group would score higher on the 12 dependent variables than subjects in the 50% Predictable group was supported ( $F = 5.46$ ,  $df = 12/17$ ,  $p < .001$ ). The discriminatory index ( $\omega^2$  multi.) indicates that about 78% of the total variability of the discriminant function is attributable to group differences. Because this analysis discriminated between only two groups, one function rather than two emerged.

Univariate  $F$  tests were performed on each of the 12 dependent variables. These data are given in Table V. Six of the dependent variables (Partner Preference, Trustable, Reliable, Consistent, Responsible, and Predictable) were found to be significant ( $p < .01$ ). The remaining six variables (Black-Black, Self-Disclosure, Sincere, Honest, Open,

TABLE V

Results of the Multivariate and Univariate Tests of the Significance of the Differences Between the 100% Predictable and 50% Predictable Groups

<i>MULTIVARIATE TESTS OF SIGNIFICANCE USING WILKS LAMDA CRITERION</i>				
Test of Roots	<i>F</i>	<i>df</i> Hyp.	<i>df</i> Err.	<i>p</i> <
1	5.46	12.00	17.00	.001

<i>UNIVARIATE F TESTS</i>			
Variable Description	<i>MS</i>	<i>F</i>	<i>p</i> <
Black-Black	0.30	.012	.912
Self-Discl.	136.52	.29	.596
Partner Pref.	22.53	7.57	.01
Sincere	3.33	3.42	.075
Trustable	16.13	13.66	.001
Honest	6.53	4.73	.038
Reliable	16.13	9.21	.005
Open	5.63	3.20	.085
Consistent	53.33	23.14	.001
Responsible	7.50	7.54	.01
Predictable	58.80	46.95	.001
Dependable	7.50	6.40	.017

Note: All Univariate *df* = 1/28

and Dependable) did not show significant differences at the  $p < .01$  level.

Results of a Stepwise Multiple Discriminant Analysis (Dixon, 1973) indicated that two of the dependent variables (Predictable and Trustable) made significant independent contributions to the discrimination between the 100% and 50% Predictable groups. These data are given in Table VI. Four variables which showed significant univariate differences between the two groups (Partner Preference, Reliable, Consistent, and Responsible) did not make significant independent contributions to the discrimination between the groups. This finding can be accounted for by the relatively high intercorrelations (see Table X, p. 45) with at least one of the two variables which had already been included.

*Analysis 2.* The second hypothesis, that there would be a significant difference between the 100% Predictable group and the 0% Predictable group on the 12 dependent variables, was supported. The discriminant function was significant ( $F = 16.94$ ,  $df = 12/17$ ,  $p < .001$ ) and accounted for 92% ( $\omega^2$  multi. = .9175) of the difference between groups.

Univariate  $F$  tests showed a significant difference between the two groups on 11 of the dependent variables ( $p < .01$ ). The Black-Black variable did not show a significant difference ( $p > .48$ ). The results of this analysis are given in Table VII.

The data were subjected to a Stepwise Multiple Discriminant Analysis. The results are presented in Table VIII.

TABLE VI

The Rank Order of the Variables in Terms of Their Independent Contribution to the Discrimination Between the 100% Predictable and the 50% Predictable Groups

Step Number	Variable Description	At Each Step		Cumulative	
		F-value	dfH/dfE	F-value	dfH/dfE
1	Predictable	46.95**	1/28	46.95**	1/28
2	Trustable	3.47*	2/27	27.28**	2/27
3	Self-Discl.	1.93	3/26	19.46**	3/26
4	Open	2.26	4/25	15.87**	4/25
5	Consistent	2.04	5/24	13.63**	5/24
6	Honest	2.09	6/23	12.22**	6/23
7	Dependable	1.25	7/22	10.77**	7/22
8	Partner Pref.	.61	8/21	9.33**	8/21
9	Sincere	.51	9/20	8.16**	9/20
10	Reliable	.69	10/19	7.30**	10/19
11	Responsible	.03	11/20	6.30**	11/18
12	Black-Black	--	--	--	--

\*  $p < .05$

\*\*  $p < .01$

TABLE VII

Results of the Multivariate and Univariate Tests of the Significance of the Differences Between the 100% Predictable and 0% Predictable Groups

<i>MULTIVARIATE TESTS OF SIGNIFICANCE USING WILKS LAMDA CRITERION</i>				
Test of Roots	<i>F</i>	<i>df</i> Hyp.	<i>df</i> Err.	<i>p</i> <
1	16.94	12.00	17.00	.001

