GENERALIZED EXPECTANCIES FOR INTERPERSONAL TRUST[1]

JULIAN B. ROTTER[2]
University of Connecticut

AT long last it seems that many thoughtful people have become aware that the strong value conflicts in our society can no longer be ignored and that radical change is necessary for survival. Many have also recognized that change in itself is not necessarily good and that change that will produce a better society must be controlled or planned. The atom bomb, the Asian war, the college student, the hippie, the black revolutions, and the problems of pollution and overpopulation have helped even politicians see that our problems have become deeper and that slogans and myths will no longer suffice. Where many psychologists have individually understood the serious and debilitating conflicts in society's values, most have preferred to follow more traditional, easier, or safer lines of study rather than to probe deeply into these culture conflicts and their consequences for personality development and social behavior. In recent years, however, a continually increasing number of social and personality psychologists have directed their energies toward investigations of our social ills. It is gratifying to observe the multiplication of studies of such problems as alienation, trust, altruism, bystander intervention, vandalism, Machiavellianism, and moral development.

If our society is to be improved, it will not come about because one group or another has seized or obtained power, but rather because social planners and people in power will have access to knowledge about how socially desirable traits or characteristics are developed and maintained, and will make use of that knowledge.

If it ever held sway, the morality of the ten commandments now has little effect on public or private behavior. Religion as a mass method for the development of moral behavior seems to have failed. Political creeds have lost their appeal, and, for better or worse, it now seems to be up to social scientists to provide the basis for a better society. Our society seems to be falling apart, and though it may be true that something better will naturally arise from the shambles, the chances that something better will develop may be materially enhanced by the knowledge that the social scientist may be able to provide. How successful we will be in producing the knowledge and in guiding its application is yet to be determined. The attempt is surely worth the effort.

In accord with these remarks, I would like to speak this afternoon on a series of investigations in the field of interpersonal trust conducted by myself and a group of students. This work has been carried out over the past seven years but still represents only a beginning. Most of the research has concentrated on individual differences, and I would like also to discuss in more theoretical terms the nature of such differences and how their study helps to clarify problems of broad social issues.

It is belaboring the obvious to discuss the significance of interpersonal trust in our society. It seems clear that disarmament will not proceed without an increase in trust on one or both sides of the iron curtain, as Osgood (1960) pointed out 10 years ago. The entire fabric of our day-to-day living, of our social order, rests on trust—buying gasoline, paying taxes, going to the dentist, flying to a convention—almost all of our decisions involve trusting someone else. The more complex the society, the greater the dependence on others. If trust weakens, the social order collapses. The absence of trust between government and the forces of law and order and the groups seeking change in our society has reached alarming proportions, and the results are likewise alarming.

I am aware that it makes no sense to try to rebuild trust in the absence of some social change.

[1] Presidential address to the Division of Personality and Social Psychology, read at the meeting of the American Psychological Association, Miami Beach, Florida, September 1970. The author is indebted to Donald Stein for his valuable assistance in preparing this article.

The research reported in this article was supported by the University of Connecticut Research Foundation (1965–1966 and 1967–1968) and the National Institute of Mental Health (Grants No. 11455 and 17741).

[2] Requests for reprints should be sent to Julian B. Rotter, Department of Psychology, University of Connecticut, Storrs, Connecticut 06268.

However, the attempt to decelerate what appears to be increasing distrust and to built a society in which people trust each other more may in itself demand changes in the behavior of individuals and groups that constitute positive social change.

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 on. If such expectancies are generalized and constitute a relatively stable personality characteristic, they should be readily amenable to investigation. This definition clearly departs significantly from other uses of the concept of basic trust which is used in a more general way, often synonymous with the healthy personality or belief in the goodness of others.

I will not attempt here to review the extensive literature on trust and trustworthiness. Much of the recent research falls into three groups: studies of the prisoner's dilemma or the two-person nonsum zero game recently reviewed by Vinacke (1969); studies of source credibility recently reviewed by Giffin (1967); and studies involving the choice of a smaller immediate reward versus a promised larger delayed reward, reviewed by Mischel (1966). Most of these investigations have dealt with condition differences or experimental manipulations and not with individual differences. With some exceptions, when individual differences were studied, they usually failed to find relationships between personality variables and trusting behavior, particularly in the prisoner's dilemma paradigm. One exception, evidenced from such studies as those of Deutsch (1960) and Wrightsman (1966), indicates that trust and trustworthiness are positively associated.

