

144
898
THS

Thesis for the Degree of M. A.
MICHIGAN STATE UNIVERSITY
Robert Gurney
1968

THESIS



LIBRARY
Michigan State
University

~~SECRET~~

~~SECRET~~ 144

~~SECRET~~

200 A319

JAN 11 2000

ABSTRACT

TRUST, TRUSTWORTHINESS AND AUTHORITY

by Robert Gurney

A sample of 106 Ss, of whom 37 were female, were tested on the following seven variables: California F Scale (F), lack of confidence in authority figures (AF), tendency to behave according to a norm of reciprocity (R), trust (T), trustworthiness (TW), perceived trust (PT), and perceived trustworthiness (PTW). AF was measured with a 16 item, moderately reliable (Cronbach's coefficient alpha = .69), Likert attitude scale constructed by E. R. T. TW, PT and PTW were measured with a paper-and-pencil adaptation of the "prisoner's dilemma".

On the basis of ideas found in psychoanalysis and sociological functionalism, together with empirical findings obtained by Deutsch in 1960, three hypotheses were formulated. (1) AF and R correlate negatively. (2) F and R correlate negatively. (3) F and AF correlate either positively or negatively.

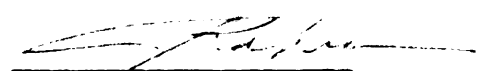
Analysis of the data showed no support for these hypotheses. (1) AF correlated positively not only with R but also with T and PT. (2) F correlated positively with R and PTW. (3) Although F and AF did not correlate with one another, a significant negative correlation was found between F and a subscale of AF, consisting of the reverse

Robert Gurney

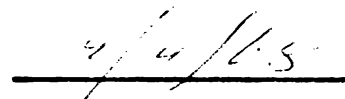
scored items of the AF scale. This last finding seemed to indicate the possible effect of a response bias. Since the nonsupport of hypothesis (2) differed from Deutsch's findings, a more detailed comparison of the two studies was made. This comparison showed significant differences between the two. Finally, no sex differences were found.

The discussion of this study focussed on the meaning of F Scale scores. On the basis of a model formulated by E to describe subjects' responding to Likert scale items, F was interpreted as an index of "contact with reality"--an interpretation which seemed to adequately explain the data from both the present and Deutsch's study. The results for hypothesis (1) were interpreted in terms of T rather than R. Finally, a three variable model for investigating T was proposed. The three variables were perception of the past, perception of the present and perception of the future.

Approved


Committee Chairman

Date


4/14/65

TRUST, TRUSTWORTHINESS AND AUTHORITY

by
Robert Gurney

A THESIS

Submitted to

Michigan State University

in partial fulfillment of the requirements

for the degree of

MASTER OF ARTS

Department of Psychology

1968

050032
7-11-8

To 136 introductory, psychology students
who forced me to reconsider
a few hypotheses

ACKNOWLEDGMENTS

Being able to look at sixty or so sheets of paper and gasp, "My thesis--finished!" I probably differ little from others who have had the same experience and the concomitant feeling of gratitude to the world. Yet, there exist a few denizens of this world to whom I feel doubly grateful.

Certainly, foremost among these persons are the three gentlemen who served as my committee. I was extremely fortunate to have had as my chairman, Dr. Albert Rabin. Both his insightful questions about my ideas and his many courtesies which encouraged me to seek the answers to these questions were invaluable stumbling blocks to my ignorance. I am also grateful to Dr. James Phillips who, in addition to being a member of my committee, is my academic adviser. To a large extent, my academic interests of today are a result of yesterday's help from Dr. Phillips--a fact for which hopefully I shall always be thankful. To Dr. John Hurley, my third committeeman, I owe my discovery of the question which constitutes the foundation of this thesis. For this and subsequent assistance, I am very appreciative.