<i>UNIVARIATE F TESTS</i>			
Variable Description	<i>MS</i>	<i>F</i>	<i>p</i> <
Black-Black	7.50	.50	.484
Self-Discl.	2376.27	7.33	.011
Partner Pref.	19.20	7.19	.012
Sincere	14.70	14.56	.001
Trustable	50.70	51.68	.001
Honest	12.03	19.44	.001
Reliable	58.80	42.14	.001
Open	20.83	11.54	.002
Consistent	43.20	16.65	.001
Responsible	22.53	33.32	.001
Predictable	56.03	27.56	.001
Dependable	30.00	29.17	.001

Note: All Univariate *df* = 1/28

TABLE VIII

The Rank Order of the Variables in Terms of Their Independent Contribution to the Discrimination Between the 100% Predictable and the 0% Predictable Groups

Step Number	Variable Description	At Each Step		Cumulative	
		F-value	dfH/dfE	F-value	dfH/dfE
1	Trustable	51.69**	1/28	51.69**	1/28
2	Dependable	6.63**	2/27	34.35**	2/27
3	Honest	4.62*	3/26	27.51**	3/26
4	Partner Pref.	3.43*	4/25	23.42**	4/25
5	Self-Discl.	6.45**	5/24	24.11**	5/24
6	Reliable	6.32**	6/23	25.60**	6/23
7	Predictable	4.24**	7/22	25.64**	7/22
8	Sincere	2.78*	8/21	24.58**	8/21
9	Consistent	2.46*	9/20	23.64**	9/20
10	Black-Black	1.15	10/19	21.55**	10/19
11	Responsible	.88	11/18	19.55**	11/18
12	Open	--	--	--	--

\*  $p < .05$

\*\*  $p < .01$

The  $F$ -values showed that 9 of the 12 dependent variables made significant independent contributions to the discrimination between the 100% Predictable group and the 0% Predictable group. The 3 variables which did not make significant independent contributions were: Black-Black, Responsible, and Open.

*Analysis 3.* The third hypothesis, that there would be a significant difference between the 50% Predictable group and the 0% Predictable group on the 12 dependent variables was not supported ( $F = 2.10$ ,  $df = 12/17$ ,  $p = .079$ ). The results of the multivariate and univariate tests are presented in Table IX.

#### *Findings of Minor Interest*

Pearson Product-Moment Correlation coefficients were computed for the combined performance of all groups on the 12 dependent variables. The resulting coefficients are given in Table X. None of the dependent variables was found to correlate significantly ( $r > .25$ ,  $p < .05$ ) with the Black-Black variable. The Partner Preference variable was found to be significantly correlated with 7 of the 12 variables (Self-Disclosure, Trustable, Reliable, Open, Consistent, Responsible, and Predictable). The Self-Disclosure variable correlated significantly with each of the other variables, with the exception of the Open-Closed variable. Significant correlations were found for all of the remaining 9 variables with the exception of 4 pairs. The 4 pairs which did not

TABLE IX

Results of the Multivariate and Univariate Tests of the Significance of the Differences Between the 50% Predictable and 0% Predictable Groups

<i>MULTIVARIATE TESTS OF SIGNIFICANCE USING WILKS LAMDA CRITERION</i>				
Test of Roots	<i>F</i>	<i>df</i> Hyp.	<i>df</i> Err.	<i>p</i> <
1	2.10	12.00	17.00	.079

<i>UNIVARIATE F TESTS</i>			
Variable Description	<i>MS</i>	<i>F</i>	<i>p</i> <
Black-Black	10.80	.69	.414
Self-Discl.	1373.61	3.22	.084
Partner Pref.	.13	.05	.828
Sincere	4.03	4.53	.042
Trustable	9.63	5.99	.021
Honest	.83	.64	.431
Reliable	13.33	5.44	.027
Open	4.80	2.04	.165
Consistent	.53	.14	.712
Responsible	4.03	4.53	.042
Predictable	.03	.01	.908
Dependable	7.50	4.69	.039

Note: All Univariate *df* = 1/28

TABLE X

Pearson Product-Moment Correlation Coefficients Among the Twelve  
Dependent Variables for Data Obtained in the Three Treatment Groups