The failure of individual differences measures of stable personal characteristics in these studies can be attributed either to the fact that trust is a specific rather than a generalized characteristic, that the personality measures were themselves invalid, or that the measures used were poorly selected and perhaps irrelevant. However, a fourth possibility is that the prisoner's dilemma and similar games produce a relatively specific reaction, characteristic of competitive games but not of other kinds of interpersonal interactions. In fact, if the results of these studies were characteristic of everyday behavior, the normal adult is so competitive, uncooperative, and untrusting that he could hardly get through a normal day's activities.

Studies in which the experimental conditions are manipulated as a sole focus of the investigation have their limitations as well as their advantages. One limitation is that there are a large number of conditions that are worth studying but that cannot easily be manipulated experimentally. Perhaps a more serious limitation is that the parameters of groups that are used in such studies are not themselves varied so that it is not known whether the results could be generalized to other groups or, indeed, what variables in group selection are relevant in generalizing results. The advantages of conditions manipulations studies or so-called experimental studies are the ease of design and the fact that when condition differences appear, they may provide important leads not only for immediate application, but also for the origin or the nature of the conditions that produce individual differences.

Alternatively, the study of individual differences may produce important hypotheses for studies of conditions effects. Individual differences, particularly in social behavior, are largely the result of earlier condition differences, and individual difference measures are of primary significance for investigations involving the development, origin, maintenance, and stability of the behavior being studied. Most efficacious is the interaction design where conditions differences are combined with relevant personal measures. The effect of various kinds of experimental manipulations will vary as a result of using different groups of subjects regardless of whether we are studying trust, aggression, anxiety, cautiousness, dissonance reduction, or social attitudes. Only when we know whether or not interaction effects are present, do we begin to approach a meaningful understanding of the behavior we are studying.

Our strategy, therefore, was to develop a theoretically based measure of interpersonal trust focused on college students, not only as our most available subject population, but also because they represent the future policy makers of our society. Before going on to determine whether or not there is generality to trusting behavior, how differences in trust develop, and how individual differences in trust interact with a variety of experimental conditions, it is necessary to discuss the meaning of a

generalized expectancy within the framework of social learning theory.

In social learning theory, the potential of the occurrence of a behavior is considered to be a function of the expectancy that that behavior will lead to a particular reinforcement or reinforcements, and the value of these reinforcements in a given situation. In other words, there are four classes of variables with which we deal—behavior potentials, expectancies, reinforcement values, and situations.

The relationship we have postulated among these four variables allows for the prediction of a specific behavior in a given situation. The process of generalization accounts for the consistency and stability of behavior across situations. In social learning theory, an expectancy is a function of a specific expectancy, and a generalized expectancy resulting from the generalization from related experience. The relative importance of the specific expectancy is a function of the degree of experience in that specific situation, or conversely, the importance of generalized expectancy is a function of the degree of novelty, ambiguity, or unstructuredness of a particular situation. The more novel the situation, the greater weight generalized expectancies have. Because expectancies generalize along lines of perceived similarity, relatively stable modes of responding develop, and a learned basis for a theory of personality is provided. A full statement of this theory is provided elsewhere (Rotter, 1954; Rotter, Chance, & Phares, 1971). What is important here, however, is that the theory itself provides for general characteristics and also for specificity. The situation partially determines the response, and the theory predicts that situations of considerable familiarity are less predictable from a generalized tendency than those involving more novelty. Whether or not one trusts his wife would give us less information about whether the same person would trust the butcher than if we knew whether or not he trusted his automobile mechanic. If one wanted to relate trust of marital partners to marital adjustment, a test specifically designed to measure such trust would be better than one that sampled trust of butchers and automobile mechanics. The difference between specific and generalized expectancy is relative and arbitrary, but the distinction is of considerable significance for the development of certain kinds of personality measurement instruments.

