A STUDY OF THE VALIDITY OF THE CHILDREN'S INTERPERSONAL TRUST SCALE

By

SUSAN SKINNER

Bachelor of Science

Oklahoma State University

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Thesis Approved:

Kenneth L. Sandvold
Thesis Adviser

Donald K. Fromme

Julia L. McHale

N. N. Durham
Dean of the Graduate College

PREFACE

Interpersonal trust is an important factor in man's societies. This study was done in an attempt to gather information regarding the usefulness of the Children's Interpersonal Trust Scale in measuring trust in children. If the CITS is found to be a valid instrument for measuring trust, it would be useful in predicting behavior in many situations.

I would like to express my appreciation to my adviser, Dr. Kenneth Sandvold, and the remaining members of my committee, Dr. Julia McHale and Dr. Donald Fromme, for the time, helpful ideas, and support they have given me in the preparation of the thesis.

I would also like to thank Dr. Dorothy Hochreich for making the CITS available to me for study. As locating subjects proved to be a difficult task, I want to express my gratitude to the Boy Scouts of America and the Royal Ambassadors for their cooperation and assistance.

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CHAPTER I

STATEMENT OF THE PROBLEM

Purpose of the Study

The purpose of this study was to collect validity data regarding the Children's Interpersonal Trust Scale. Criteria used to measure validity were the Prisoner's Dilemma Game, personal space, and the trust walk. The Children's Interpersonal Trust Scale (CITS) was developed by Hochreich (1966) to measure trust in children. The scale is based upon Rotter's definition of trust. Rotter (1967) defines interpersonal trust as "... an expectancy held by an individual or a group that the word, promise, verbal or written statement of another individual or group can be relied upon."

Man lives in societies and is therefore in close contact with other people. Cooperation and trust are necessary for a society to function smoothly. Rotter (1971) has pointed out that the importance of trust increases with the complexity of the society.

People differ in the degrees of trust they place in others. Rotter (1967) developed the Interpersonal Trust Scale to measure trust in an adult population. His scale consists of forty items using a Likert format. A wide variety of social situations and objects were utilized in order to tap a variety of social situations with which an individual might have experience.

Data gathered by Rotter (1967) through the Interpersonal Trust Scale indicate that trust may vary predictably. Individuals who have no religious preference or whose parents are of differing religions tend to show a lesser degree of trust in others. Also generalized trust tends to decrease as one travels down the socioeconomic ladder (Rotter, 1967).

In a six year study, Rotter (1971) administered his Interpersonal Trust Scale to incoming college freshmen. His results indicate that, although the population samples have remained very similar in composition, every year shows a significant drop in the mean trust scores. Rotter (1971) feels these decreases in interpersonal trust may be harmful to our society.

Children vary in degrees of trust also. The amount of trust a child has in others can affect his behavior in many areas. How a child behaves in school and how much he learns may be affected by how trustworthy he perceives teachers to be. Much of man's learning is based upon statements made by other people and what is learned is affected by how much he believes what he is told (Rotter, 1967). A child's peer relationships are affected by how trusting he is of other children. A non-trusting child would be difficult to treat in psychotherapy because he would tend to not believe what the therapist tells him. The "generation gap" may be due, in part, to a lack of trust of children in their parents. If a child feels his parents cannot be trusted, it would be difficult for meaningful communication to develop.

Development of the Children's Interpersonal Trust Scale

The Children's Interpersonal Trust Scale consists of twenty-two

items which depict stick figures in a variety of situations. Twelve of the stick figures depict male children and ten depict female children. Each item consists of a statement being made to the child in the picture. The child taking the test is to choose one of four statements offered in multiple choice form which best represents what he would be thinking in the situation. Two of the statements represent a trusting response and two represent a non-trusting response (Hochreich, 1966).

Hochreich (1966) originally included twenty-five different situations with four additional test items. Two items were designed to detect over-compliance in a child's test taking behavior and two were to detect negativistic attitudes toward the scale. The original CITS stick figures were on 5"x8" cards. The cards were presented to subjects one at a time. The examiner read aloud the statement made in each situation and the subject replied verbally with his idea of what the child in the situation might be thinking to himself. Following the administration of the free-response CITS, the Children's Social Desirability questionnaire was filled out by each subject. Each child's responses were scored as either irrelevant to trust, trusting or non-trusting by Hochreich and her assistants. A child's percentage of trusting responses was his score on the scale.

Hochreich (1966) found a .075 biserial correlation between trust scores and Children's Social Desirability scores. Hochreich (1966) has stated that this low correlation does not indicate that social desirability was not a variable in test-taking behavior as the validity of the measure of social desirability has not been fully explored. The four items designed to detect over-compliance and negativistic attitudes were not included in the later multiple-choice form of the CITS because

inappropriate responses on these items showed no relationship to extreme trust scale scores. Also eliminated from the later scale were items which elicited responses irrelevant to trust and items which showed a strong tendency to "pull" responses in either a trusting or non-trusting direction. Multiple choice statements used in the twenty-two item scale were taken from the free responses given most frequently by children in the twenty-nine item scale (Hochreich, 1966).

In collecting her preliminary validity data, Hochreich (1966) applied the delayed choice paradigm and a situation using water pistols which involved the child's belief in a statement made by the experimenter. The delayed choice situation involved the experimenter's offering the child a one cent candy bar which he could have the same day or a five cent candy bar which he could have a week later. Hochreich (1966) defined a trusting response in this situation as one in which the child chose the delayed reward. The water pistol criterion for trust involved the use of three water pistols which were placed before the child. The experimenter told the child that two water pistols were filled with water and one was empty. The empty water pistol was pointed out by the experimenter and the child was asked to pick it up, point it at his own face, and pull the trigger. Hochreich (1966) hypothesized that a child who hesitated or gave other indications that he did not believe the experimenter's statement that the pistol was empty would tend to be less trusting of other people.

Hochreich's (1966) results indicate that the CITS has an uncorrected split-half reliability coefficient of .78, and when corrected by the Spearman-Brown prophecy formula, a correlation of .88 was found. Item reliabilities indicate that 19 of the 22 items are correlated at less

than a .01 level of significance with the total score. The author's hypothesis that children who scored higher on the CITS would tend to choose the delayed reward was not fully supported by the data, but the results were in the predicted direction and statistical significance was approached. Hochreich's (1966) results indicated that the use of the water pistols did not seem to be a good behavioral measure of trust. As the author suggests, her results may have been affected by contaminating factors such as the children's being in the protected environment of the school or attempts by the children to not appear greedy by choosing the greater candy reward. Hochreich (1966) found no significant sex differences in CITS scores for her subjects.

Trust is an important facet of our society. A measure for trust in children would be a valuable tool in predicting ranges of behavior of individuals. Hochreich (1966) and Rotter (1971) have suggested that further research is needed before the value of the CITS can be determined. More research is needed in the area of interpersonal trust and its predictability.

Review of the Literature on the Prisoner's Dilemma Game

The Prisoner's Dilemma Game has been useful in studying competition and cooperation. The game is regarded as a mixed motive game because the players have to choose between increasing the total gains of both players and increasing their own immediate gains (Bixenstine, Potash, and Wilson, 1963). Deutsch (1960) has suggested that trust is a factor in whether an individual plays the game cooperatively or competitively. A player who attempts to maximize his gain will cause both

players to lose, however, a player making cooperative choices risks maximum loss unless he can trust the other player (Deutsch, 1960).

The general form of the Prisoner's Dilemma Game is illustrated in Figure 1.

		Player II	
		A	B
Player I	X	(X_1,X_1)	(X_2,X_3)
	Y	(X_3,X_2)	(X_4,X_4)

$2X_1>X_2+X_3>2X_4$, $X_3>X_1$, $X_3>X_2$, $X_4>X_2$

Figure 1. Prisoner's Dilemma Game Form (Evans, 1964)

When the sumbols in Figure 1 are explained as specific choices made by players, the game procedure is clarified. Two people play the game which consists of a number of choices between two colors of poker chips with differing point values resulting. For example, if red poker chips are defined as a cooperative choice and blue poker chips are defined as an uncooperative choice, the following results would occur. If both players choose red poker chips ($2X_1$), they profit equally in terms of points; and, if this response is continued, in the long run both players will attain a greater score. A choice of a red chip by one player and a blue chip by the other (X_2+X_3) gives points to the blue chip player and no points to the red chip player. If both players choose blue chips ($2X_4$), neither individual earns any points. The game positions of $X_3>X_1$, $X_3>X_2$, and $X_4>X_2$ are illustrative of one player's choosing a blue chip and earning points while one player chooses a red chip and earns none.

The game has been applied in many studies and many factors have been found which can influence whether an individual plays cooperatively or competitively. One influence of game behavior is the type of

reward given. Monetary rewards have been found to increase cooperative playing (McClintock and McNeel, 1966a; Radlow, Weidner, and Hurst, 1968). Rapaport and Dale (1966) found that there is an "end" effect when subjects know how many trials to expect. They suggest that players are cooperative initially, followed by a decline in cooperation which remains constant until the end of the game when cooperation ceases.

Sequential choices rather than simultaneous choices may also affect cooperation (Kee and Knox, 1970). Kee and Knox (1970) indicate that meaningful incentives as well as sequential choices increase the game's applicability to studies of trust. These authors differentiate two types of trust evident in game playing. "Subjective trust" is one's decision that someone is trustworthy and "behavioral trust" is the amount of trust one must feel he has in someone before a trusting decision is actually made. Swinth (1967) also supports findings that sequential choices can increase trusting or cooperative playing.

Knox and Douglas (1971) have found additional variables which influence game behavior. Subjects tend to play similarly and competitively when they receive low incentives. With large incentives, Knox and Douglas (1971) found more variance. Subjects were found to become either more cooperative or more competitive. These authors have also stressed the importance of the subject's understanding instructions for the game. McClintock and McNeel (1966b) also conducted a study of reward levels and their results indicated subjects who received high rewards were more cooperative than subjects who received low rewards.

A study by Oskamp and Perlman (1965) offers further support for the hypothesis that larger rewards increase cooperative playing. Other

results of this study indicate that friendship between subjects does not increase cooperative playing, a small amount of social interaction at the beginning of the game may increase cooperative playing, and competitive playing may increase within a span of thirty trials. Swinth (1967) supports the hypothesis that communication in terms of expected trust may increase trust between players. The explanation offered for these results is that trust may be established between the players if they are able to expose their "selves" to each other and the exposure is met with acceptance (Swinth, 1967). If an enforceable promise of cooperative playing is made and followed, cooperation and trust feelings are increased (Evans, 1964). Evans (1964) suggests trusting responses in the Prisoner's Dilemma Game are difficult to establish if the player fears his opponent will not act on his promise of cooperative playing. Horai (1969) has also found that cooperative playing is increased if promises made are kept. Even under circumstances where people may not be overtly concerned with others' welfare, mutual trust may occur if one expects one's trust to be fulfilled (Deutsch, 1958).

In a study by Bixenstine, Potash, and Wilson (1963), no changes in the number of cooperative responses were found in relation to the number of cooperative or competitive responses made by the subject's partner. However, if the subject's partner matched the subject's responses, cooperation increased.