Number	Variable Description	1	2	3	4	5	6	7	8	9	10	11	12
1	Black-Black	---											
2	Self-Discl.	-.09	---										
3	Partner Pref.	-.21	.29	---									
4	Sincere	.13	.45	.08	---								
5	Trustable	.01	.43	.36	.49	---							
6	Honest	-.10	.34	.12	.51	.39	---						
7	Reliable	.06	.35	.37	.42	.81	.27	---					
8	Open	-.16	.13	.25	.49	.64	.34	.57	---				
9	Consistent	-.12	.55	.44	.33	.56	.25	.47	.28	---			
10	Responsible	-.15	.55	.36	.42	.71	.46	.62	.41	.72	---		
11	Predictable	-.11	.38	.46	.15	.48	.23	.56	.20	.72	.53	---	
12	Dependable	.05	.41	.18	.49	.68	.09	.63	.45	.64	.58	.55	---

reach significance were: (a) Open-Closed with Predictable-Unpredictable, (b) Honest-Dishonest with Dependable-Undependable, (c) Sincere-Insincere with Predictable-Unpredictable, and (d) Honest-Dishonest with Responsible-Irresponsible.

## CHAPTER V

### DISCUSSION

The major purpose of the present study was to test the hypothesis that trust may be partially defined simply as the ability to predict. The present study was an attempt to clarify the contribution of prediction to more traditional definitions of the concept trust.

The results of the present experiment demonstrated the effectiveness of defining trust in terms of a person's ability to predict. The treatment consisted of three levels of predictability (100%, 50%, and 0%) and required subjects in each of the three treatment groups to rate a partner in an experimental setting on a number of traditional trust measures. Significantly higher performance was obtained by subjects in the 100% Predictable condition as opposed to subjects in both the 50% and 0% Predictable conditions.

The results suggest that the early rejection of predictability (Deutsch, 1958) as a component of a definition of trust may have been premature. The findings of the present study suggest that the subjective trust level of female high school students, with a relatively short period of training, can be increased or decreased by increasing or decreasing, respectively, the amount of predictability in a two-person

game situation.

Previous research cited earlier, e.g., Deutsch (1958), Loomis (1959), and Oskamp (1974), suggested that increases in information (increasing predictability) leads to increases in the number of cooperative (trusting) choices in the Prisoner's Dilemma game. The findings of the present study failed to show significant differences between the groups on the trusting choice (Black-Black) in the PD game. The failure to find significant differences on the Black-Black variable may be interpreted in several ways.

In the present study, the logical choice of subjects in the 0% Predictable condition, in order to end up in the Black-Black cell, was to select the black circle and predict that the "other" player would select the red circle. This combination would have resulted in both players ending up in the trusting, or Black-Black cell, that is, a choice of mutual benefit. An examination of the data did not support this explanation. It would seem that most of the subjects in the 0% Predictable condition did not learn the basic predictability of the treatment condition.

A second possible explanation could be that the rating scales and the Black-Black choice in the PD game were measuring different constructs or different kinds of trust.

A third explanation could be that the payoff (imaginary money) in the present study was not meaningful to the subjects. Statements made by several of the subjects following the completion of the study would support this explanation.

Subjects reported that they were more concerned with the prediction of the other player's choice than with the winning or losing of points.

The failure to find significant differences between the 50% Predictable and 0% Predictable groups may be due to the very atypical experience of being consistently wrong (0% condition). The hypothesis presented here, that predictability may be used to define trust, would suggest that subjects exposed to a situation in which they were always incorrect in their predictions would learn that it was 100% Predictable, and that their predictions (stated) would be incorrect. The results indicated that those subjects in the 0% Predictable condition viewed the situation as unpredictable. It is possible that given an increased number of trials than they experienced in this experiment, they might have discovered the 100% predictability of never being able to be correct in their choices in the situation. It would be expected that this would lead to trust-type behavior similar to that of subjects in the 100% Predictable group.

It is of interest to note that several of the subjects in the 0% Predictable group exhibited emotional reactions characterized by slowness to respond, sighing, head shaking, and verbal comments that would suggest a distraught emotional state. These behaviors were not observed in subjects in the other two treatment groups.

The implications of these findings to relationships where trust is a major concern (e.g., counseling, teaching,

parenting) deserves serious consideration. The establishment of trust would seem to be partly dependent on whether or not the person to be trusted behaves in a consistent and predictable fashion. The counselor, teacher, or parent interested in building a trust relationship might consider a concentration of his efforts to acting in a consistent manner which can be predicted by the truster.