Early research in social learning was concerned with psychological needs, that is, with the prediction of classes of behavior, functionally related in that they led to the same or similar reinforcements. In recent years, we have turned our attention to another class of content variables or personality variables which are referred to as generalized expectancies for problem solving. Man is a categorizing animal. He continuously forms concepts, changes concepts, and discovers new dimensions of similarity. Where similarity is perceived, the basis for generalization and a functional personality concept is present. Psychological situations, both social and nonsocial, may also be perceived as similar in that they present similar problems. For example, all of us are continuously faced with the problem of deciding whether what happens to us is contingent on our own behavior and can be controlled by our own actions or whether it depends upon luck, the intervention of powerful others, or influences which we cannot understand. Some of you will recognize that the general problem just described has been conceptualized as internal versus external control of reinforcement (Rotter, 1966). We have also done work with generalized expectancies for cautiousness, for guilt, and a generalized expectancy that problems can be solved by the technique of looking for alternatives (Rotter et al., 1971). It is not the reinforcement which is similar in the various situations in which the individual finds himself, but it is some aspect of the situations which presents a similar problem.

Another common human experience is that of being provided with information from other people, either promises of reinforcements to come, or merely statements of presumed fact. Implicit in all these situations is the problem of whether or not to believe the other person. On this basis, we have hypothesized a generalized expectancy of trust or distrust.

Following these theoretical lines, we have constructed what I refer to as an additive test of interpersonal trust. An additive test is one whose purpose is to sample a broad range of situations of more or less equivalent strength with the effectiveness of the instrument dependent upon the adequacy of the sampling of situations. In contrast, a power test varies items in strength and samples from a narrow or restricted range of events. Achievement tests are typical power tests. Additive tests have some characteristics that should be noted.

In general, they may be expected to provide lower prediction in any specific situation than a power test devised to measure in that situation, but be able to predict to a greater range of situations. They may also be expected not to predict at all in some situations in which the subjects have had a great deal of consistent experience. Internal consistency of additive tests would be expected to be lower than that of power tests.

The test construction procedure followed was to devise a large number of items presented in a Likert format which appeared to deal with belief in the communications of others. The others dealt with were not specific persons with whom the individual had had a long time close association, but rather classes of significant others whose behavior could affect the subject's life. Consequently, items dealt with such social agents as teachers, other students, judges, newspaper writers, politicians, etc. Following administration of these items to a large number of male and female college students, items were retained or rejected on the basis of three criteria. The first of these was a significant correlation with the total of all the other items with that item removed, the second was that the item produced a spread of scores providing maximum differentiation of subjects, and the last was that the item did not correlate too highly with the Marlowe-Crowne Social Desirability scale (Crowne & Marlowe, 1964).

We did not attempt to eliminate all relationship to social desirability because we felt that theoretically the motive for social approval was not entirely unrelated to trust of others.

The final form of the test included 25 trust items and 15 filler items. The scale has an internal consistency of .76, and retest reliabilities for five weeks, three months, and seven months were, respectively, .69, .68, and .56. For males and females combined, the test correlates .29 with the Marlowe-Crowne Social Desirability scale which suggests that trust is regarded as a socially desirable trait, but that the total amount of variance in the test scale accounted for by the social approval motive is relatively small. It is clear that the expression of distrust in many situations is not followed by social disapproval. There is no significant correlation with college entrance scores. Contrary to the belief of many, high intelligence does not necessarily lead to distrust. Alienation, in the sense of powerlessness, as measured by the Internal-External Control scale is significantly related to scores on the trust scale. Since both scales are questionnaires, method variance could account for the correlation. But the relationship remains significant and in the thirties in four large samples when social desirability is partialed out. In any case, it is logical that those who distrust would feel less ability to control and that those who felt that they could not control what happened to them would be somewhat lower in trust.

Some demographic data are available on the scale. Two studies indicate that youngest children are less trusting than only, oldest, or middle children (Geller, 1966; Rotter, 1967). College students reporting themselves as agnostics and atheists are significantly less trusting than others. Students who perceive their parents as believing in two different religions are less trusting than those who perceive both parents as believing in the same religion or lack of religion. Differences among religious affiliations are present, but they appear to reflect socioeconomic differences in our population. In any case, at the University of Connecticut, Jewish students were found to be more trusting, followed by Protestants, and Catholics being least trusting. Socioeconomic level of parents shows a small but consistent decrease in trust with decreasing socioeconomic levels. Since large numbers of subjects were used in the study of demographic characteristics, relatively small differences were significant, and overlap among groups was very great.