Some controversy exists concerning the dynamics of the Prisoner's Dilemma Game and its value in research. Deutsch (1960) suggests that the aspects of personality which the game taps are "... internalizations of a reciprocal pattern of interrelationships" rather than one-sided internalized orientations or expectations. The possibility exists

that the game taps behavior specific to a laboratory situation (Hochreich, 1966). Also the game may be irrelevant to the study of trust or it may produce competitive reactions because of its characteristics (Rotter, 1971). Knox and Douglas (1971) warn that caution should be exercised in generalizations using the game and relegate its usefulness to the position of a parlor game.

Despite these criticisms of the Prisoner's Dilemma Game, it has been widely used in studies of cooperation and trust. The question of whether or not the game is relevant to studies of trust has not been resolved. Its use in the present study will allow a more direct comparison with past research results.

Review of the Literature on Personal Space

Personal space is an area of psychology which has been widely studied. Hall (1959) has said, while physical boundaries separate all living things from their environment, some animals also have non-physical boundaries which enclose their territory. Territoriality plays an important role in the lives of many animal species, including man (Ardrey, 1967). Sommer (1959) differentiates territory and personal space by the mobility of personal space. He says that personal space is carried with the organism while territory is stationary. Little (1965) defines personal space as "... the area immediately surrounding the individual in which the majority of his interactions with others take place." Dosey and Meisels (1969) and Horowitz, Duff, and Stratton (1964) see personal space as acting as a buffer zone between the individual and his environment.

Many studies have been carried out to gain more information about

personal space. Research indicates that people may display a variety of reactions such as avoidance, fear, embarrassment, and anger when their personal space is invaded (Garfinkel, 1964). Felipe and Sommer (1966) found that people may initially react to invasions of their personal space by attempting to adapt; but, if the tension created by the invasion persists, they will leave exhibiting a "flight reaction." A study by Hartnett, Bailey, and Gibson (1970) suggests that females will allow deeper penetration of their personal space than males due to their more passive upbringing. Dosey and Meisels (1969) have also found sex differences in personal space. They account for their findings that females approach closer to same sexed persons than those of the opposite sex while the approach distance of males is the same for both sexes by suggesting females have a cultural norm to be distant with unknown males. Research also indicates that personal space boundaries are narrower with neutral inanimate objects than with people (Horowitz, Duff, and Stratton, 1964).

Kuethe (1962a) found that subjects arranged felt figures on a board in an organized fashion although the figures could be placed any way. Kuethe (1962b) also found that the content of the figures determined how the subjects arranged them in that figures of two women were not placed as closely together on a board as a woman figure and a man figure. Perceived personal space may also vary with the particular setting and how well acquainted people are seen as being (Little, 1965). The affective tone and formal nature of a situation can also affect perception of distances between people (Little, 1968).

Other variables have been found to influence personal space. Culture affects the distance at which individuals feel comfortable with

others (Watson, 1970). Further variables acting on an individual's personal space are drives, individual history, and interpersonal occurrences (Horowitz, Duff, and Stratton, 1964). Emotionally disturbed children may see humans as less trustworthy and supportive so they place greater distances between human figures (Weinstine, 1965). Children who feel accepted by their parents tend to see human pairs as being closer together than they actually are (Weinstine, 1967). Horowitz, Duff, and Stratton (1964) found that personal space distances tend to be greater for schizophrenic subjects than for non-schizophrenic subjects.

Review of the Literature on the Trust Walk

Little information is available regarding the trust walk. The trust walk is a variation of the blind walk used in sensitivity training. The blind walk consists of one person's leading another person whose eyes are closed. The walk may last for ten to thirty minutes and no talking is to be allowed during the walk (Gunther, 1968). The blind walk's major concern is the sensory experience of the person who is being led. The trust walk procedure is the same as that of the blind walk, however the primary concern of the trust walk is that the person being led is dependent upon his leader to safely walk with him (McHale, 1971). The ease with which he can accept this dependent situation is defined as trust.

Summary of the Problem

Trust is an important factor which affects man's behavior toward others. A scale which could measure interpersonal trust in children would be useful in predicting a child's behavior in many areas such as

school, psychotherapy, and peer groups. The validity of such a scale needs to be clearly established before it is practically applied.

The Prisoner's Dilemma Game, personal space, and the trust walk seem to have the potential to be satisfactory criteria for validation of the CITS. The literature concerning the Prisoner's Dilemma Game indicates some controversy as to its usefulness in research; however, because it has been widely studied and many factors affecting its dynamics are known, it could be of use in studying trust. Personal space can be affected by the feelings of trust an individual has as well as by culture, environment, sex, and many other variables. By measuring a child's personal space boundaries, information regarding his trust in other people may be obtained. The trust walk can bring out differences in behavior which are indices of trust. The author has observed that an individual who is relaxed rather than rigid and hesitant during the trust walk seems to be more trusting of the person who is leading him.

Statement of the Hypothesis

The hypothesis of this study is that positive correlations between CITS scores and criterion measures would occur and therefore the validity of the CITS would be supported. The present study involved the administration of Hochreich's CITS to children of elementary school age. One week later, further measures of trust were taken using the Prisoner's Dilemma Game, personal space, and the trust walk. It was predicted that children with low scores on the scale would be less cooperative in the Prisoner's Dilemma Game, have broader boundaries of personal space, and behaviorally indicate distrust in the trust walk; and, that children with higher scores on the scale would be more cooperative

in the Prisoner's Dilemma Game, have narrower personal space boundaries, and be relaxed during the trust walk.

CHAPTER II

METHOD AND PROCEDURES

Subjects

The experimental subjects were 32 fifth and sixth grade boys from 6 Boy Scout troops and 1 church youth group in a southwestern city with a population of 50,000. Permission from the parents of prospective subjects was necessary before the boys could participate in the study. Seven boys did not participate due to their parents' withholding their permission. All subjects were Caucasian and were naive in regard to the purpose of the study.

Experimental Assistants

Four male Caucasian experimental assistants aided in the conduction of the experiment. Male assistants were used in order to control for any variation in a child's performance which might be due to sex differences. One assistant administered the CITS. The other three assistants aided the author in the Prisoner's Dilemma Game, the personal space study, and the trust walk. Each assistant's task was randomly assigned to him and he retained that task throughout the study. The assistants differed in size and appearance. The administrator of the CITS was 25 years old, 6 feet tall, slender, with short hair and a moustache. The assistant for the Prisoner's Dilemma Game was 22 years old, 5 feet, 6 inches tall, slender, with hair of medium length. The personal space

assistant was 26 years old, 5 feet, 7 inches tall, slender, with short hair. The trust walk assistant was 22 years old, 6 feet, 2 inches tall, heavy, with long hair and a moustache. All assistants were dressed casually and similarly throughout the study.

Procedure

Each assistant was given an opportunity to practice his task prior to the actual study. To familiarize the assistants with the study, a group meeting was held and the entire procedure involving their tasks was discussed. The tasks were then randomly assigned and each assistant was instructed as to his exact duties. Following these instructions, each assistant practiced his task three times with the author acting as a subject. When no more questions were raised as to procedure, the practice session was ended.

The subjects were seen at the locations of their group meetings. For each group of boys used, the study was carried out in a room separate from boys who were not participating in the study. The number of subjects in each group varied because of differences in the meeting groups. Some groups had few boys of the desired age, group sizes varied, and some boys were unable to participate due to a lack of parental permission. A total of 7 groups of subjects were used. The number of boys in each meeting group and under study at one time were 3 boys in the first group, 4 boys in the second group, 6 boys in the third group, 4 boys in the fourth group, 6 boys in the fifth group, 3 boys in the sixth group, and 6 boys in the seventh group.

The CITS was administered to the boys as a group. The Prisoner's Dilemma Game, personal space, and the trust walk were administered

individually. These three criterion measures were grouped in their six possible combinations, and these orders of presentation were randomly assigned to individual subjects. Each assistant actively participated in only one part of the study to prevent trusting or non-trusting relationships from developing in terms of a particular individual. This procedure was included to control for possible sequence effects in terms of contact with the assistants.

Instructions for the written test were adapted for use with boys from Hochreich's (1966) study. The instructions which were read to the subjects were:

> I'm _____ from Oklahoma State University. I'm interested in learning something about boys' opinions, and I'm going to ask your help in doing this. This is not a test, and there are no right or wrong answers. You all know that people very often have different opinions about things. So I'd like you to put down what you really think.

The test booklets and pencils were then passed out to the subjects. They were then asked to follow along as the examiner read the test instructions aloud. These instructions were:

> We are interested in finding out the different ways in which young people think about things that could happen to them in their everyday lives.
>
> On the following pages, you will see a series of cartoons. In each of these cartoons, people are talking to each other. First, read what one person is saying to the other. Then look at the four sentences listed below the cartoon. These are the kinds of things that the child in the cartoon might be thinking to himself. Choose the sentence which you feel says best what you would be thinking if you were that child, and circle the letter of that sentence (a, b, c, or d). You should circle only one answer for each cartoon. Please read each one carefully, and do not skip any of the items.
>
> There are no right or wrong answers; all of the answers are all right. Pick the one that comes closest to what you would really be thinking. Remember that we are interested in what you would be thinking or saying to yourself ... not what you would really say out loud or what you would do, but what you would be thinking to yourself.

There was no time limit on the test. The scoring procedure involved a score of 4 for the most trusting response on an item, a score of 3 for a less trusting response, a score of 2 for an untrusting response, and a score of 1 for the most untrusting response. Hochreich (1966) scored the CITS by scoring 1 for a trusting response and 0 for an untrusting response. The scoring procedure for the present study was devised in order to give further differentiation between scores. The scores of 1, 2, 3, and 4 were seen as providing sufficient differentiation for the study. This scoring procedure was developed by having 3 individuals independently evaluate the answer choices on the test. Each individual rated the test answers from least to most trusting (1, 2, 3 or 4). When at least two of the three persons agreed on a point value for an answer, that value was used in the scoring procedure. For each subject, a total test score and a score using only the items with male figures were derived. This step was taken to enable the author to find if the sex of the stick figures affects the accuracy with which the test measures trust.

One week after the administration of the CITS, the subjects participated individually in the Prisoner's Dilemma Game, the personal space study, and the trust walk. Equipment used in the Prisoner's Dilemma Game consisted of a card table, two chairs on opposite sides of the table, 24 blue poker chips, 24 red poker chips, and a barrier measuring 18" x 4" x 12" which was placed on the table between the assistant and the subject. The subject and assistant were asked to be seated at the table. The poker chips were divided between the subject and the assistant with both players receiving half the blue chips and half the red chips.

Instructions, as adapted from Tedesco (1971), were read to the subject by the author. These instructions were:

> There are two of you who are going to play a game in which you can either win points or lose points. Here is how the game is played. There are two of you, and how many points you win or lose is determined not only by what you yourself do, but also by what the other person does.
>
> If you and the other player both choose red poker chips, you both get 9 points. If you choose a red chip and the other player chooses a blue chip, you get 0 points and the other player gets 10 points. If you choose a blue chip and the other player chooses a red chip, you get 10 points and the other player gets 0 points. If you both choose blue poker chips, you both get 0 points.
>
> After you select a poker chip, keep it hidden in your hand until I tell you it is all right to show your choice. When I tell you to, show the poker chip which you have chosen. Are there any questions?