While the virtues of this paper are much the virtues of its critics, its vices are mine.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	111
LIST OF TABLES	v
LIST OF FIGURES	vi
LIST OF APPENDICES	vii
INTRODUCTION	1
PROCEDURE	9
Subjects.	9
Method	9
RESULTS	14
DISCUSSION.	27
The California F Scale--A detour into theory	28
The third hypothesis ,	39
The second hypothesis	40
The first hypothesis	42
Conclusion	44
REFERENCES	46

LIST OF TABLES

Table	Title	Page
1	Authority Figures Scale and Part-Whole Correlations Between Individual Items and Scores on the Entire Scale	10
2	X^2 Test of Sexual Differences in "Prisoner's Dilemma" Behavior	16
3	Proportions of NYU and MSU Subjects Manifesting Different Types of "Prisoner's Dilemma" Behavior	21
4	Relationship Between F Scale Scores of NYU Subjects and Types of "Prisoner's Dilemma" Behavior	24
5	Relationship Between F Scale Scores of MSU Subjects and Types of "Prisoner's Dilemma" Behavior	25

LIST OF FIGURES

Figure	Title	Page
1	Payoff matrix for a "prisoner's dilemma" game.	11

LIST OF APPENDICES

Appendix	Title	Page
A	RECIPROCITY AND AUTHORITY	48
B	QUESTIONNAIRES	50

TRUST, TRUSTWORTHINESS AND AUTHORITY

by Robert Gurney

INTRODUCTION*

The thesis of this paper is that authority relationships and reciprocal relationships are both characterized by an at least temporary surrender by one actor (Ego) of some instrument or means for gratifying his own internal needs and a temporary gain in this power by the other actor (Alter). An authority relationship is defined as an interpersonal relationship in which Alter possesses power over Ego as a result of Ego's voluntary submission to Alter (Mills, 1961). A reciprocal relationship is defined as a dyadic relationship in which Ego becomes a creditor to the debtor Alter (Gouldner, 1963). The thesis of this paper states that insofar as Ego makes himself dependent upon Alter's repayment of the debt for satisfaction of his (Ego's) needs, Ego subordinates himself to Alter.

We may go beyond this initial statement to pose a question. Does Ego's act of subordinating himself to Alter imply that Alter possesses complete control of the Ego-Alter dyad? One way in which to reply, "No," to this question

* An abbreviated version of this introduction may be found in Appendix A, p. 48.

results from postulating two forms of authority. The form already discussed may be called interactional authority. This refers to Alter's control over the dyad's activities and is an effect of Ego's act of subordinating himself to Alter. The second form may be labeled normative authority. This refers to Ego's control of Alter as a result of a norm which places obligations on Alter to treat Ego fairly. Perhaps, an example will help to clarify these concepts. Consider a typical, dyadic, reciprocal relationship--a friendship between Alphonse and Cecilia. Suppose Alphonse, a poverty-stricken, college student, suggests to Cecilia that she let him take her to dinner. "Just name the place," he says. This statement gives Cecilia what has been called interactional authority--namely, control over the dyad's activity. This control is not without limits, however. If the young lady were to suggest an extremely costly restaurant, Alphonse could certainly complain, "Is this what our love means to you?" This ability of Alphonse to appeal to either a norm or an abstract concept like love which implies a norm, has been termed normative authority. On the basis of these two types of authority, we may contend that an individual subordinates himself to another only if in subordinating himself, he acquires normative authority or, at least, believes he is acquiring normative authority.

The research hypotheses formulated as guides for analyzing the above theorizing are, to some extent, based upon three sources--sociological functionalism, psychoanalytic

theory and empirical investigations of the "prisoner's dilemma". The contribution of sociological functionalism is its analysis of social systems and the relationship of these systems to personality systems. From this analysis five propositions have been extracted.

1. According to Pareto social systems strive to maintain equilibrium and can be disequibrated only by forces external to themselves. They react to disequilibrium by restoring themselves to equilibrium (i.e., the original state of the system). (Martindale, 1960).

2. The personality system is distinct from the social system (Parsons, 1951).

3. The personality system is motivated by a tendency to maximize gratification of this system's need dispositions (Parsons, 1951).

4. Social norms "constitute . . . the core of the stabilizing mechanisms of the system of social interaction" and are essential components of both personality and social systems (Parsons, 1964).