In order to assess the construct validity of this scale, a first study was conducted (Rotter, 1967) using a sociometric method in college fraternities and sororities. Two sororities and two fraternities were used, and all members of these organizations who had lived together for a period of at least six months were included in this study. In addition to asking subjects to nominate members of the group who were highest and lowest in interpersonal trust, three other variables were included that might be related to trust—gullibility, dependency, and trustworthiness. As control variables, humor, popularity, and friendship were included.

The results of this study indicate that the scale could significantly predict sociometric ratings of trust and that these predictions were significantly higher than the control variables of popularity, friendship, and humor. In other words, discriminant as well as construct validity was demonstrated.

Interestingly enough, gullibility and dependency were negatively related to trust, both as measured by the trust scale and sociometric trust. The high truster does not trust out of a need to have someone else take care of him, and apparently he is not regarded as someone who is easily fooled, tricked, or is naive. On the other hand, as demonstrated in previous studies, trustworthiness is closely related both to sociometric trust and to the interpersonal trust scale (see Rotter, 1967).

An unpublished dissertation by Geller (1966) assessed the validity of the scale under experimental conditions with a behavioral criterion. The study by Geller and some of the others referred to involved deception. It seems paradoxical that an interest in interpersonal trust would lead to deception experiments, and we have avoided them wherever possible. However, for some problems it is extremely difficult to study trust in the laboratory without some mild deception. In Geller's study, trust scale scores were collected in the elementary psychology course on the first day of classes, and the experiment that took place from two to four months later was not connected in any way by the subjects with the test administration earlier. A similar procedure was used in the other studies referred to later in this article.

Geller (1966) had three groups of subjects. The first group volunteered for a study of auditory discrimination. They were brought into the laboratory and went through the Crutchfield variation of the Asch conformity experiment. They were then asked to fill out a brief form, and while they were doing so, a student confederate told them that they had just been tricked and that there were, in fact, no other subjects in other booths and that the whole thing was done by the use of a tape recorder. Following this, they were taken to another room where the second part of the experiment began. The second group was similar to the first except that the confederate only made some small talk and did not reveal that the Asch situation was a hoax. The third group was not placed in the Asch situation at all, but brought immediately to the second part of the experiment.

In the second phase of this experiment, subjects were asked to discriminate two chords played on a tape recorder as to whether they were the same or different. The chords had been pretested and were easily identified by 100% of the pretest subjects. Subjects were told that we were interested in how quickly they could make the discrimination and were shown a simple apparatus with two brass knobs, one of them labeled "Same," and one, "Different." The experimenter demonstrated, "When the two chords were the same, you pull out one knob; when they were different, you pull out the other." As he pulled out the knob for "Different," a big blue spark leaped out from the apparatus making a loud noise. The experimenter jumped up and down, swore, and finally said, "I thought they had fixed that." He then retreated behind the apparatus, stayed there 10 seconds, came out and assured the subject that it was now fixed and that he would not get a shock.

Following the behavioral criterion situation, subjects were taken to another room and interviewed about their feelings about the experiment using a structured open-ended interview. Judges rated responses to determine whether or not they trusted the experimenter when he said that the apparatus was fixed. Blind ratings by judges who did not know which group the subject was in were used.

In the behavioral criterion situation, the first four chords on the tape were all different, and it was possible to measure how long it took the subject before he pulled out the knob, whether he pulled it out at all, and other spontaneous comments and behavioral indications that he did not trust the experimenter's reassurance. Judges behind a one-way screen rated behavior without knowing a subject's group membership. Geller (1966) hypothesized that the group that had been told they had been tricked earlier would show the greatest distrust in this situation, the control group the least, and those who had gone through the Asch situation and who had been told nothing would be in the middle. In general, these results were obtained, and they are best illustrated by the correlations of the trust scale with trusting behavior in the behavioral situation and in the interview that followed.

In the behavioral criterion situation, the trust scale correlated with trusting behavior significantly only in the control group. The correlation of .38 was about the same as that obtained in the sociometric study. In the deception-concealed situation, the correlation fell to .14, and in the deception revealed, to −.04. Apparently subjects who have been told that they have been tricked, even though trusting to begin with, will not trust further. These findings support the sociometric study which indi-

cates that gullibility and trust are two different variables. It also suggests that the Asch situation in itself produces more suspicion than many experimenters seem to be aware of.