A major contribution of the present study was the demonstration of the effectiveness of operationally defining the hypothetical construct, trust, as the ability to predict. In this study it was demonstrated that trust behavior, traditionally measured, can be largely accounted for by an intervening variable called predictability. Findings such as those presented here are consistent with a theory of behavior presented by Tolman (1932).

Tolman believed that hypothetical constructs, or cognitions, were important to a model of behavior. However, he has suggested that in order for a construct to be of use in understanding behavior the specific hypothetical construct must be operationally defined by the experimenter, and considered as an intervening variable.

Three separate Stepwise Multiple Discriminant Analyses were conducted in order to determine if the list of 12 dependent variables might be reduced in number. The results of these analyses were not conclusive.

### *Implications for Future Research*

The findings reported in this study were obtained from an experimental setting somewhat different from the normal counseling situation. Future research might examine whether the results observed in this study hold in the actual counseling situation, or in situations more typical of normal social interactions involving trust.

Some questions not answered by the present research were whether the results obtained here apply when: (a) male subjects are included, (b) the experimenter is of a different sex or familiar to the subjects, (c) different age groups are used, (d) the number of trials is increased, and (e) the payoffs are made more meaningful.

An important question not answered by this study was whether subjects in the 0% Predictable condition, given additional experience with the game, would have learned the basic predictability of the situation.

Another area for additional investigation would be to examine the relationship between the subjective rating scales and actual behavior. For example, would subjects who score high on a self-disclosure scale actually tell more about themselves to a partner than subjects who score low?

### *Summary and Conclusions*

Although the importance of trust in accounting for many aspects of the counseling relationship has been widely accepted, to date there has been little consensus regarding

the nature of this concept. The lack of theoretical and experimental knowledge concerning the concept of trust has prohibited potentially valuable attempts to explain or describe various aspects of behavior in the counseling situation in a more rigorous manner.

In the present study, evidence has been presented to suggest that the hypothetical construct, *trust*, can at least partially be effectively defined as the ability to predict. Subjects in a 100% Predictable treatment condition were found to perform significantly higher on traditional measures of trust-type behavior than subjects in either a 50% or 0% Predictable treatment condition. From these findings, it was suggested that counselors, teachers, parents, and other persons who are interested in establishing a trust relationship should concentrate on behaving in ways which are consistent and can be perceived as predictable by another person.

Further work is needed to determine if subjects in an initially unpredictable situation would perform differently once they were able to see the 100% predictability of being incorrect all of the time. Additional research is also required to determine if results found in the present study hold when additional factors such as age, sex of subject, number of trials, sex of experimenter, and meaningfulness of rewards are considered. The effectiveness of the definition presented here needs to be examined in situations which more closely approximate the actual counseling relationship.

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APPENDIX

FIGURE 4 The Data Sheet

DATA SHEET

	<u>Person I</u>	<u>Person II</u>	Sect. _____
1.	_____	_____	
2.	_____	_____	
3.	_____	_____	
4.	_____	_____	
5.	_____	_____	
6.	_____	_____	
7.	_____	_____	
8.	_____	_____	
9.	_____	_____	
10.	_____	_____	
11.	_____	_____	
12.	_____	_____	
13.	_____	_____	
14.	_____	_____	
15.	_____	_____	
16.	_____	_____	
17.	_____	_____	
18.	_____	_____	
19.	_____	_____	
20.	_____	_____	
21.	_____	_____	
22.	_____	_____	
23.	_____	_____	
24.	_____	_____	
25.	_____	_____	
26.	_____	_____	
27.	_____	_____	
28.	_____	_____	
29.	_____	_____	
30.	_____	_____	

## FIGURE 5 Letter to the Subjects

Dear Student:

Thank you for taking time out from your studies to take part in this experiment. I am sorry that I do not have enough time today to talk with you in more detail about the purpose of the experiment. I will be sending a copy of the results of the experiment to the counselor at your school so that she may share them with you. I am also trying to arrange a time in the next week or two when I can meet with all of the people who have helped me in this experiment. At that time I will discuss the experiment in more detail, and answer any questions you may have.

It is important to the outcome of the experiment that other students who may take part have no experience with the game or the questionnaires. I would appreciate it if you would not discuss the experiment with other students.

Thank you again for your help. I will let you know when I can arrange for a time to meet with you to discuss the results of the experiment.