5. The "norm of reciprocity, in its universal form, makes two interrelated, minimal demands: (a) people should help those who have helped them, and (b) people should not injure those who have helped them." (Gouldner, 1963).

From propositions 1, 2 and 3, it follows that disequilibrium in a social system can be caused by a personality system's attempt to gratify its needs. If gratification of needs is governed by a social norm, however, the disequilib-

rium of the social system will be only temporary (by propositions 1 and 4). More specifically, if an interaction is governed by a norm of reciprocity, the gratification of Alter's needs with the assistance of Ego will be accompanied or followed by the gratification of Ego's needs with the assistance of Alter (by propositions 1, 4 and 5).

From psychoanalytic theory five propositions about the nature of personality systems have been extracted.

1. The "principle of stability" states that the "organism strives to preserve those optimal internal conditions under which the process of life is possible." (Alexander, 1948). This is analogous to Pareto's concept of equilibrium.

2. Intrapsychic excitation or instability may be caused by extrapsychic or external stimuli or by the pressure of internal needs, impulses and wishes (Alexander, 1948).

3. The usual sources of instability are the internal needs, impulses and wishes of the organism (Alexander, 1948).

4. ". . . the ego's basic function is to maintain constant conditions in the organism. It is the agent of the stability principle." (Alexander, 1948).

5. To optimally satisfy internal motives, the ego makes an at least tacit contract with society. By this contract the individual agrees to submit to societal authority on the condition that this submission helps him to satisfy his internal needs. Within the individual the meter of this contract's success is the "sense of justice"--the individual's feeling of being fairly or unfairly treated by

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. The text suggests that organizations should implement robust systems to track every detail, from small expenses to major investments, to ensure that all data is reliable and accessible.

2. The second section focuses on the role of technology in modern record-keeping. It highlights how digital tools and software can significantly reduce the risk of human error and improve the efficiency of data management. The author argues that adopting cloud-based solutions can facilitate real-time monitoring and reporting, which is crucial for timely decision-making. However, it also cautions against over-reliance on technology, stressing the need for regular backups and security protocols to protect sensitive information.

3. The third part of the document addresses the challenges of data integration and interoperability. It notes that many organizations struggle to combine data from different sources, leading to fragmented views and inconsistent reporting. The text proposes standardizing data formats and using APIs to ensure that information flows seamlessly between various systems. This approach is seen as a key to achieving a unified and comprehensive view of the organization's operations.

4. The fourth section discusses the importance of data security and privacy. With the increasing volume of data being collected and stored, the risk of breaches and unauthorized access has become a major concern. The author recommends implementing strong encryption, access controls, and regular security audits to safeguard data. Additionally, it stresses the importance of complying with relevant data protection regulations to maintain trust and avoid legal repercussions.

5. The fifth part of the document explores the value of data analysis and reporting. It argues that raw data is only as good as the insights it provides. By utilizing advanced analytics and visualization tools, organizations can uncover hidden trends, identify areas for improvement, and make data-driven decisions. The text encourages a culture where data is not just collected but actively analyzed and shared across the organization to drive growth and innovation.

6. The sixth section touches upon the human element of data management. It recognizes that while technology and processes are important, the people involved are the ultimate key to success. The author advocates for training and development programs to ensure that staff are equipped with the necessary skills to handle data effectively. Clear communication and collaboration are also emphasized as essential for the successful implementation of any data strategy.

7. The seventh part of the document discusses the long-term sustainability of data management practices. It suggests that organizations should regularly review and update their systems and policies to keep pace with technological advancements and changing requirements. A flexible and adaptable framework is recommended to ensure that data management remains a continuous and evolving process rather than a one-time task.

8. The eighth section provides a summary of the key points discussed throughout the document. It reiterates the importance of accuracy, technology, integration, security, analysis, and human resources in creating a robust data management system. The author concludes by expressing confidence that these principles, if followed diligently, will lead to improved operational efficiency and strategic success for any organization.