One of the most interesting findings from this study is that in the interview situation a significant correlation of −.43 appeared between the trust scale and admission that the subject was suspicious of the experimenter only in the group that had had the deception revealed. That is, in this group, high trusters said that they were suspicious and low trusters said they were not. Analysis of the behavior of this group indicated that on the behavioral criterion, most subjects, both high and low trusters, were suspicious. The high trusters told the truth and admitted it, the low trusters denied it. The point is of considerable significance for deception studies that rely on interviews to demonstrate the success of a deception. What these results indicate is that low trusters, the people who might be expected to be most suspicious, are the ones who will deny suspicion. While these results may not be generalizable to all deception studies, they are true for this study under conditions where the subject has good reason to feel that he has already been tricked by the experimenter.

The study by Roberts (1967) deals with the same topic. In Roberts' research, the subjects were given some experimenter tips on how to use their time most effectively in preparing for a reading comprehension test. Both high and low trusters, who were given correct tips, made increased use of the suggestions over three trials. For subjects, however, who were given incorrect tips, the low trusters quickly abandoned the experimenter's advice, but the high trusters persisted in following it over the three trials of the experiment. The high trusters showed a gradual decline, the low trusters, a precipitous one. The results appear contradictory to the previous study which indicated high trusters were not gullible. The difference between the two studies, however, was that in Roberts' study, after having given the wrong advice, the experimenter admitted it was the wrong advice, apologized, and said the next time he would do better. High trusters, in other words, will permit a mistake or two and still trust providing the mistake is admitted and an apology made. If they are shown clear-cut evidence that they have been tricked, they will continue to extend trust. The point may be of significance for government and other institutions that have lost credibility with the public and hope to regain it.

Other studies illustrate the breadth or range and limitations of behavioral prediction possible from this scale. Gilbert (1967) studied subjects' willingness to disclose personal and uncomplimentary information about themselves and found such willingness significantly related to their trust scores.

MacDonald, Kessel, and Fuller (1970), however, failed to obtain any relationship between willingness for self-disclosure using the Jourard Scale and interpersonal trust scores; nor did they find a correlation between interpersonal trust scores and a modified prisoner's dilemma game. As they point out, however, their game did not require believing or not believing someone else, but rather dealt with belief in the benevolence or malevolence of the other person. At least in this game situation, the two are not related. Similarly, in two studies involving sensitivity groups (Aronson, 1970; Stein, 1970), the interpersonal trust scale did not relate to judges' ratings of subjects' openness in this situation. The kind of trust we are measuring, it appears, is what we set out to measure, an expectancy that communications can be believed, not a willingness or desire to speak about private matters to strangers or belief in the benevolence of others in competitive situations. Hamsher (1968) also failed to find a statistically significant relationship, although a trend was present, between interpersonal trust scores and trusting behavior in a competitive stock market game where communications were exchanged and the subjects had the choice of lying or telling the truth. He did, however, find a statistically significant relationship between interpersonal trust scores and trustworthiness in the game. In other words, although high trusters in this game showed only a trend toward believing communications of competitors more than low trusters, they found it more difficult to lie than did low trusters.

Hamsher, Geller, and Rotter (1968) related trust scale scores given at the beginning of the semester, as in the other studies reported, to a survey on belief in the Warren Commission Report given one month later. A strong relationship between trust scale scores and the belief that the Warren Commission knew there was a conspiracy and was covering it up was present. Eighty-five percent

of the subjects said that they had followed the controversy closely.

An interesting sidelight of this study was that the responses to the question "I believe that there was, in fact, a conspiracy and information about it has been kept from the public" was responded to positively by 28% of the subjects; 19% said, "I don't know"; and only 52% said, "No." These figures are not much different from those of public opinion polls reported in the newspapers which asked a similar question. That 28% of the public could unequivocally believe that a committee which had been formed with the purpose of placing on it those people who were most believable and respected in our country could feel that these people were deliberately lying to them is indeed shocking.