Sincerely,

Bill Goss

## FIGURE 6 The Modified Self-Disclosure Scale

The answer sheet which you have been given has a column with the heading, "Would Tell My Partner in this Experiment." You are to read each item on the questionnaire, and then indicate on the answer-sheet the extent to which you would be willing to make yourself known to that person if you were to meet them again. Use the rating scale that you see on this page to describe the extent that you would be willing to tell about each item.

## RATING SCALE

- 1 = I would be willing to tell the other person nothing about this aspect of me.
- 2 = I would be willing to tell in general terms about this item. The other person would have only a general idea about this aspect of me.
- 3 = I would be willing to tell the other person in full and complete detail about this item. The other person would know me fully in this respect and could describe me accurately.

Sect. \_\_\_\_\_

1 = I would tell my partner in this experiment NOTHING about me.

2 = I would tell my partner in this experiment in GENERAL TERMS about me.

3 = I would tell my partner in this experiment in FULL DETAIL about me.

	I would tell my partner in this experiment		
	Nothing 1	Generally 2	Fully 3
<b>ATTITUDES &amp; OPINIONS</b>			
my religion			
other religious groups			
communism			
present government			
racial integration			
drinking			
sexual morality			
desirable qualities in a man			
desirable qualities in a woman			
how parents should raise kids			
<b>TASTES &amp; INTERESTS</b>			
food preference			
beverage preference			
music preference			
reading preferences			
movies I like			
taste in clothes			
house & furnishings I like			
social gathering preferences			
ways I like to spend spare time			
presents I would like			
<b>PERSONALITY</b>			
parts of me I dislike			
feelings I have trouble expressing and controlling			

	I would tell my partner in this experiment		
	Nothing 1	Generally 2	Fully 3
feelings of attractiveness			
things I feel ashamed about			
things that make me furious			
things that make me depressed			
things that worry me			
how my feelings get hurt			
things I am proud of			
<b>MONEY</b>			
how much I make			
how much I owe			
who I owe to			
amount of savings			
amount others owe me			
my gambling habits			
my total income			
my financial worth			
my greatest need for money now			
how I budget my money			
<b>WORK OR STUDIES</b>			
pressures & strains of work			
most boring aspects			
most enjoyable part			
my shortcomings			
my qualifications			
how I am (not) appreciated			
my ambitions			
my feelings on salary			
my feelings on career			
my feelings about co-workers			

	I would tell my partner in this experiment		
	Nothing 1	Generally 2	Fully 3
<b>BODY</b>			
my feelings about my face			
how I wished I looked			
feelings about different parts of my body			
worries about my appearance			
health problems I have			
long-range concerns about health			
past illnesses			
my efforts to stay fit, healthy, attractive			
my present physical measurements			

FIGURE 7 The Semantic Differential Scales

On this sheet you are asked to rate your partner in this experiment. There are nine pairs of words. For each pair of words place a tick (✓) mark at the point on the line which seems closest to your opinion of the other person.

PAIR 1 \_\_\_\_\_  
(Sincere) \_\_\_\_\_ (Insincere)

PAIR 2 \_\_\_\_\_  
(Trustable) \_\_\_\_\_ (Untrustable)

PAIR 3 \_\_\_\_\_  
(Dishonest) \_\_\_\_\_ (Honest)

PAIR 4 \_\_\_\_\_  
(Reliable) \_\_\_\_\_ (Unreliable)

PAIR 5 \_\_\_\_\_  
(Closed) \_\_\_\_\_ (Open)

PAIR 6 \_\_\_\_\_  
(Consistent) \_\_\_\_\_ (Inconsistent)

PAIR 7 \_\_\_\_\_  
(Irresponsible) \_\_\_\_\_ (Responsible)

PAIR 8 \_\_\_\_\_  
(Predictable) \_\_\_\_\_ (Unpredictable)

PAIR 9 \_\_\_\_\_  
(Undependable) \_\_\_\_\_ (Dependable)

Sect. \_\_\_\_\_



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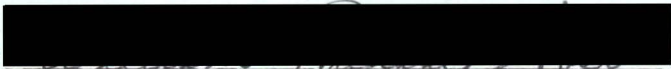
AN EXPERIMENTAL STUDY OF TRUST DEFINED AS THE

---

ABILITY TO PREDICT

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Author:

  
Signature

WILLIAM RICHARD GOSS

Name

17/9/75  
Date