A new scale for the measurement of interpersonal trust[1]

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One of the most salient factors in the effectiveness of our present complex social organization is the willingness of one or more individuals in a social unit to trust others The efficiency, adjustment, and even survival of any social group depends upon the presence or absence of such trust.

Interpersonal trust is defined here 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. This definition clearly departs significantly from Erikson's (1953) broad use of the concept of *basic trust* which Erikson describes as a central ingredient in "the healthy personality"

Various writers have already indicated that a high expectancy that others can be relied upon is an important variable in the development of adequate family relationships and of healthy personalities in children The failure to trust others, particularly representatives of society, such as parents, teachers, and powerful community leaders, has frequently been cited as an important determinant in delinquency (Redl & Wineman, 1951) Difficulties in race relationships and in minority group–majority group relationships have, likewise, been frequently related to expectancies of one group that the verbal statements of the other cannot be accepted Many psychotherapists believe interpersonal trust is a major determinant in the success of psychotherapy In fact, an expectancy that others can be believed must be an important variable in human learning in general Much of the formal and informal learning that human beings acquire is based on the verbal and written statements of others, and what they learn must be significantly affected by the degree to which they believe their informants without independent evidence.

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It seems evident that an adequate measure of individual differences in interpersonal trust would be of great value for research in the areas of social psychology, personality, and clinical psychology Social scientists have investigated some of the conditions relating to interpersonal trust using game theory (Deutsch, 1958, 1960, Rapaport & Orwant, 1962, and Scodel, 1962). For the most part these investigations have shown that a typical reaction of two strangers in a two-person non-zero-sum game situation involving trust produces behavior usually indicative of competitive rather than cooperative attitudes One might conclude that Americans at least are a highly suspicious and extremely competitive group who would give up many benefits rather than cooperate with someone else. The results of these studies, however, do not seem consistent with a common-sense analysis of our own society From the family unit to big business, cooperation seems to mark the everyday behavior of individuals and organizations to a far greater degree than would be anticipated from the study of two-person game situations Perhaps this is the result of special reactions to these laboratory situations which are highly competitive in nature and are specific to these situations, or at least have limited generality. The writer has previously published an analysis of some of the factors involving specificity of reaction to test and experimental laboratory situations which may be applicable here (Rotter, 1955, 1960).

Studies involving the communication of information (Mellinger, 1956, Loomis, 1959, Kelley & Ring, 1961) have several characteristics in common with game approaches but present situations somewhat closer to the present study. These investigations indicate that people who trust others more are also more trustworthy, or cooperative. Similar findings were obtained by Deutsch (1960) using the "game" paradigm

Other recent literature has dealt with trust indirectly Discussions of Machiavellianism, i e., the tendency to manipulate others to gain one's own ends (Christie & Merton, 1958), and anomie (Merton, 1949), suggest that, at least in part, distrust of others is dependent upon normlessness in the social organization.

The problem of trust in the present research is being viewed from the perspective of social learning theory (Rotter, 1954).

From this orientation, choice behavior in specific situations depends upon the expectancy that a given behavior will lead to a particular outcome or reinforcement in that situation and the preference value of that reinforcement for the individual in that situation

It is a natural implication of social learning theory that experiences of promised negative or positive reinforcements occurring would vary for different individuals and that, consequently, people would develop different expectancies that such reinforcements would occur when promised by other people It is also natural to expect, to some degree, that such expectancies that promises of other social agents will be kept would generalize from one social agent to another That is, individuals would differ in a *generalized expectancy* that the oral or written statements of other people can be relied upon The development of such a generalized attitude may be learned directly from the behavior of parents, teachers, peers, etc., and also from verbal statements regarding others made by significant people or trusted sources of communication such as newspapers and television. It is ironic that we can learn to distrust large groups of people without personal experience validating such distrust, because people who are themselves trusted teach distrust

Previous work on the choice of a smaller immediate reward versus a more highly valued, delayed reward by Mahrer (1956) and Mischel (1961a, 1961b) is related to the concept of trust as defined here These studies strongly suggest that children who have experienced a higher proportion of promises kept by parents and authority figures in the past have a higher generalized expectancy for interpersonal trust from other authority figures

Construction of the Interpersonal Trust Scale

As a first step in the construction of the scale a number of items were written using a Likert format An attempt was made to sample a wide variety of social objects so that a subject would be called upon to express his trust of parents, teachers, physicians, politicians, classmates, friends, etc. In other words, the scale was constructed as an *additive* scale in which a high score would show trust for a great variety of social objects In addition to the specific items, a few items were stated in broader terms presumed to measure a more general optimism regarding the society Finally, a number of filler

items, intended to partially disguise the purpose of the scale, were written and included in the first experimental form