A color coded diagram showing the scoring procedure was provided for the subject and was taped to his side of the barrier for easy viewing. The experimental assistant gave a set response on each trial. Thirty trials were given and thirty responses had been randomly determined for the assistant prior to the actual study. The assistant's responses were written on his side of the barrier so he could play the game identically with every subject. The subject's score for the Prisoner's Dilemma Game portion of the study was the number of red (cooperative or trusting) poker chip choices he made in thirty trials.

Each subject also participated in the personal space portion of the study. The equipment involved in this criterion study was a sheet of paper measuring 72" x 24" on which vertical lines 1" apart were drawn. The lines were enumerated in 3" groups and a jagged line crossed all vertical lines so the measuring sheet appeared to be a graph. This step was taken so the sheet of paper would be less obvious as a measuring device. The paper was taped to a wall of the room in which the study

was carried out. The assistant stood at the 0" line of the paper and the subject was led to the 72" mark so he stood 6' away from the assistant. The subject and assistant faced each other and instructions were read to the subject. These instructions were, "Walk slowly towards the other person; when you reach him, stop and wait until I tell you to return; then return to your position" (Dosey and Meisels, 1969). The assistant's eye contact was controlled by having him look into the subject's eyes for 1 second and down at the floor for 1 second. At whatever point the subject stopped while approaching the assistant, a measurement was taken to the nearest 1" mark on the paper sheet. The subject's score in personal space was the final distance he stood away from the assistant.

Every subject participated in the trust walk. Equipment used in the trust walk was a blindfold and a stopwatch. Each subject was blindfolded and led about the testing room by an assistant for 3 minutes. The assistant led the subject by placing one hand on the subject's left forearm and one hand on the back of the subject's right shoulder leaving the boy's right arm free.

The subject's behavior while walking was observed by the author and another assistant. The subject's behavior was independently rated by the author and an assistant. Behaviors which were rated were feet shuffling, the free arm's being used to feel space, body angle (the lower portion of the body preceding the upper portion), and the subject's having to be pulled alongside the assistant who was leading him.

Each subject began the trust walk with 10 points. For feet shuffling, free arm out, and body angle, 3 points for each behavior present were subtracted from his score. The scores of the 2 observers were then

averaged. Only 1 point was subtracted from the subject's score if he had to be pulled by the leader and this behavior was rated by the leader. This behavior was assigned 1 point to avoid giving too much weight to a single judge in the scoring procedure. Behaviors were determined to be present if, in the subjective opinion of the judges, they were being exhibited. Instructions which were read to the subject by the author were, "I am going to blindfold you for a while. You will be led about the room for a time and I will tell you when to stop." The subject was led by an assistant in a rough figure-eight pattern with furniture in the room present as obstacles which he was helped to avoid by his leader.

In summary, the scoring procedure for each subject involved recording his score on the CITS (total score and male items only), the number of times he chose a red poker chip in the Prisoner's Dilemma Game, the final distance between him and the assistant in personal space, and his remaining points following the 3-minute trust walk. The higher the subjects' scores on the CITS, Prisoner's Dilemma Game, and the trust walk, and the lower his score in personal space, the more trusting he was seen as being.

Statistical methods used to study results were the Pearson product moment correlation, measures of central tendency, and ranges of scores. The Pearson product moment correlation was implemented to determine the degree of relationship between the CITS scores and scores on the criterion measures. The measures of central tendency and ranges of scores were used to evaluate the distribution of the variables under study.

CHAPTER III

RESULTS

A Pearson correlation coefficient was obtained for the 32 subjects' scores and criterion measures. None of the correlations were significant. Table I shows the correlations between these scores.

TABLE I

CORRELATIONS OF CITS SCORES AND CRITERIA

CITS Score	Prisoner's Dilemma Score	Personal Space Score	Trust Walk Score	Total Criteria Score
Total	.12	.16	-.01	.07
Male Items	-.08	.08	.00	.03

Correlations were also derived to measure the relationship between the criteria. These results were also not significant. Table II shows the criteria correlations in matrix form as suggested by Roscoe (1969).

TABLE II

CORRELATION MATRIX FOR PRISONER'S DILEMMA GAME, PERSONAL SPACE, AND TRUST WALK

Criteria	Prisoner's Dilemma	Personal Space	Trust Walk
Prisoner's Dilemma	1.00	-.16	-.16
Personal Space	-.16	1.00	.04
Trust Walk	-.16	.04	1.00

The measures of central tendency and the range of scores for the CITS and criteria are shown in Table III. Frequency polygons illustrate the distribution of scores for the CITS and criteria in Figures 2, 3, 4, 5, and 6.

TABLE III

MEASURES OF CENTRAL TENDENCY AND RANGES OF SCORES FOR THE CITS, PRISONER'S DILEMMA GAME, PERSONAL SPACE, AND TRUST WALK

Measures	Mean	Mode	Median	Range
CITS (total score)	60.40	55,65,70	63	35-76
CITS (male items)	33.40	34	34	16-42
Prisoner's Dilemma	15.02	15	15	8-21
Personal Space	5	1	4	0-16
Trust Walk	7.78	9	8.5	3-10