In a study whose primary focus was investigation of sex guilt, Boroto (1970) obtained an interesting incidental finding regarding the trust scale. Boroto's subjects were brought into a room where he presumably had some personal information about them in a folder and where he also accidentally knocked over a folder containing "filthy pictures" on his way out of the office to answer a telephone call. Scooping up the pictures and replacing them in the folder, he left the office where the subjects were being observed surreptitiously. When Boroto divided his subjects into those who looked into the folder involving their personal information, or the dirty pictures, or both, and compared them with those subjects who did not invade the experimenter's privacy, he found considerable difference in the mean trust scores. Those who looked at neither folder had a mean interpersonal trust score of 80, and those who looked at either of the folders averaged a score of 66. The difference is not only highly statistically significant, but is approximately one and a half standard deviations different. The average score for those who looked at either folder was close to the mean of the larger population. It was those who did not look at either folder who were deviant in being unusually high on trust. Interestingly enough, in a later interview, about half of the subjects who had looked at the folders denied looking at them.

Two studies have investigated the antecedents of interpersonal trust in college students. Katz and Rotter (1969) sent the parents of 100 students, who were one-half of a standard deviation above and 100 students who were one one-half of a standard deviation below the mean of a larger group, trust scales using a strong appeal and received 67% returns. The students themselves had taken the scale approximately one year earlier. The letters were sent so that they would arrive on Monday, and it was requested that they be returned by Friday. They were sent only to parents of students who lived some distance from campus so that the potential of contamination from the students themselves was minimal. The results indicated no differential return rate from the parents of high trusters or low trusters. The fathers of high-trusting sons were significantly higher on trust than the fathers of low-trusting sons. The fathers did not appear to have a significant effect on daughters, and mothers' scores showed a weak statistical trend toward a small and equal effect on sons and daughters. The important role the father appears to have in influencing the trust of sons we have interpreted as due to the fact that it is the father who interprets the trustworthiness of outside agents to the family. His major concern is in educating his son who must like him eventually make his way in a world where he is continuously dealing with strangers.

A study by Into (1969) investigated a large number of child-raising behaviors by interviewing college students and obtaining their statements about their parents' behavior during childhood. While such studies have their obvious limitations, they can be the source of valuable hypotheses, and they do provide some suggestive evidence. A large number of variables were investigated, and the results are too extensive to be reviewed here. What is clear is that the strongest effects were modeling effects, both of the father and the mother, and direct teaching effects. The parents of high trusting subjects were more trusting to their children, were more trustworthy, trusted outsiders more, and directly taught trust and trustworthiness. Although these effects were significant for both fathers and mothers, they were again a little stronger for fathers. One finding of interest in relationship to the earlier reported differentiation of trust as an expectancy for truthfulness versus trust in the belief in a benign world, was that low trusters were likely to report that their parents made no threats or made them and did not keep them, and high trusters were likely to report that their parents both made and kept threats.

Hochreich (1966) has developed a cartoon type test to study trust in children. The test differentiates children who select an immediate lesser reward from a larger promised delayed reward at less than the .10 level of significance in the expected direction. Too little data on this instrument, however, are available to assess its validity.

While discussing developmental antecedents of low trust, mention should be made of the relationship of trust to adjustment. Four independent samples of subjects from various experiments provided scores on the Incomplete Sentences Blank (Rotter & Rafferty, 1950), a measure of college student adjustment; and the Interpersonal Trust Scale (Geller, 1966; Hochreich, 1968; Mulry, 1966; Rotter & Stein, 1970). It seems to be clearly established that low trust correlates with maladjustment as measured by the Incomplete Sentences Blank. The correlation is low but significant in all samples when sexes are combined. Most samples show a higher relationship for females, but whether or not the difference between males and females is characteristic of the total student population is still unclear. In some samples where it is possible to partial out the effects of social desirability, the significant relationship between adjustment and trust remains. Of course, it cannot be determined from this data whether low trust leads to adjustment problems or adjustment problems lead to low trust, or whether, in fact, both are the effects of developmental experiences.

With Donald Stein, I have also been studying public attitudes of trust toward various occupational groups (Rotter & Stein, 1970). We have set up separate rating scales for trust, competence, and altruism. We have obtained four samples of subjects—200 elementary psychology students from the University of Connecticut, 100 from the University of Maryland, 50 secretaries in a public school system, and 50 high school teachers. Most of the secretaries had only a high school education plus some business training and had an average age of 38. The 50 teachers all had bachelor's or master's degrees and had an average age of 35. The results of this study are still being analyzed, but some preliminary results are of interest.