The experimental form was group-administered to two large classes of students in an introductory psychology course The sample comprised 248 male and 299 female subjects Along with this scale the Marlowe-Crowne Social Desirability Scale (1964) of "need for social approval" was administered

Three criteria were used for inclusion of an item in the final scale (*a*) the item had to have a significant correlation with the total of the other trust items with that item removed, (*b*) the item had to have a relatively low correlation with the Marlowe-Crowne Social Desirability Scale score, and (*c*) endorsement of the item showed reasonable spread over the five Likert categories of (1) strongly agree, (2) mildly agree, (3) agree and disagree equally, (4) mildly disagree and (5) strongly disagree A final form of the scale was determined by dropping three items from the a priori scale

In the experimental form of the test, half of the crucial items were written so that an "agree" response would indicate trust, and half so that a "disagree" response would indicate trust In the final form of this scale the items selected were similarly balanced so that 12 indicated trust for agreeing and 13 distrust for agreeing Filler items did not show significant relationships to the trust items but helped partially obscure the purpose of the test The final form of the test included 25 items measuring trust and 15 filler items Some sample items are presented below

> In dealing with strangers one is better off to be cautious until they have provided evidence that they are trustworthy
>
> Parents usually can be relied upon to keep their promises
>
> Parents and teachers are likely to say what they believe themselves and not just what they think is good for the child to hear.
>
> Most elected public officials are really sincere in their campaign promises

In addition to the Marlowe-Crowne Social Desirability Scale, the 547 subjects completed a personal information questionnaire which included information on age, socioeconomic level, father's occupation, father's and mother's religion and place of birth, and siblings, so that position in the family and family size could be determined. College Aptitude scores were also available on these subjects and were obtained directly from the students' admission records At later dates several of the students were subjects in other studies involving the administration of the same trust scale It was therefore possible to obtain test-retest reliabilities for long periods of time, where the

testing conditions were different for the two administrations. An analysis of these data is presented below.

Test Characteristics

Internal Consistency and Test-Retest Reliability

Table 1 below provides means and standard deviations of the 248 male and 299 female college student subjects Internal consistency based on split-half reliability, corrected by the Spearman-Brown formula, are also provided While these consistencies are not high for objective type tests, it should be remembered that these are *additive* scales sampling a variety of different social objects rather than a measure of intensity limited to a narrow area of behavior. Regarded in this light these internal consistencies are reasonably high The difference in mean scores for males and females is not statistically significant and distributions of scores for both sexes are similar.

Table 1 Test data for the Interpersonal Trust Scale.

Group	N	Mean	SD
Males	248	73 01	10 23
Females	299	71 91	9 95
Total	547	72 41	10 90

Split-half reliability[a]

	N	r	p
Males	248	.77	< 001
Females	299	75	< 001
Total	547	76	< 001

[a]Corrected by the Spearman-Brown Prophecy Formula

Two estimates of test-retest reliability are available The first of these involves 24 subjects, 10 male and 14 female, who took the test originally in a large group-testing situation and repeated the test as part of a sociometric study to be described later. The average length of time between first and second tests was approximately seven months. The correlation was .56, ($p < 01$). The second measure of test-retest reliability was obtained on students who had also taken the test originally in a large group situation Their second test was part of an experiment in which

the trust scale was given in groups of from two to 13 with two other tests appearing equally often in first, second, and third positions in order of administration. There were 34 males and eight females in this group, and the approximate average time between tests was three months The correlation was 68, ($p <$ .01). Considering the important differences in administration procedures and the relatively long periods of time between tests, these test-retest coefficients indicate surprising stability of test scores.

For the 248 male subjects the correlation with the Marlowe-Crowne S-D Scale was .21; for the 299 females, .38 The overall correlation was 29. All correlations were statistically significant. These results suggest that trust is regarded as a socially desirable trait but that the total amount of variance in the trust scale accounted for by the social approval motive is relatively small To determine the relationship, if any, with general ability, 100 male and 100 female subjects were selected at random and their trust scores correlated with the college entrance (SAT) scores. The correlation for the 100 females was — 16 and for the 100 males — 06. At least for this sample of college students, ability has no significant influence on trust scale scores

Demographic Characteristics of High and Low Trust Individuals

From the personal information sheet filled out by all of the 547 students who took the Interpersonal Trust Scale, analyses of variance were computed for the variables of ordinal position, family size, religion, socioeconomic status, age, and number of semesters in college. In addition, the subjects were grouped into two categories based on whether or not the reported religions for both parents were the same or different. Since male and female subjects were essentially similar throughout this analysis, data were combined for the sexes.