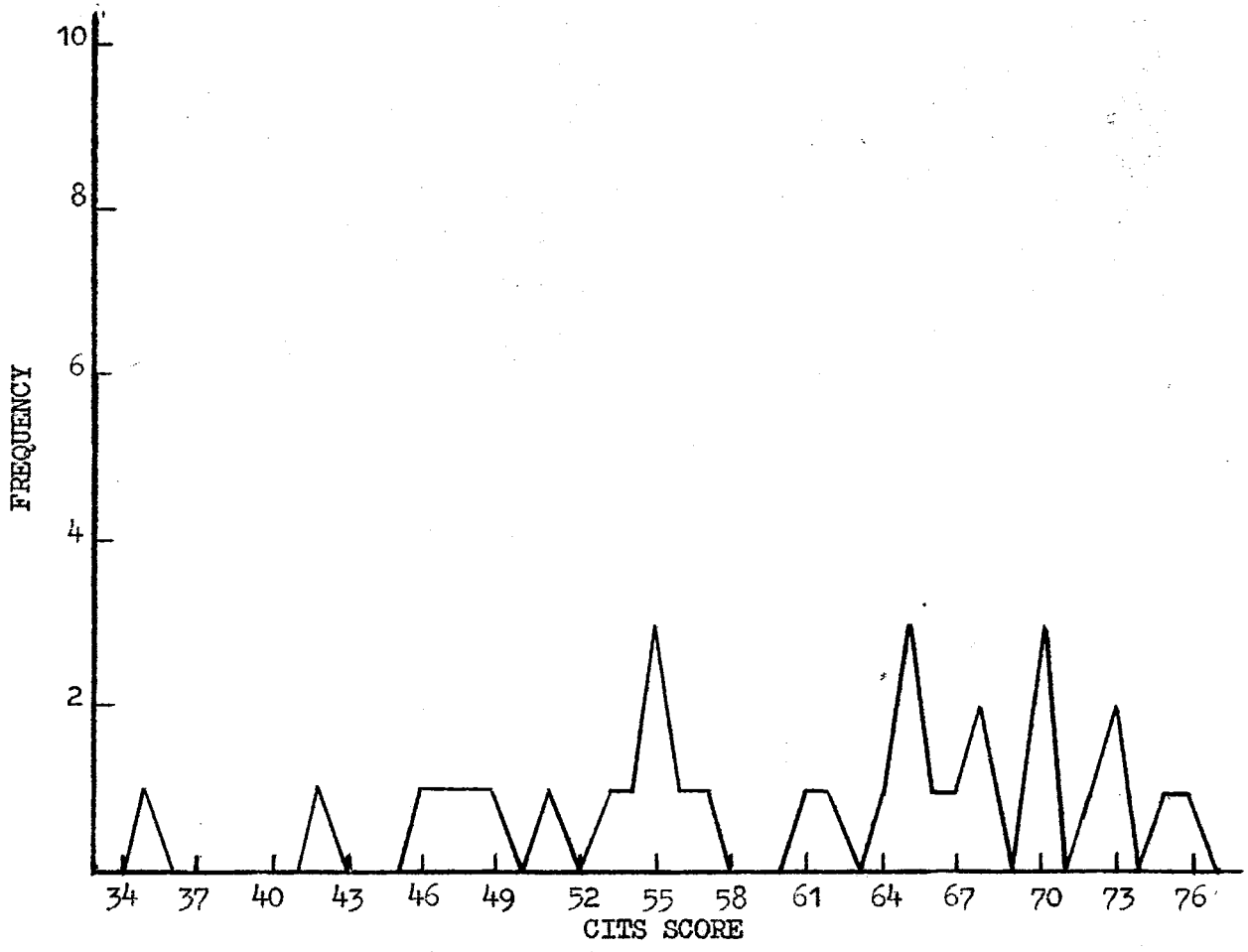

Figure 2. CITS Total Score Frequency Polygon

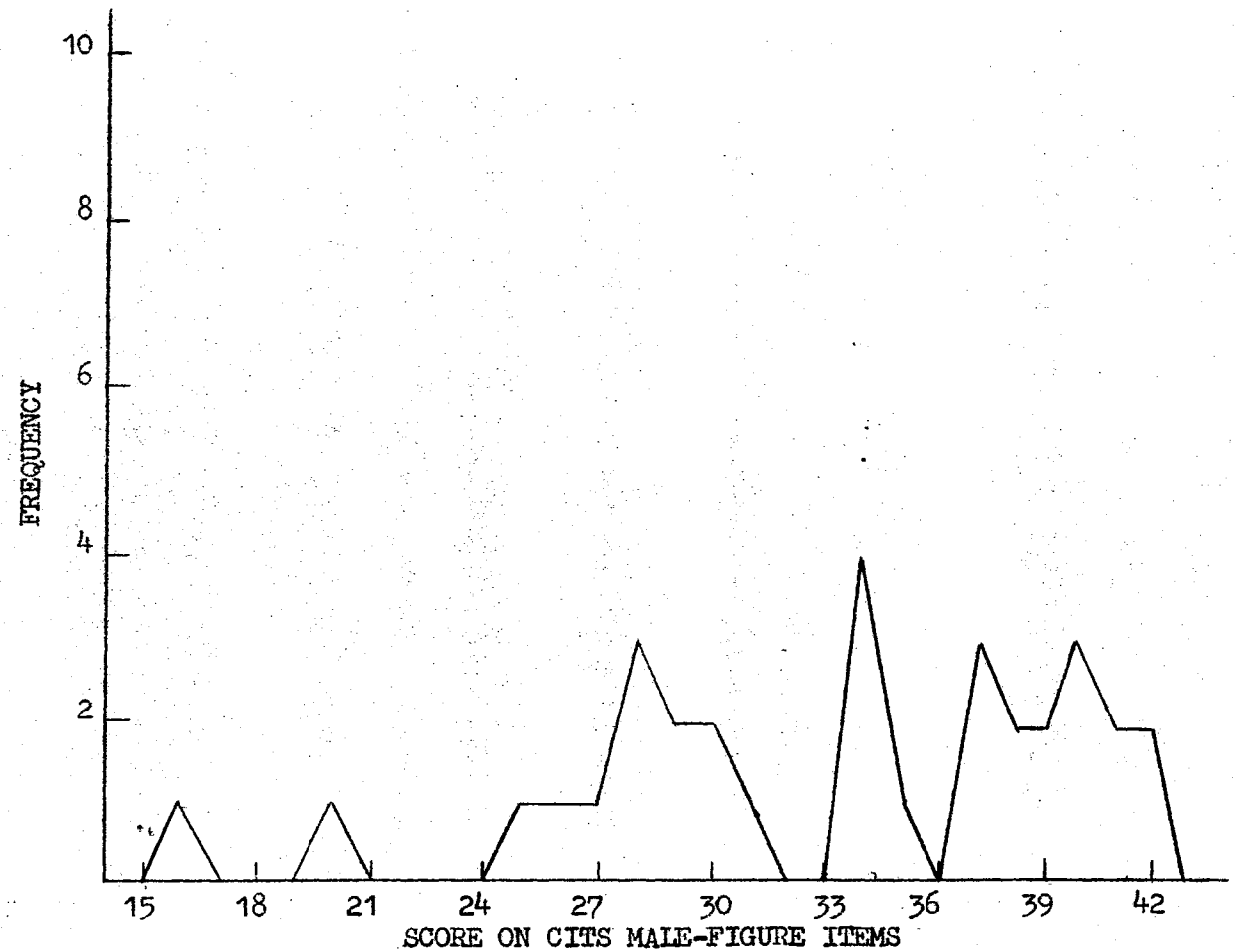

Figure 3. CITS (Male Items) Score Frequency Polygon

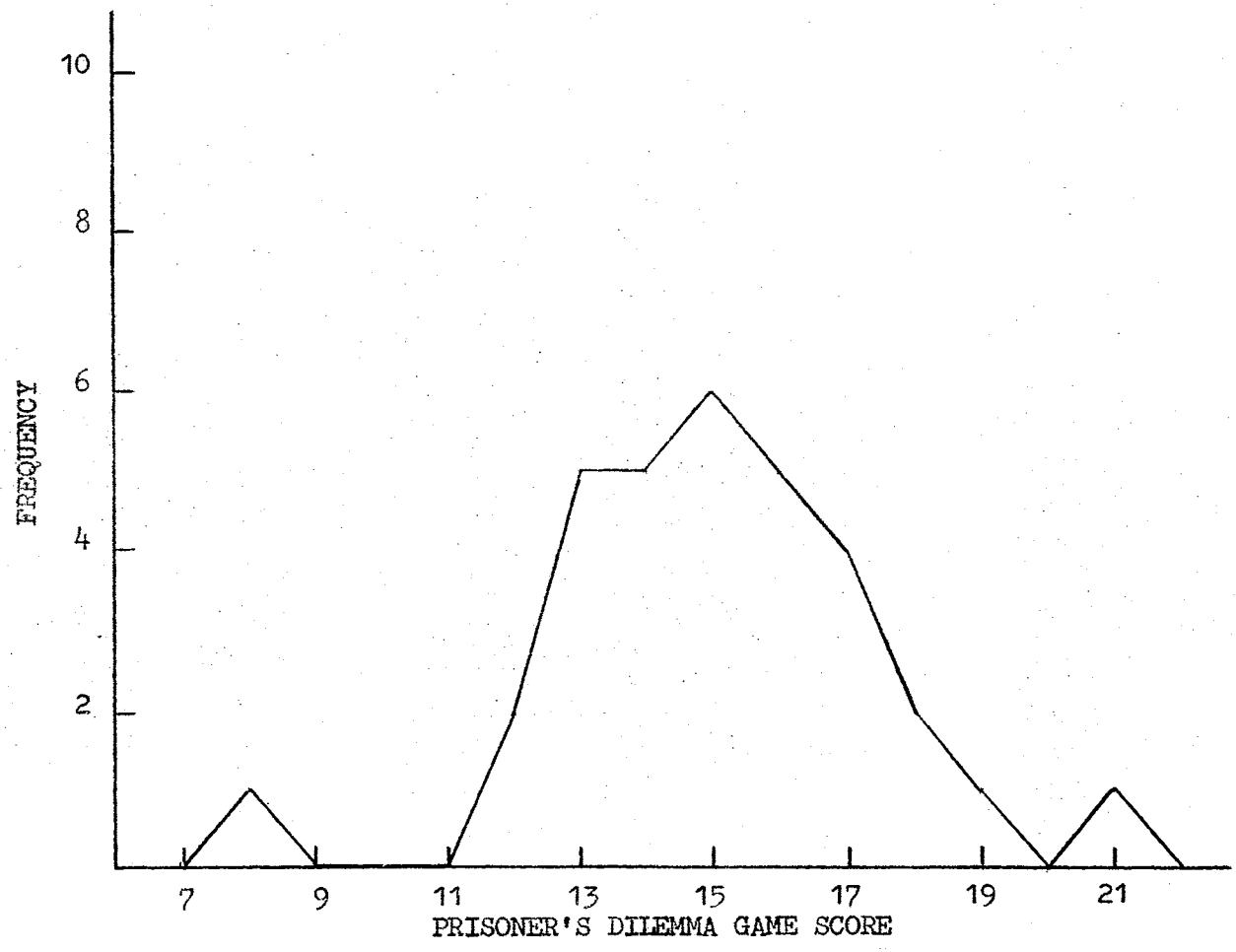

Figure 4. Prisoner's Dilemma Game Score Frequency Polygon

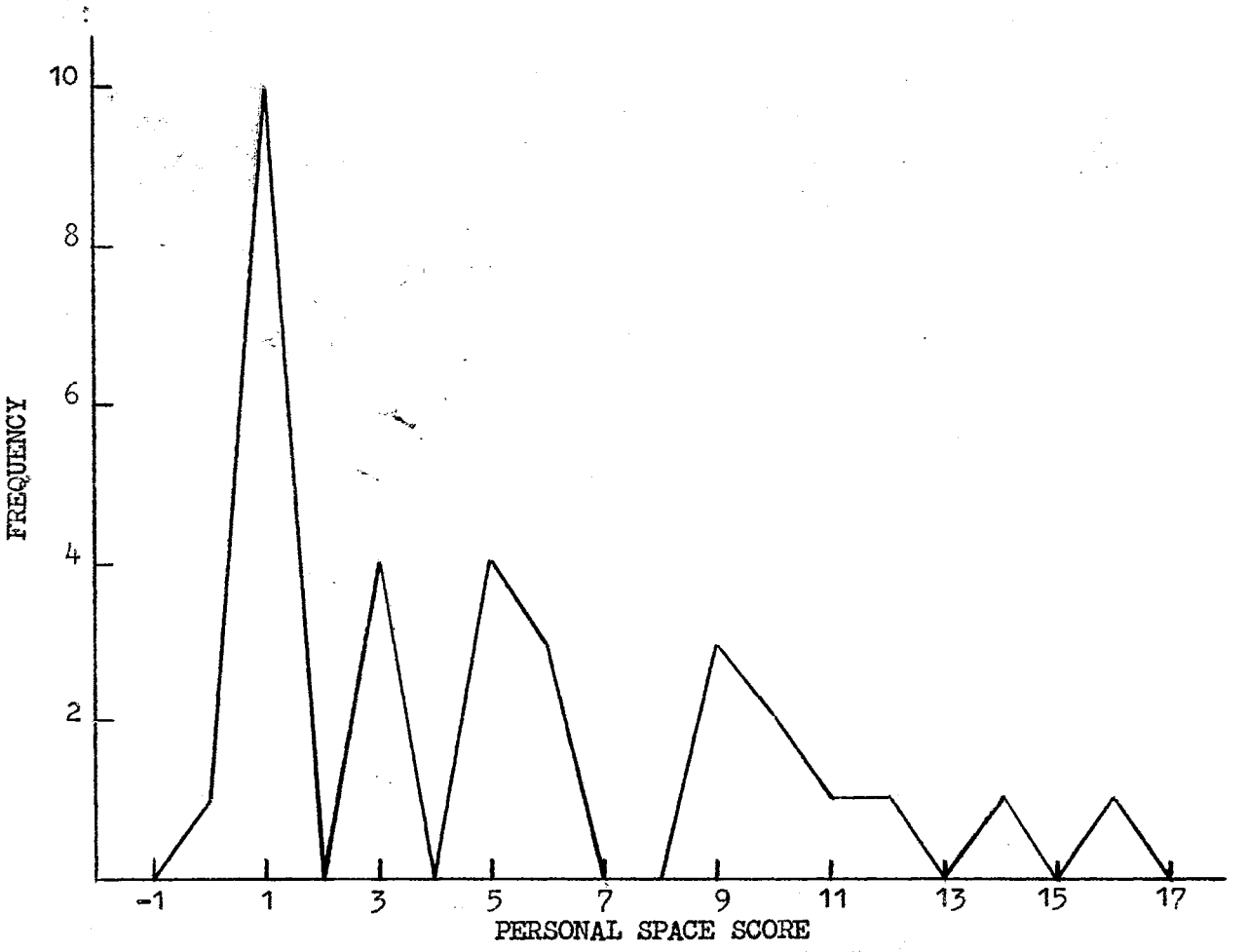

Figure 5. Personal Space Score Frequency Polygon

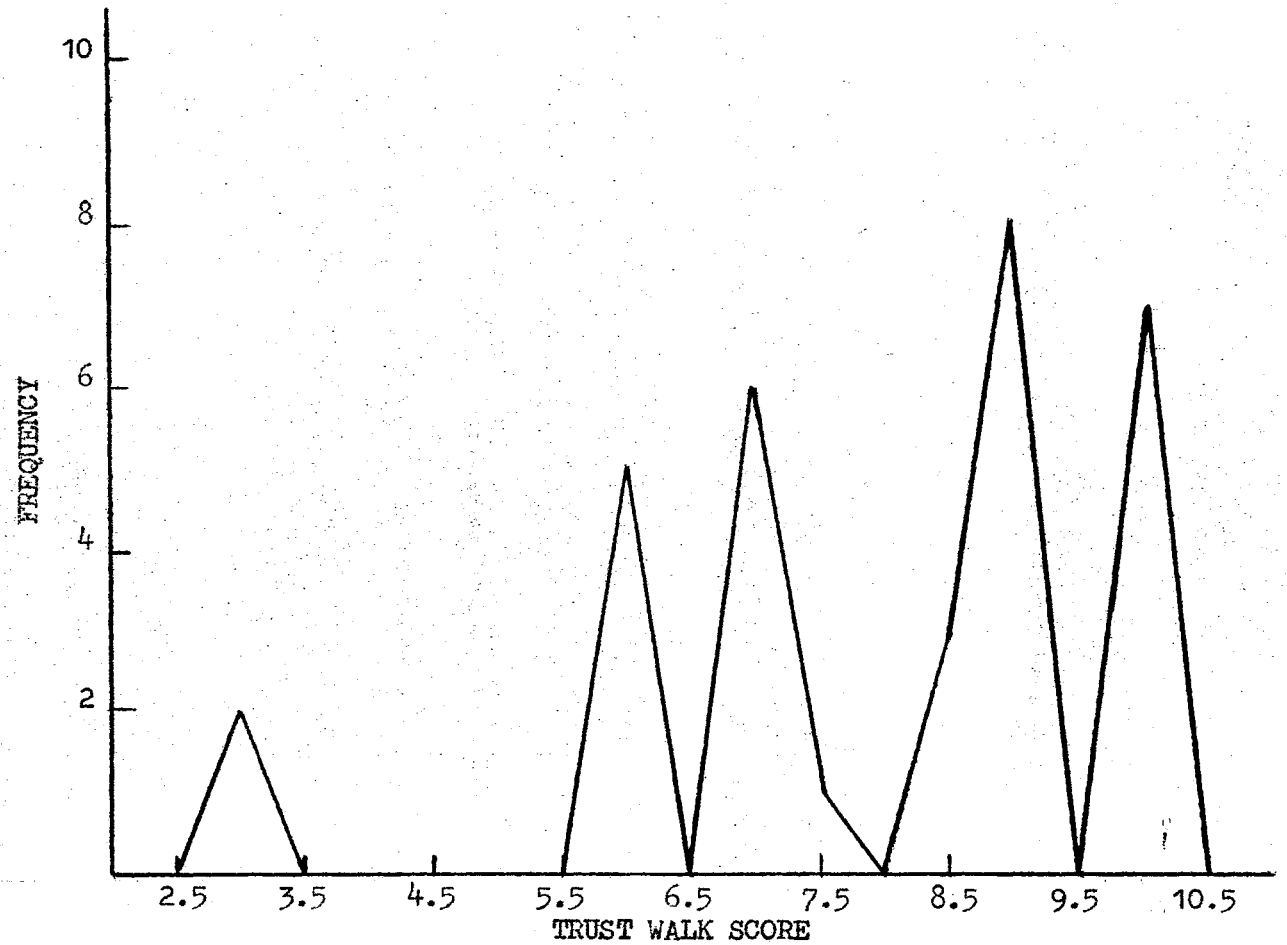

Figure 6. Trust Walk Score Frequency Polygon

In regard to the internal consistency of the CITS, the uncorrected split-half (odd-even) reliability coefficient for the complete test was .62. Corrected by the Spearman-Brown prophecy formula, the correlation was .77. The uncorrected split-half reliability coefficient for the CITS using only male-figure items was .68. Corrected by the Spearman-Brown prophecy formula, the correlation was .81.

CHAPTER IV

DISCUSSION

The present research was designed to investigate the validity of the Children's Interpersonal Trust Scale. Criteria used to study the scale were the Prisoner's Dilemma Game, personal space, and the trust walk. None of the criteria correlated significantly with the CITS scores or each other. Utilizing only male-figure items of the CITS made no significant difference in correlations with the criteria. The hypothesis that the Prisoner's Dilemma Game, personal space, and the trust walk would correlate positively with scores on the CITS was not supported.

The nonsignificant correlation between the Prisoner's Dilemma Game portion of the study and CITS scores is consistent with the opinion of Rotter (1971) that this measure is not relevant to the study of trust. Characteristics described by him as objectionable, such as incentives, were shown by Knox and Douglas (1971) to increase competitive behavior when low. No incentives were included in the present application of the Prisoner's Dilemma Game in order to prevent active encouragement in the direction of trust. By not encouraging trusting responses with incentives, competitive responses may have been increased due to this lack of incentives. Knox and Douglas (1971) have also stressed the importance of the subjects' understanding instructions for the game. Two subjects played the game by alternating red and blue poker chip choices

regardless of choices made by the assistant. Although no subjects had questions concerning the rules of the game, these two boys played in a style which suggests they were unmotivated to play or they did not understand the game.

Results of the personal space portion of the study were also not significant. The frequency distribution of scores on this criterion illustrate that the subjects' scores tend to collect at the trusting end of the range of scores rather than approaching a normal distribution. A possible explanation for these results is that the subjects used were not a random sample, but members of groups which encourage trust. Also the author noted an uncontrolled variable which appeared to affect the boys' behavior. This variable was the assistant's arm position. Whether the assistant's arms were behind his back, at his side, or crossed in front of him seemed to affect the distance at which subjects halted their approach to him. In future research, body position as well as eye contact should be controlled so its effect on personal space can be determined.

The correlations between the trust walk scores and CITS scores and between the trust walk and other criteria were also not significant. As shown in the frequency distribution of trust walk scores, the scores tend to collect at the trusting end of the range of scores. As in the personal space study, these results may be explained by the type of subjects used in that they were members of groups which encourage trust. Also the boys with parents who did not allow them to participate may have been less trusting than those who were able to participate because their parents may have been untrusting of the study.

The frequency of scores on the Prisoner's Dilemma Game was

concentrated in the middle of the range of scores. These results may have been affected by the variables present in the study which can increase competitive playing such as no incentives. One problem with the Prisoner's Dilemma Game is that in attempting to create a neutral game which does not encourage trusting or cooperative responses, one can thereby encourage competitive responses.

The distribution of the subjects' scores on the CITS is scattered throughout the range. No clear pattern is apparent in these distributions. The scores on the personal space and trust walk indicate the subjects may have been a trusting sample. The scores on the Prisoner's Dilemma Game may have been affected by the variables present which can increase competitive playing such as no incentives and simultaneous choices. Although the CITS appears to have face validity, these results indicate the scale may not be a valid measure of interpersonal trust. Hochreich's (1966) results with the CITS approached statistical significance, but did not achieve it. Results of this study were also not significant. The results of these two studies cast serious doubt on the validity of the scale. However, with no significant results in the study, further research is called for before the scale is defined as not being applicable to the study of trust in children.