9. The final part of the document is a call to action, urging readers to take immediate steps to assess their current data management practices and implement the recommended changes. It offers resources and support for those looking to further explore these topics, emphasizing that the journey to effective data management is ongoing and requires commitment and effort.

the societal authority figures (Alexander & Staub, 1956).

If the five propositions of sociological functionalism and the five propositions of psychoanalysis are juxtaposed, two significant differences between social and personality systems emerge. First, while the social system is disequibrated only from the influence of forces external to itself (by sociological functional proposition 1), the personality system generally loses stability from the influence of forces within itself (by psychoanalytic proposition 3). Second, while norms pilot disequibrated social systems back to equilibrium, the ego performs this guiding function in the personality. Since within the latter system, some internalized social norms reside in the superego (Alexander, 1948) rather than in the ego, the principle of equilibrium motivating the social system need not be compatible with the stability principle motivating the personality system. Hence, there is the possibility of intersystem conflict.

Alexander and Staub (1956) have outlined the dynamics of this intersystem conflict for the special case of neurotic characters.

The psychological situation in the case when the sense of justice is injured, is similar to the case of self-defense; it leads to rebellion and to the breaking through of primitive anti-social drives; one feels oneself threatened by the very authorities whose business it is to uphold the law. . . . the Superego of adults is more or less dependent upon the individual's relation to those in authority; if the latter, by their injustice, destroy the confidence one has in them, the Ego at once loses its dependence on the inner representative of authority--the Superego. (p. 83).

In other words, as a consequence of feeling himself victimized, rather than helped by the social contract, the individual loses confidence in authority figures.

If, however, the norm governing social system equilibrium is compatible with the principle of stability, there will be no intersystem conflict.

It is theorized that the social norm of reciprocity promotes intrapsychic stability. It accomplishes this by assuring the individual that when he transfers interactional authority to another individual, he acquires normative authority (see pp. 1-2). In other words, if the individual perceives a functioning norm of reciprocity, he probably also perceives a functioning social contract because, in both cases, the functional reality of the norm or contract is dependent upon the efficacy of normative authority. Then, the extent to which an individual's sense of justice is unoffended should be related to the extent to which he perceives the reality of a functioning norm of reciprocity. We may formalize this as our first hypothesis.

Hypothesis 1: There is a negative correlation between lack of confidence in authority figures (i.e., the extent to which the individual's sense of justice is offended) and willingness to participate in a reciprocal relationship.

Conveniently, an experimental situation, the "prisoner's dilemma," exists for studying the functioning of reciprocal relationships. Two studies of this situation are of particular relevance to this paper.

The first (Deutsch, 1960) was an attempt to relate California F Scale scores to trust (initiation of a reciprocal relationship by Ego) and trustworthiness (Alter's returning the social system and Ego's personality system to equilibrium and stability by fulfilling the dictates of the norm of reciprocity). There were two major findings of this study. First, since subjects who trusted tended to also be trustworthy while those who did not trust tended to be untrustworthy, the norm of reciprocity seemed to be a valuable construct for explaining the data. In other words, 84 per cent of the subjects fell into categories which could be labeled wholly reciprocal or wholly nonreciprocal. Of the remaining 16 per cent, 9 per cent were trusting but untrustworthy and 7 per cent were suspicious but trustworthy. Wholly reciprocal subjects both by initiating a reciprocal relationship and by fulfilling the dictates of the norm when the other member of their dyad initiated a reciprocal relationship, could be said to be perceiving the reality of a norm of reciprocity. Wholly nonreciprocal subjects did precisely the opposite.

The second finding of interest was that low F scores characterized subjects who behaved according to the norm of reciprocity; relatively high scores characterized subjects who behaved wholly against the norm. If an F score is, in fact, an index of an individual's attitude toward authority, Deutsch's data seem to indicate the worth of further investigating the relationship between authority and reciprocity

relations.

A modified replication of Deutsch's study casts doubt upon the stability of his findings. Wrightsman (1966) found that attitudes toward authority, measured by both the California F Scale and Chein's Anti-Police Attitudes Scale, were not significantly related to game behavior. When trust and trustworthiness were analyzed independently, "none of the attitude and personality measures was successful" in predicting trustworthiness. In predicting trust only Wrightsman's own "Philosophies of Human Nature Scale" succeeded.