There were no significant differences in test scores for subjects of different ages or according to the number of semesters of college attended However, the range for both of these variables was extremely narrow The data of family size were dichotomized into three children or less, or more than three children Students from larger families did not show significantly different trust

Table 2. Demographic data for the Interpersonal Trust Scale.

Variable and group	N	Mean	Significant differences among groups ($p < .05$)
Ordinal position			
Only	52	73 08	
Oldest	195	72 21	
Middle	129	73 02	Youngest
Youngest	171	71 97	Middle
ANOV overall $F=3.71$, $p < .05$			
Religion			
Left blank	12	71 50	Jewish, none
Jewish	85	74 65	All groups except Miscellaneous
Protestant	197	73 31	Jewish, Catholic, none
Catholic	203	71 33	Jewish, Protestant, none, Miscellaneous
Miscellaneous	17	73 82	Catholic, none
None, agnostic, atheist	33	67 48	All groups
ANOV overall $F=46.78$, $p < .001$			
Religious Differences			
No information	13	72 38	
Parents same	434	73 13	
Parents different	100	69 29	Parents same and no information
ANOV overall $F=75.06$, $p < .001$			
Socioeconomic level	N	Mean	Significant differences among groups ($p < .05$)
No information	25	73 48	V
Warner Group I	117	73 45	III, V
Warner Group II	150	72 70	V
Warner Group III	91	71 81	I
Warner Group IV	64	72 48	
Warner Group V	100	70 97	No information, I, II
ANOV overall $F=8.63$, $p < .01$			

scores from those with three or less children Significant differences were obtained on all the other variables.

Table 2 presents mean scores for the various breakdowns of subjects for the variables of ordinal position, religion, religious differences, and socioeconomic status A multiple-comparisons test for a single degree of freedom contrast (Myers, 1966) was made to determine differences among means It should be noted that in many cases there are significant differences because of

the large number of subjects in the sample, but actual mean differences are relatively small

Inspection of the findings for birth order reveals one significant difference, but the actual mean differences are sufficiently small to suggest no important psychological variability in this group However, in a separate smaller sample, Geller (1966) also found youngest children to be the least trusting and significantly different from all other ordinal positions While this finding cannot be interpreted without additional data, it is possible that the youngest child has less interaction with his parents and has the least acceptance of the adult interpretation of the verities of our society

The data on religion are more clear-cut Students who fill out the blank by stating any religion tend to be more trusting than those who state they are agnostics, atheists, or who write "none" Since it is clear that such students are already expressing less faith in one currently accepted institution, it is not surprising that they show a generalized lower degree of trust in others.

Perhaps most interesting are the lower trust scores for subjects with religious differences between parents In any case where the student indicated a religious difference for the two parents, including one parent being atheistic and the other not, the subject was put into the religious difference category This group includes all subjects who listed different religions for the parents, regardless of the religion stated for the subject himself Only nine of the 100 subjects so classified gave their own religion as "none," "atheist," or "agnostic," so that this group of subjects has only a minimum overlap with the students who were classified as nonreligious in the previous analysis It seems reasonable that a child subjected to two different kinds of adult interpretations in such an important area as religion would grow up to be more cynical of the verbal communications of authority figures

Finally, the data on socioeconomic status more or less follow the expected progression for more trust at the highest economic level to less trust at the lowest economic level. For this analysis, subjects were classified according to Warner's system based upon father's occupation. The interpretation again seems

to be consistent with the general notion that those students who had least reason to accept the status quo as defined and defended by the authorities in the social system tended to show the least trust of those authorities It should be reiterated here, though, that the differences are again small and the overlap among groups is very great

Validity of Scale

In order to assess the validity of the Interpersonal Trust Scale it would be optimal to obtain one or more natural life criterion situations The two-person non-zero-sum game seems like a face-valid procedure to investigate interpersonal trust However, the results of these studies suggest that the situation is reacted to by many if not all subjects as a competitive game, often regardless of special instructions For the reasons cited earlier it was decided to test the validity of the scale against observations of everyday behavior by a sociometric technique Two fraternities ($N = 35$, $N = 38$) and two sororities ($N = 41$, $N = 42$) on the University of Connecticut campus were asked to cooperate in the study Lump sum payments were provided to each of the four organizations if they could promise that all members would be available for a single evening and all would agree to take the sociometric rating of trust and two brief tests. However, members would only be used in the study if they had lived in the house for a period of at least six months prior to the date of testing The data was collected by the author and, in each case, a research assistant of the same sex as the subjects [2] In addition to asking the subjects to nominate members of the group who were the highest and lowest in interpersonal trust, subjects were also asked to nominate others high and low on dependency, gullibility, and trustworthiness As control variables, scales were also included for humor, popularity, and friendship Finally the subjects were asked to make a self-rating of trust on a four-point scale of (1) much more than the average college student, (2) more than the average college student, (3) less than the average college student and (4) much less than the average college student