Surprisingly, the mean ratings given to the 20 occupations correlated, from one sample to another, in the nineties for all variables and groups. That is, the attitudes of the teachers, male and female college students of two different universities, and secretaries—populations which varied in age, sex, education, and geography—were all surprisingly and highly similar. The average rating, by the subjects, of the truthfulness of the 20 occupations, also correlated significantly with their trust scales. This suggests that the studies done about attitudes of college students would not be too dissimilar from those of the more general population which might be called white collar or middle class. The second finding of interest is that although these scales intercorrelated, when all the samples are combined, the correlation between trust and competence is .60; between trust and altruism, .63; and between competence and altruism, .55. There was still a considerable independent variance. If the correlations between the means of the different samples can be taken as an estimate of reliability, it is clear that the three scales are measuring at least partially independent variables.

Time permits only a brief description of some of the interesting findings regarding specific occupations. Of particular interest is the discrepancy between rankings on the different scales for some of the occupations. For example, clergymen who ranked first on altruism, ranked only eighth on competence. Dentists, on the other hand, ranked second on competence but sixth on altruism. Psychiatrists and psychologists ranked higher on altruism than they did on competence and truthfulness. Surprisingly, law enforcement officials were rated as ranking ninth on altruism, tenth on truthfulness, but sixteenth on competence. Executives of large corporations ranked ninth on competence, fourteenth on truthfulness, and eighteenth on altruism. The anchor occupation which ranked lowest on all three scales was used car salesman, and physicians are seen as highest in competence and truthfulness.

The psychologists' rating on truthfulness was seventh, better than the average but not really anything to brag about. It should be a matter of concern to psychologists who desire to make contributions to our society that this rating does not become any lower and, hopefully, will become higher. Continuation of large numbers of deception experiments and the public announcement of opinions as substitutes for replicable data obviously will not help it.

Finally, the question of whether or not trust in significant others in this society is indeed dropping

during recent years should be considered. Since 1964, my assistants and I have tested the elementary psychology students under comparable testing conditions every fall semester, and in some years also in the spring semester. Analyses have indicated that the samples have not changed significantly in class rank, in college entrance examination scores, or ethnic composition. In all, 4,605 students were included in the six-year study, and each of the individual samples is large. The results are somewhat startling in that each year there was a significant drop in mean trust scores comparing the September testing with the prior September testing. These results are in agreement with a recent report of Wrightsman and Baker (1969) who gave a Philosophies of Human Nature Scale to incoming freshmen at Peabody University on several occasions over the period 1954–1968. A subscale of this test dealing with trust showed a significant decline over the period. Trust was defined by them as "the extent to which people are seen as moral, honest or reliable [p. 299]."

In the 1964 study, the average score was 72.4; in 1969, it was 66.6 (Hochreich & Rotter, 1970). The difference is not only highly statistically significant, but it indicates that a student who was at the mean of the distribution in 1969 would have been in the lower one-third of the distribution in 1964. That such a drop is not the result of it becoming less socially desirable to express trust, is attested to by the fact that correlations with the Marlowe-Crowne Social Desirability scale and the trust scale did not differ significantly over the period studied.

An item analysis was made to discover how general was the drop in trust and in what items was it greatest. In all, 14 items dropped significantly, and 1 increased significantly from 1964 to 1969. The items that showed the greatest decrease included those in the areas of politics, peace keeping, and communications. The items that showed little or no change included mainly those dealing with social agents with whom the subjects were likely to have had some direct contact, such as parents, repairmen, salesmen, ordinary people. The decline in trust over the last six years may not be surprising to many, but it appears to the author to indeed be precipitous, and should it continue, our society would be in serious trouble, if it is not so already.

REFERENCES

ARONSON, S. R. A comparison of cognitive vs. focused-activities techniques in sensitivity group training. Unpublished doctoral dissertation, University of Connecticut, 1970.

BOROTO, D. R. The Mosher Forced Choice Inventory as a predictor of resistance to temptation. Unpublished master's thesis, University of Connecticut, 1970.