Several general factors may have had a confounding effect on the study. Lighting differences, extraneous noise, occasional interruptions by non-participants, and room sizes are possible contaminating factors which the author was unable to control. These variables could prevent a significant relationship from being detected.

A suggestion regarding later studies of the CITS is to rotate the assistants as well as the order of criteria. Because each criterion in

this study had one assistant assigned to it throughout the study, the subjects' behavior may have been affected by a particular assistant's personal characteristics. By rotating each assistant's tasks, the variable of assistant characteristics can be better controlled.

A specific factor which may be the most important in terms of later attempts to validate the CITS is Rotter's definition of trust. Within Rotter's framework, interpersonal trust involves the belief of an individual in another's verbal or written statement. The CITS is based upon this definition of trust while the criteria used in this study are not. This situation could have been rectified by devising verbal promises for each measure. It would seem that this departure from Rotter's definition may have had major consequences on the obtained results.

The trust walk and personal space results reflect scores which one might expect from a church youth group and Boy Scouts, i.e., to be trustworthy and trusting. The CITS scores do not reflect this tendency. A possible explanation for this difference is in the criteria's departure from Rotter's definition of interpersonal trust. The trust walk and personal space may reflect a broader type of trust than the CITS, such as a general ability to be close to other people without feelings of discomfort. These feelings may be necessary but not sufficient to trust as defined by Rotter. The CITS, on the other hand, may measure a narrower type of trust which involves an extension of one person or group through a promise or statement and a judgement of that statement's reliability. If, in future studies, the reliability of the CITS is established, caution should be taken in generalizing trust scores on the scale to children's general behavior toward other people.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to gather validity data regarding the Children's Interpersonal Trust Scale. Criteria used for validation were the Prisoner's Dilemma Game, personal space, and the trust walk. Thirty-two male fifth and sixth grade students were administered the CITS. One week following the scale administration, the subjects participated in the Prisoner's Dilemma Game, personal space, and the trust walk. It was predicted that scores on the criteria would correlate positively with scores on the CITS and the validity of the scale would be supported.

No meaningful correlations were found to exist between the CITS and criteria or between the criteria themselves. Differentiation of test items by the sex of the figure made no significant difference in the correlations with criteria. The scores on the trust walk and personal space portions tended to fall in the more trusting range of scores which may suggest the subjects were not a random sample, but a trusting sample. Scores on the Prisoner's Dilemma Game fell in the middle range of scores which may be due to factors in the study which can increase competitiveness. Scores on the CITS were scattered throughout the range of scores.

Further study of the validity of the CITS was suggested and possible contaminants of the present study were discussed. The modification

of the criteria instructions was suggested as being important in terms of further study of the CITS. The possibility of different types of trust was put forth as a result of the trusting responses evidenced in the personal space study and trust walk and the more widely distributed CITS scores.

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APPENDIX A

SUBJECT'S RAW SCORES ON THE CITS AND CRITERIA

Subject	Total CITS	CITS-Male Items	Prisoner's Dilemma	Personal Space	Trust Walk
1	62	35	16	9	7
2	66	38	12	14	10
3	35	20	12	3	7
4	55	31	13	3	10
5	73	40	15	5	9
6	61	34	17	3	9
7	70	40	17	1	10
8	65	37	18	1	10
9	55	29	13	12	8.5
10	51	28	13	5	6
11	64	34	16	1	8.5
12	47	25	17	6	6.5
13	46	28	14	5	8.5
14	56	30	15	1	9
15	65	38	13	1	7
16	73	42	15	1	3
17	54	29	15	1	9
18	68	37	8	0	10
19	75	42	18	16	7
20	67	37	13	6	9
21	49	27	19	1	9
22	70	41	14	1	6
23	65	34	14	5	10
24	72	39	15	9	10
25	57	28	17	9	3

Subject	Total CITS	CITS-Male Items	Prisoner's Dilemma	Personal Space	Trust Walk
26	70	39	21	10	7
27	55	30	14	5	6
28	48	26	14	1	7
29	68	40	15	11	9
30	76	41	16	6	6
31	42	16	16	10	9
32	53	34	16	3	6

APPENDIX B

COPY OF CHILDREN'S INTERPERSONAL TRUST SCALE

Name_____

Age_____

Grade_____

School_____

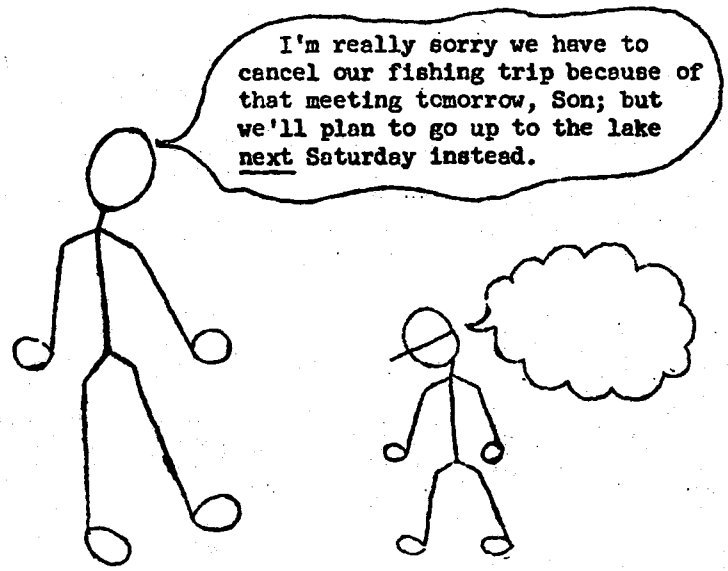
Male or Female_____

INSTRUCTIONS

We are interested in finding out the different ways in which young people think about things that could happen to them in their everyday lives.