2 Grateful acknowledgment is made to Ray Mulry and Linda Yuccas who assisted in this research

To avoid halo effect, elaborate instructions were given asking each subject to pay special attention to the different characteristics required for each sociometric description Confidentiality was assured as well as the fact that we were not interested in individuals and that we would eliminate the use of names as soon as the data were obtained, substituting numbers for each individual. To avoid stereotyping, no labels were used for the sociometric scales, but rather descriptions of typical behaviors. In each group the order of presentation was first the trust scale, second the sociometric scales, and last the Marlowe-Crowne Social Desirability Scale. However, the Marlowe-Crowne S-D Scale was not given to the first group

One other difference occurred in the procedure for the first of the four groups In this group, a sorority, each subject was asked to nominate the five highest and five lowest persons on each sociometric scale These data were analyzed using four methods of scoring In the first method the highest was weighted 5, the next highest 4, the next 3, and so on, and the negative nominations were similarly weighted -5, -4, -3, etc The second was also a weighting method but using only the first three nominations for the negative and positive ends of each scale The third method involved no weighting but gave a score of $+1$ for each mention, utilizing all five nominations The last method gave a score of $+1$ only for the top three and the bottom three nominations Intercorrelations of the four methods indicated no substantial differences among them Since subjects met difficulty in finding five names for the top and bottom of each scale, subsequent groups were asked to nominate only the top three and bottom three. Each mention was then scored either ± 1 to give an overall score on that scale

Instructions for the sociometric rating of trust are given below as are the descriptions for the trust variable. The order of presentation was (1) dependency, (2) trust, (3) humor, (4) gullibility, (5) trustworthiness, (6) popularity, (7) friendship, and (8) self-rating of trust During the administration of the sociometric scale a strong attempt to keep a serious atmosphere was more or less successful, success being greater in the sororities than in the fraternities

Sociometric Instructions

On the following pages you will be asked to nominate some people in your group who fit various descriptions Please do so as thoughtfully as possible, paying special attention to the *different characteristics* called for in each description Again let me assure you the results are confidential and we have no interest in you as individuals The data from these questionnaires will be placed on IBM cards identified only by numbers, not names

On the next seven pages various kinds of people will be described Place the name of the person who most closely fits the description after the (1), next most closely after the (2), and so on until you have listed the three people in the group who most closely fit the description *List only the names of people who are here in the group now Do not list any members who are not present*

Do each page in order Do not look at the page ahead until you have finished the one you are working on You may wish as you go along to use some of the same names on different descriptions.

You may find the task difficult but we hope you will take it seriously and do the best you can We feel we are doing important research and hope you will cooperate with us to the fullest

Description of Trust Variable

This person expects others to be honest. She is not suspicious of other people's intentions, she expects others to be open and that they can be relied upon to do what they say they will do

This person is cynical She thinks other people are out to get as much as they can for themselves She has little faith in human nature and in the promises or statements of other people.

The correlations to be reported below are combined for the four groups. They were obtained by calculating separate correlations for each group, transforming to z scores, finding the average z score, and then transforming to an r for the entire group. Before testing the validity of the trust scale against the sociometric scale it was necessary to determine whether or not the sociometric ratings were reliable. This was done by dividing each group into random, equivalent halves and obtaining the sociometric score on each variable for each person

Table 3 Split-half reliabilities of sociometric scores, combined groups ($N = 156$)

Variable	r[a]
Dependency	88
Trust	87
Humor	93
Gullibility	93
Trustworthiness	89
Popularity	95
Friendship	82

[a] $r = 21$ for $p < 01$

Table 4 Combined intercorrelations of sociometric and test scores, combined groups ($N = 156$)