CROWNE, D. P., & MARLOWE, D. *The approval motive: Studies in evaluative dependence.* New York: Wiley, 1964.

DEUTSCH, M. Trust, trustworthiness, and the *F* scale. *Journal of Abnormal and Social Psychology,* 1960, **61** 138–140.

GELLER, J. D. Some personal and situational determinants of interpersonal trust. Unpublished doctoral dissertation, University of Connecticut, 1966.

GIFFIN, K. The contribution of studies of source credibility to a theory of interpersonal trust in the communication process. *Psychological Bulletin,* 1967, **68**, 104–120.

GILBERT, J. Interpersonal trust: Implications for psychotherapeutic technique. Unpublished master's thesis, University of Connecticut, 1967.

HAMSHER, J. H., JR. Validity of personality inventories as a function of disguise of purpose. Unpublished doctoral dissertation, University of Connecticut, 1968.

HAMSHER, J. H., GELLER, J. D., & ROTTER, J. B. Interpersonal trust, internal-external control, and the Warren Commission report. *Journal of Personality and Social Psychology,* 1968, **9**, 210–215.

HOCHREICH, D. J. A children's scale for measuring interpersonal trust. Unpublished master's thesis, University of Connecticut, 1966.

HOCHREICH, D. J. Refined analysis of internal-external control and behavior in a laboratory situation. Unpublished doctoral dissertation, University of Connecticut, 1968.

HOCHREICH, D. J., & ROTTER, J. B. Have college students become less trusting? *Journal of Personality and Social Psychology,* 1970, **15**, 211–214.

INTO, E. C. Some possible childrearing antecedents of interpersonal trust. Unpublished master's thesis, University of Connecticut, 1969.

KATZ, H. A., & ROTTER, J. B. Interpersonal trust scores of college students and their parents. *Child Development,* 1969, **40**, 657–661.

MACDONALD, A. P., KESSEL, V. S., & FULLER, J. B. Self-disclosure and two kinds of trust. Unpublished manuscript, Rehabilitation Research & Training Center, West Virginia University, 1970.

MISCHEL, W. Theory and research on the antecedents of self-imposed delay of reward. In B. A. Maher (Ed.), *Progress in experimental personality research.* Vol. 3. New York: Academic Press, 1966.

MULRY, R. C. Personality and test-taking behavior. Unpublished doctoral dissertation, University of Connecticut, 1966.

OSGOOD, C. E. A case for graduated unilateral disarmament. *Bulletin of Atomic Scientists,* 1960, **16**, 127–139.

ROBERTS, M. D. The persistence of interpersonal trust. Unpublished master's thesis, University of Connecticut, 1967.

ROTTER, J. B. *Social learning and clinical psychology.* Englewood Cliffs, N. J.: Prentice-Hall, 1954.

ROTTER, J. B. Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs,* 1966, **80**(1, Whole No. 609).

ROTTER, J. B. A new scale for the measurement of interpersonal trust. *Journal of Personality,* 1967, **35**, 651–665.

ROTTER, J. B., CHANCE, J., & PHARES, E. J. *Applications of a social learning theory of personality.* New York: Holt, Rinehart & Winston, 1971, in press.

ROTTER, J. B., & RAFFERTY, J. E. *Manual for the Rotter Incomplete Sentences Blank.* New York: Psychological Corporation, 1950.

ROTTER, J. B., & STEIN, D. K. Ratings of the trustworthiness, competence and altruism of twenty representative occupations. Unpublished manuscript, University of Connecticut, 1970.

STEIN, D. K. Expectation and modeling in sensitivity groups. Unpublished doctoral dissertation, University of Connecticut, 1970.

VINACKE, W. E. Variables in experimental games: Toward a field theory. *Psychological Bulletin,* 1969, **71**, 293–318.

WRIGHTSMAN, L. S. Personality and attitudinal correlates of trusting and trustworthy behaviors in a two-person game. *Journal of Personality and Social Psychology,* 1966, **4**, 328–332.

WRIGHTSMAN, L. S., & BAKER, N. J. Where have all the idealistic, imperturbable freshmen gone? *Proceedings of the 77th Annual Convention of the American Psychological Association,* 1969, **4**, 299–300. (Summary)