On the following pages, you will see a series of cartoons. In each of these cartoons people are talking to each other. First, read what one person is saying to the other. Then, look at the four sentences listed below the cartoon. These are the kinds of things that the boy or girl in the cartoon might be thinking to himself. Choose the sentence which you feel says best what you would be thinking if you were that boy or girl, and circle the letter of that sentence (a, b, c, or d). You should circle only one answer for each cartoon. Please read each one carefully, and do not skip any of the items.

There are no right and wrong answers; all of the answers are all right. Pick the one that comes closest to what you would really be thinking. Remember that we are interested in what you would be thinking or saying to yourself --- not in what you would really say out loud or what you would do, but in what you would be thinking to yourself.

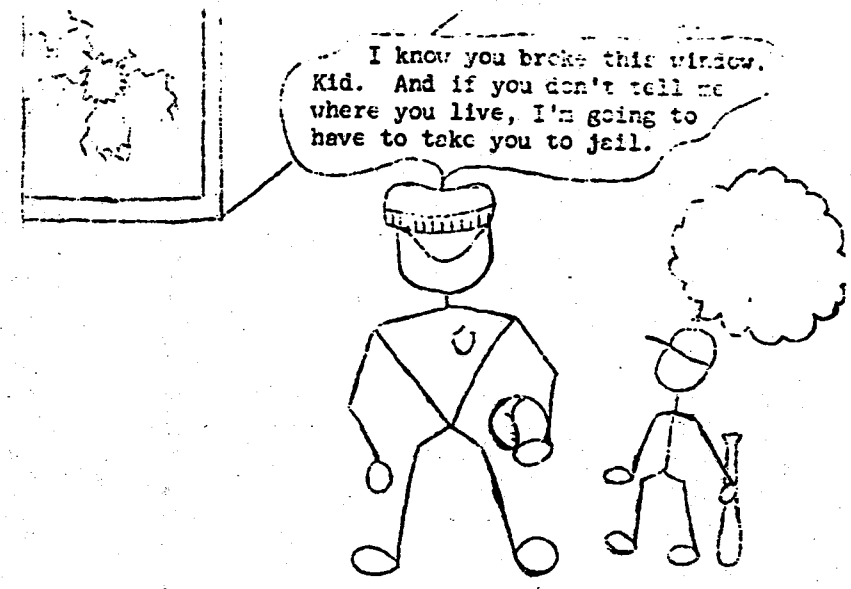


1.) a. I bet next Saturday another meeting will come up and he'll cancel the trip again.

b. Okay, I can wait till then.

c. I guess that's all right.

d. He's said that a million times before.

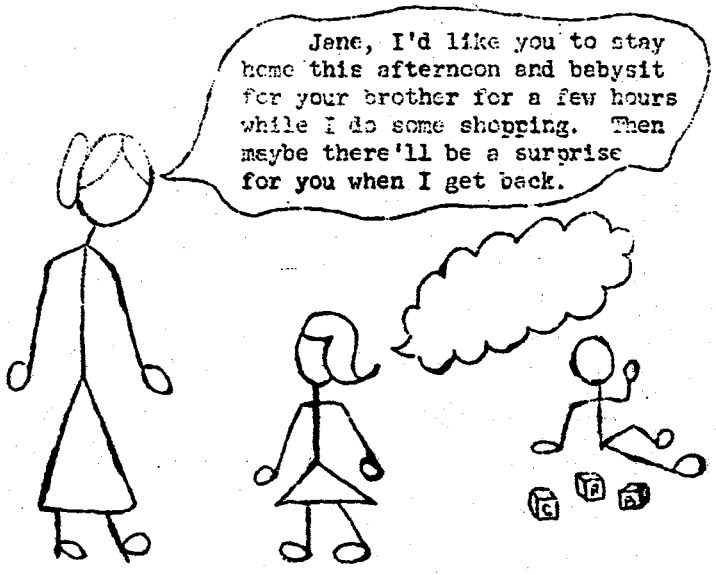


2.) a. He probably won't take me to jail.

b. I'd better tell him where I live.

c. He won't do anything to me.

d. He really might take me to jail if I don't tell.

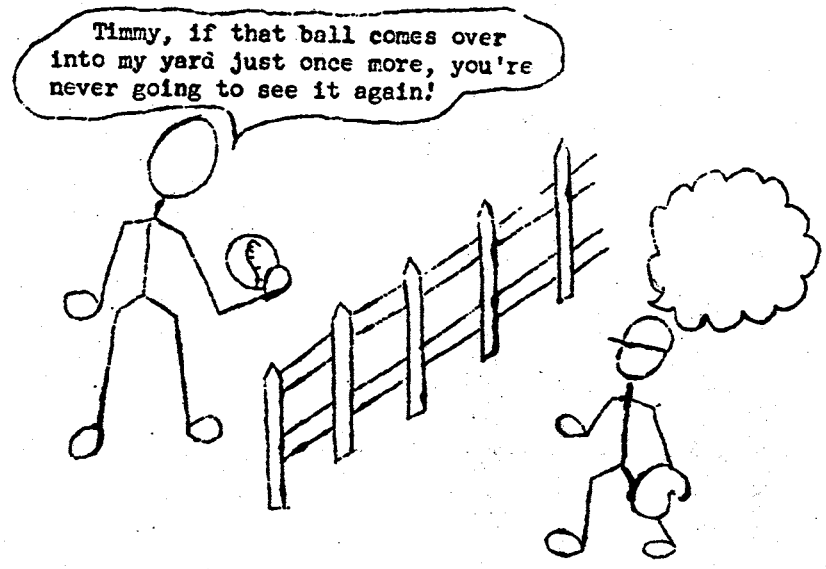


3.) a. I wonder what the surprise is going to be.

b. No matter what she says, there's never anything for me.

c. She'll probably forget to bring the surprise.

d. Okay, I'll do it --- I like surprises.

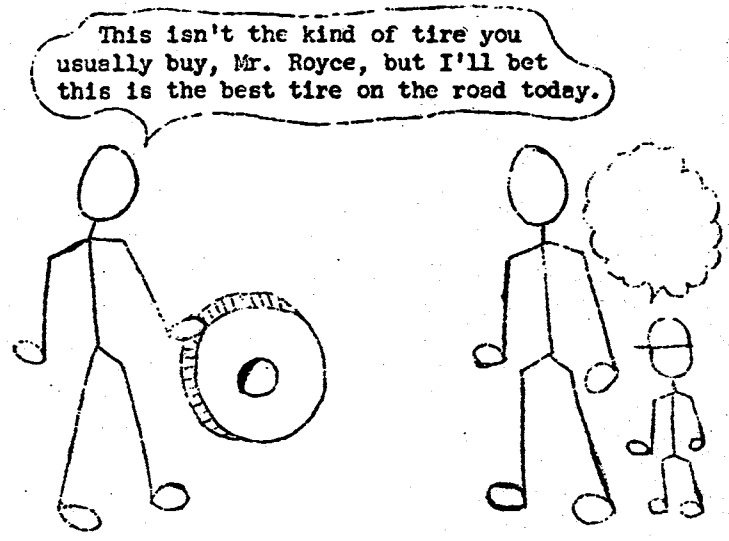


4.) a. I'd better be careful --- he'll really take it away.

b. He's just trying to scare me --- he won't take the ball.

c. It's the only ball I have, so I'd better be careful from now on.

d. That's what he said last time, but he won't really do it.

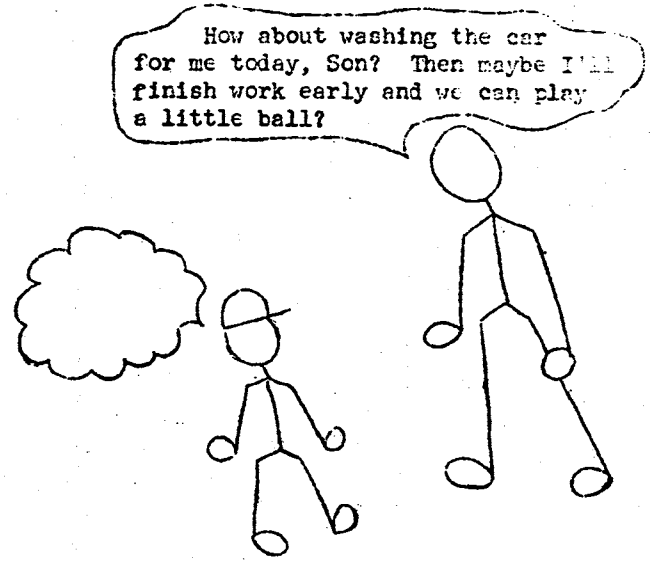


5.) a. He's just trying to talk Daddy into buying it, that's all.

b. I think he'd better buy it then.

c. It must be a good tire if the man says so.

d. I bet it isn't as good as the tires we usually get.

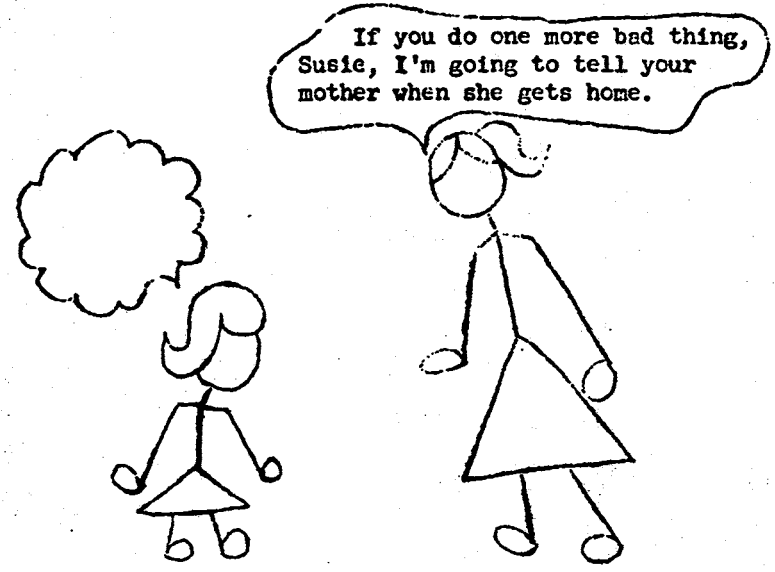


6.) a. He probably won't finish work early, and we won't get to play.

b. That sounds like a good deal.

c. He won't play ball --- he's just trying to get me to wash the car for him.

d. Okay, I'll do it. I'd like to play ball later.