Variable	2	3	4	5	6	7	8	9	10[a]
1 Interpersonal Trust Scale	−23	37	09	−03	31	20	19	29	13
2. Sociometric Dependency		−07	−36	78	−45	−46	−53	−06	−05
3 Sociometric Trust			34	13	62	43	42	39	02
4 Sociometric Humor				−33	26	61	66	14	−08
5 Sociometric Gullibility					−24	−43	−60	01	01
6 Sociometric Trustworthiness						57	50	24	01
7 Sociometric Popularity							83	05	−.11
8 Sociometric Friendship								09	−15
9 Self-Rating of Trust									.31
10 Marlowe-Crowne S-D Scale[a]									

[a] $N = 114$ for all correlations involving the S-D Scale
$r = 21$ for $p < 01$ ($N = 156$)
$r = 16$ for $p < 05$ ($N = 156$)
$r = 18$ for $p < 05$ ($N = 114$)

in the two subgroups The resulting correlations shown in Table 3 indicate the degree to which the members of the group are likely to see each other in a similar way It can be seen that the correlations are unusually high, suggesting not only good cooperation but also that the members of the groups were basing their ratings on a common core of observations

The intercorrelations for the 10 variables are presented in Table 4 This includes the Trust Scale, the seven sociometric ratings, the self-rating of trust, and the Social Desirability Scale It can be seen from Table 4 that the Interpersonal Trust Scale was significantly related to the sociometric trust score Individual correlations in the four groups range from 23 to 55. The overall correlation of 37 is significantly higher than that for the

control variables of humor, popularity, and friendship, indicating that the sociometric rating for trust was measuring an independent variable and was not merely the result of halo effect Both the trust scale and the sociometric rating of trust correlated significantly with trustworthiness, providing strong support for the belief that people who trust others are regarded themselves as being dependable

It is of considerable interest that no significant relationship was found between gullibility which was defined on the sociometric scale as "naive and easily fooled in contrast to sophisticated, experienced, etc," and trust as measured by the sociometric scale or the Interpersonal Trust Scale While it is somewhat difficult conceptually to entirely separate gullibility from interpersonal trust, it is clear that in practice the individuals in our sample made such separation and saw the two traits as independent.

The other significant relationships with the trust scale were for the self-rating of trust and the negative relationship with dependency. The trusting individual is seen as less dependent on others (making decisions, seeking advice and help) than the individual rated as low in trust But dependency is seen as a clearly negative trait correlating $-.46$ with popularity and $-.53$ with friendship Some of this relationship may be negative halo since it is clear that there is a significant although quite low positive relationship between trust and friendship and popularity The correlation between self-rating of trust and the sociometric rating of trust (.39) is also indicative of the cooperation and seriousness with which the subjects completed the sociometric task It may be surprising to some that the self-rating showed a relatively high relationship (.39) with the rating of trust made by others It should be remembered, however, that the self-rating came at the end of the sociometric task and all of the subjects knew that they were being rated on the same trait by others, providing pressure on them toward honesty Similarly, the relationship between the trust scale and the self-rating of trust (.29) might not have been so high if the knowledge that others had just rated them had not influenced the self-rating

The insignificant correlation between the Trust Scale and the

S-D Scale may appear surprising in light of the correlation of .29 found in the large sample. However, the S-D Scale was given in this case after a sociometric task in which each subject knew he was being rated by others on a number of variables As a result mean scores for the S-D test were significantly depressed in the direction of greater honesty The mean S-D score for the sociometric study was 12 4, for the earlier study it was 14 3.

While trust and trustworthiness showed a significant relationship, some evidence that they are also regarded somewhat differently can be found in the correlations of both variables, measured sociometrically, with popularity and friendship Trustworthiness is clearly seen as the more desirable trait with a significantly higher relationship to popularity

In summary, sociometric analysis reveals relatively good construct and discriminant validity for the Interpersonal Trust Scale as against observed behavior in groups who have had ample opportunity and a long time to observe each other. Trust as measured sociometrically was negatively related to dependency, not significantly related to gullibility, and positively related to humor, friendship, popularity, and especially trustworthiness.

Summary

Interpersonal trust, defined as a generalized expectancy that the verbal statements of others can be relied upon, appears potentially to be a fruitful variable for investigation in several fields of psychology A new, Likert-type scale was developed and refined on the basis of item analysis of internal consistency, relative independence of social desirability, and item spread Overall internal consistency and test-retest reliability appear satisfactory Demographic data were examined for 547 college students. Trust scale scores are related significantly to position in the family, socioeconomic level, religion, and religious differences between parents. A first assessment of construct and discriminant validity was attempted by a sociometric study of two fraternities and two sororities. Results indicate both good construct and discriminant validity for the Interpersonal Trust Scale

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