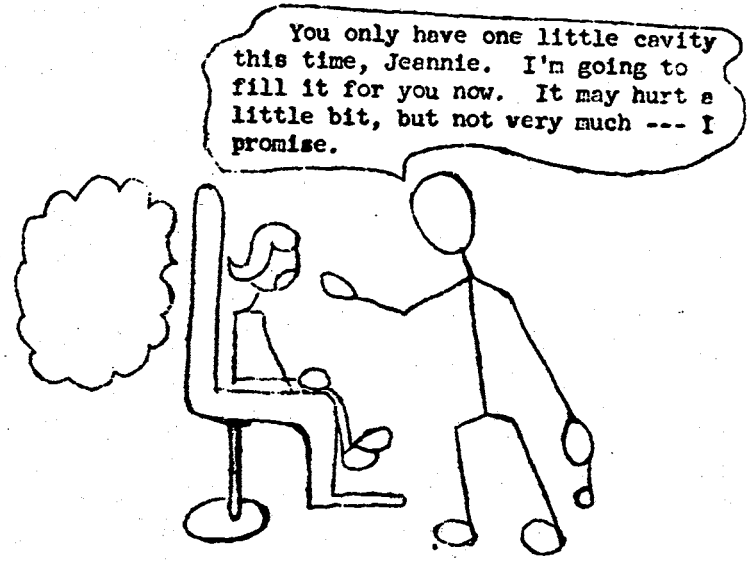


7.) a. I'd better stop doing bad things then.

b. Oh, she's just a show-off ---- she won't tell.

c. She's just saying that to make me be good; she never tells my mother anything I do.

d. I'll be good --- just don't tell my mother.

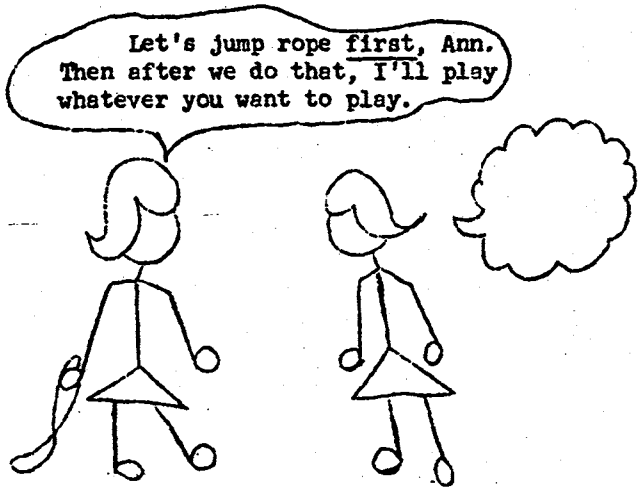


8.) a. He wouldn't say that if it was going to hurt a lot.

b. Oh yeah, I bet it won't.

c. Okay, I guess it won't hurt much.

d. That's what he always says, but I think it will hurt a lot.

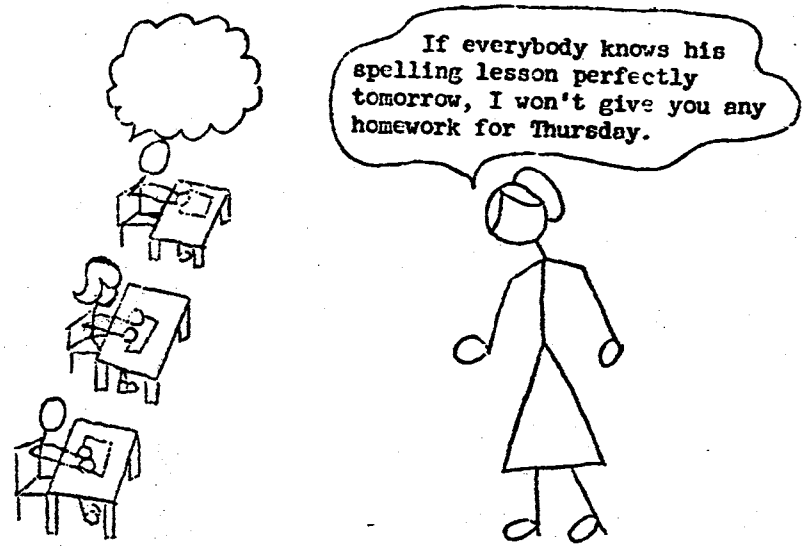


9.) a. Then we probably won't have enough time to play my game.

b. Okay, that's fair enough.

c. I'll play jumprope and then she'll let me pick a game.

d. Will she really play what I want to play afterwards?

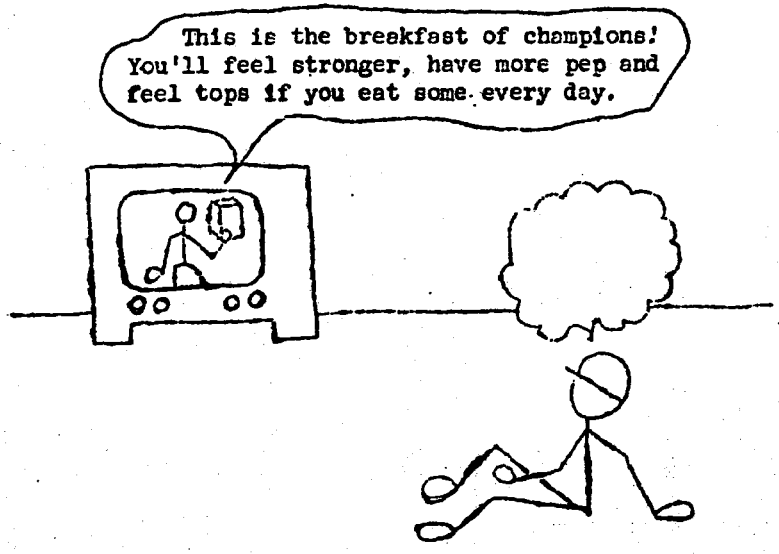


10.) a. She always says that, but somehow we always get homework.

b. I'd better learn it then.

c. She's just saying that so we'll do our homework --- she doesn't really mean it.

d. That sounds like a good deal.

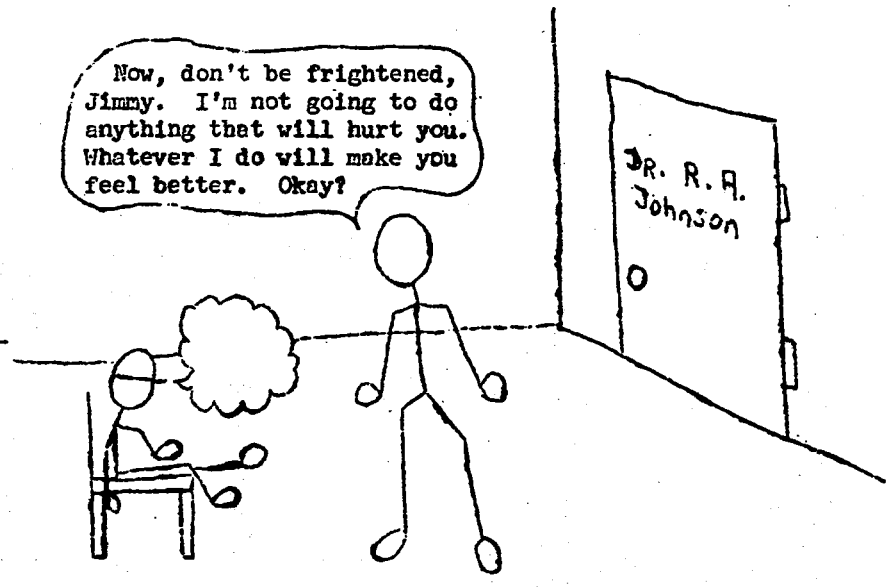


11.) a. I think I'll try it.

b. That's a bunch of baloney.

c. The guy on t.v. is just saying that to get people to buy the cereal --- it won't really work.

d. I'll have to ask Mom to get some for me tomorrow.

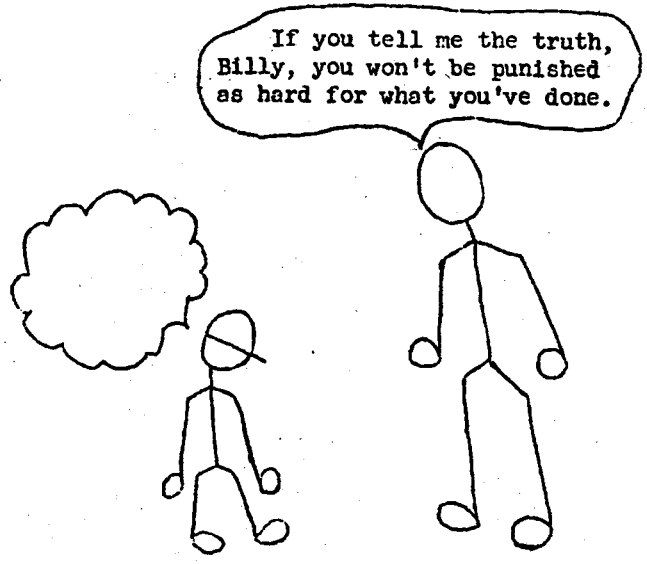


12.) a. Well, he didn't hurt me last time when he said he wouldn't.

b. I'm scared --- he'll probably give me a really big shot or something.

c. Okay, I guess I can trust him.

d. I wonder what trick he'll pull on me today.

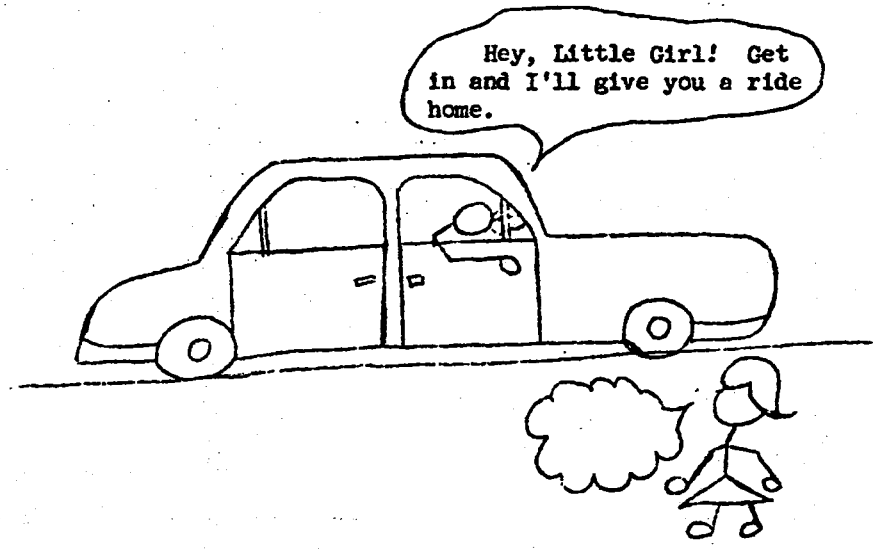


13.) a. I don't know if I should tell him the truth or not.

b. Okay, I'll tell him what I did.

c. I'd better tell him the truth, because otherwise I'll be in real trouble.

d. I'll be better off if I don't tell him.

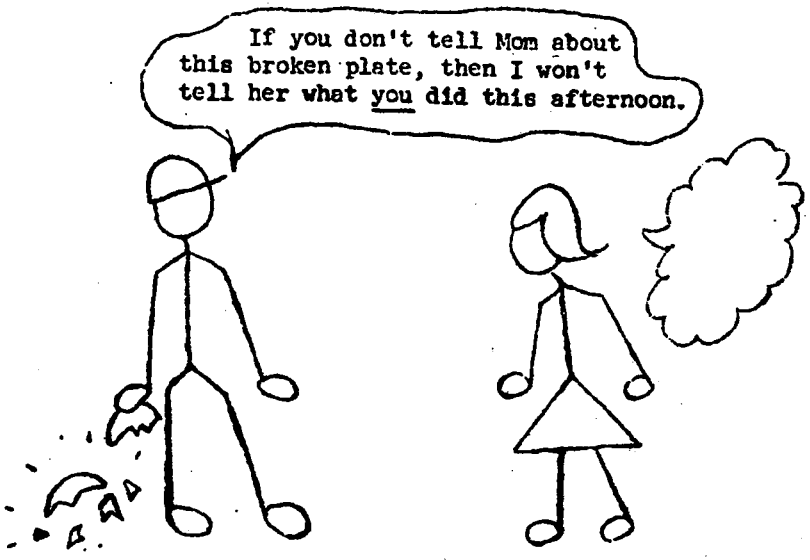


14.) a. He won't really take me home.

b. That's great --- I don't feel like walking anyway.

c. Oh, I wonder if I should take a ride from him.

d. I believe him, but my mother wouldn't want me to.



15.) a. Okay, I won't tell.

b. I wonder if he'll keep his promise.

c. Last time he said that, he did tell.

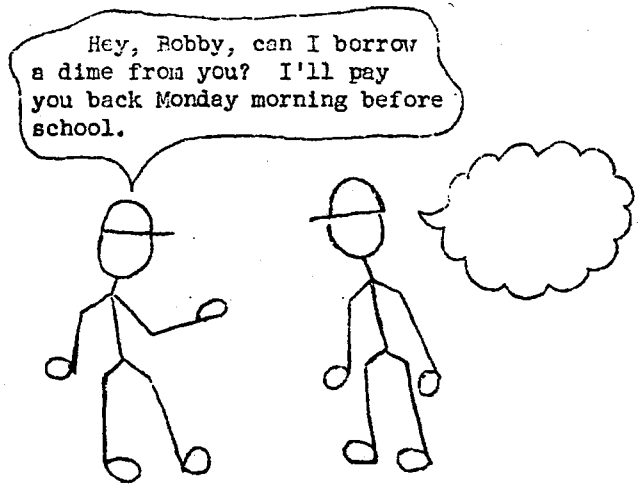
d. Good. That way I won't get yelled at either.

16.) a. Okay, I'll buy them if he says they're better.

b. They're probably not as good as the kind I usually get.

c. Well, I'll try them them.

d. He's just saying that to sell them to me --- they're not really better.

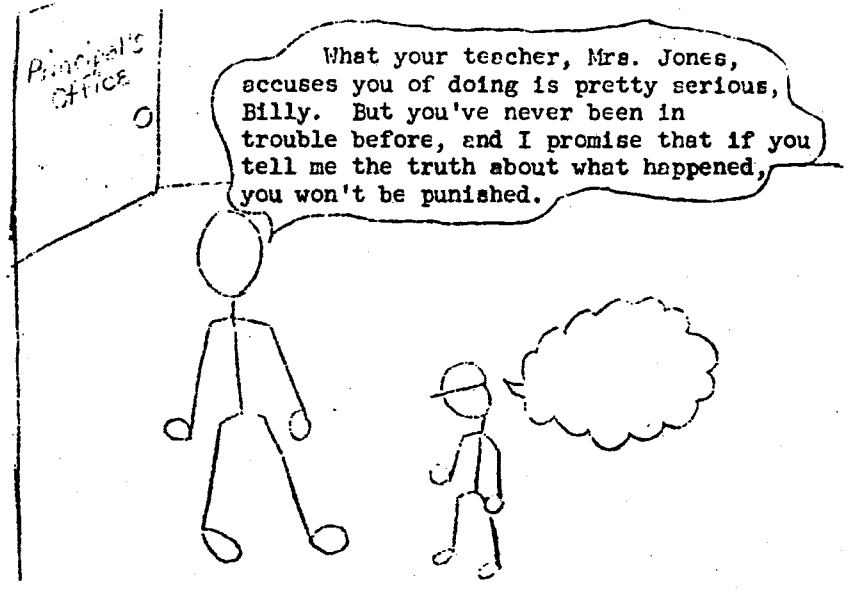


17.) a. No. Last time he didn't pay up.

b. Okay, I'll let him borrow it.

c. He's always paid me back before.

d. I bet he'll forget to pay back the dime.



18.) a. I always get punished, even if I do tell the truth.

b. I'll tell him the truth so I won't be punished.

c. If I tell the truth, he might change his mind and punish me anyway.

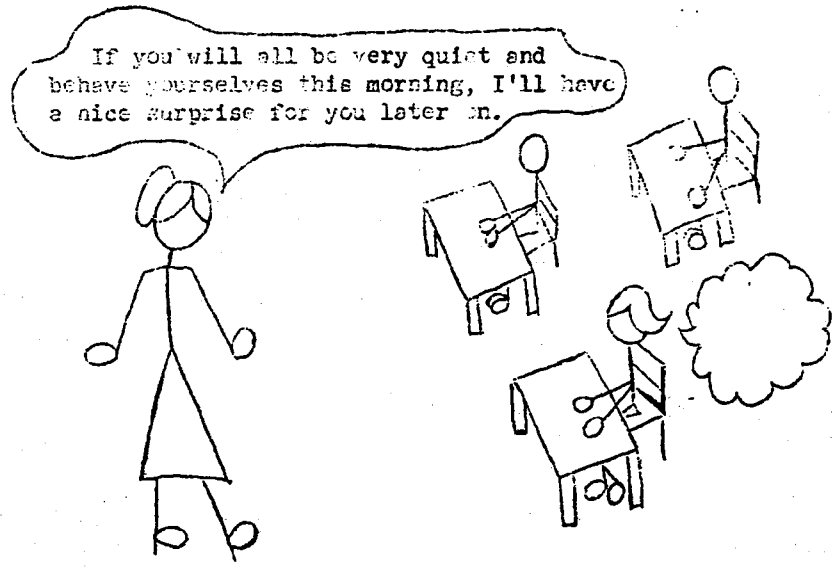
d. Okay then, I'll tell him.

19.) a. She'll do it, too.

b. She doesn't really mean it.

c. She always says that, but she never does it.

d. Mary had better watch out.

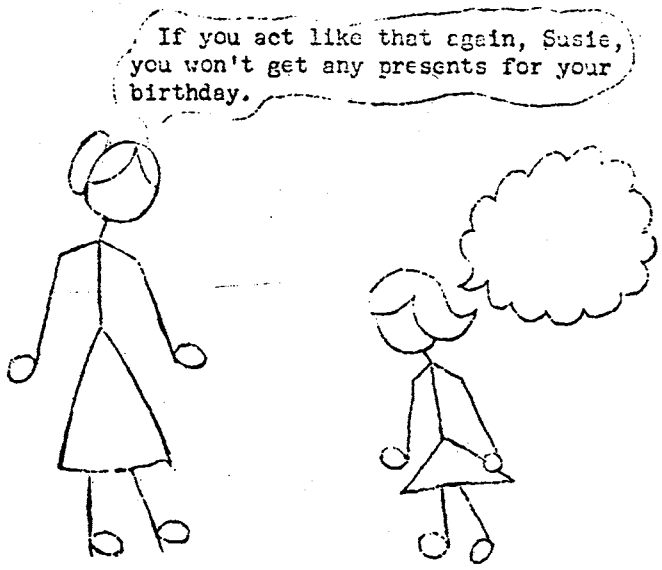


20.) a. Maybe she'll let us play games for the last hour.

b. Sure, she'll read us one of her crumby stories.

c. I wonder what the surprise will be.

d. She'll find some excuse not to give us a surprise.

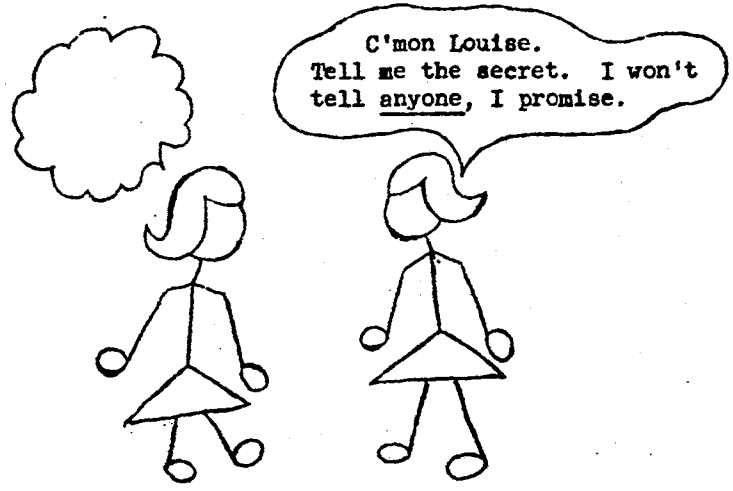


21.) a. She'll give me birthday presents anyway.

b. I'd better not do it anymore.

c. She'll forget she ever said that.

d. I'll have to try to be good --- she means what she says.



22.) a. She's always been my closest friend --- she won't tell.

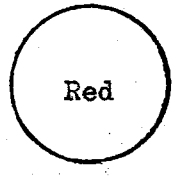
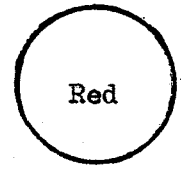
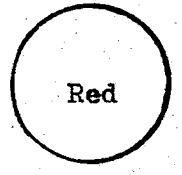
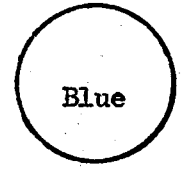
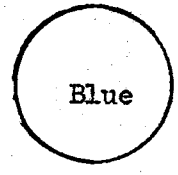
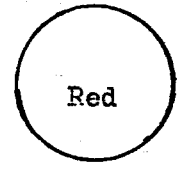
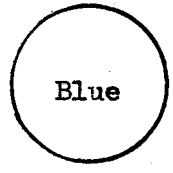
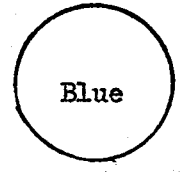
b. Sure, everyone will know about it by tomorrow.

c. I have to tell someone, and I think I can really trust her.

d. She can't keep a secret.

APPENDIX C

DIAGRAM OF PRISONER'S DILEMMA GAME PRESENTED TO SUBJECTS

YOU	OTHER PLAYER
	
9	9
	
0	10
	
10	0
	
0	0

VITA

Susan Skinner

Candidate for the Degree of

Master of Science

Thesis: A STUDY OF THE VALIDITY OF THE CHILDREN'S INTERPERSONAL TRUST SCALE

Major Field: Psychology

Biographical:

Personal Data: Born in Tulsa, Oklahoma, September 9, 1947, the daughter of Mr. and Mrs. Edward T. Skinner.

Education: Graduated from Thomas Jefferson High School, Dallas, Texas, in June, 1965; received the Bachelor of Science degree from Oklahoma State University in 1969 with a major in psychology; completed requirements for the Master of Science degree from Oklahoma State University in July, 1973.

Professional Experience: Graduate teaching assistant, 1969, 1970-1971; graduate research assistant, 1970.