Since there does exist doubt about the relationships found by Deutsch, it seems worthwhile to attempt to replicate his study. It also seems worthwhile to attempt to assess the relationship between the California F Scale and lack of confidence in authority figures. In order to formalize the investigation, we may formulate two more hypotheses.

Hypothesis 2: F Scale scores correlate negatively with willingness to participate in a reciprocal relationship.

Hypothesis 3: There exists a significant correlation, either positive or negative, between lack of confidence in authority figures and F Scale scores.

PROCEDURE

Subjects

A sample of 108 introductory psychology students at Michigan State University served as subjects for this study during the spring of 1967. All subjects were nonvolunteer (i.e., subjects were tested in classrooms during scheduled class time; no foreknowledge of the substitution of experimental testing for the scheduled classroom instruction was given to the subjects). Of these subjects, 37 were female. Also, all subjects were students of the experimenter.

Method

Data were collected with a two part, paper-and-pencil test (see Appendix B, p. 50). Part One consisted of a random intermixture of the 29 items of Form 45 of the California F Scale (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1964) and 16 items (Authority Figures Scale) designed by the experimenter to assess the subject's lack of confidence in authority figures (see Table 1). Each item consists of a statement attributing adequate or inadequate role performance to an authority figure. Whether or not a social role actor constituted an authority figure and the exact nature of adequate role performance were decided a priori by the test constructor. The items were scored in such a way

TABLE 1

Authority Figures Scale and Part-Whole Correlations
Between Individual Items and Scores on the Entire Scale

Item	r
*3. The typical father rewards his children for good behavior.	.28
6. Most employers underpay their employees.	.46
8. Most politicians would readily vote against the best interests of their electors.	.38
*10. Policemen are usually fair and just officers of the law.	.48
11. Clergymen are usually more concerned about the contents of the Sunday collection basket than the contents of their parishioners' souls.	.51
12. The typical father does nothing to merit respect from his children.	.53
*13. Parents usually punish their children only when punishment is necessary for the child's welfare.	.42
16. The average policeman misuses his authority.	.64
*19. Most teachers are fair and just graders.	.32
20. Most teachers would rather be popular with their students than satisfy their students' educational needs.	.21
*23. Mothers generally strive more to love than to be loved.	.26
26. When the probability of being discovered is small, the average politician uses taxes primarily for his own benefit.	.49
*32. Most children are well cared for by their mothers.	.50
33. The average courtroom judge is more interested in re-election than in being just.	.42
35. Parents behave as if it were better to punish a child than to love him.	.52
43. Most employers overwork their employees.	.50

* This item was scored in reverse.

that a high score indicated a lack of confidence in authority. Finally, unlike the F Scale, six of the Authority Figures items (3, 10, 13, 19, 23 and 32) were scored in reverse. This reverse scoring was employed in order to control for possible acquiescence response set tendencies.

Part Two consisted of a story about two fictional characters involved in a "prisoner's dilemma" game (see Appendix B, p. 50). The payoff matrix of this game is

		Alter's choices	
		I	II
Ego's choices	I	+500,+500	-1000,+1000
	II	+1000,-1000	-500,-500

Fig. 1. Payoff matrix for a "prisoner's dilemma" game. (The first number in each cell represents Ego's payoff. The second number is Alter's payoff. For Ego choice I is defined as "trust" while choice II is "suspicion". For Alter choice I following choice I by Ego is defined as "trustworthiness" while choice II following choice I by Ego is "untrustworthiness".)

shown in Figure 1. Subjects were asked to predict how the persons playing the game in the story would, in fact, play it. They were then asked how they themselves would play. The latter set of responses was used as an index of the subject's trust and trustworthiness. The former set of answers was used as an index of the subject's reasons for

using whichever strategy he employed. The questions concerning the subjects' own behavior were asked in such a way that the subjects were supposed to imagine themselves playing the game with one of the fictional characters. The questions concerning the behavior of the fictional characters would then yield information about the subjects' perception of the other player's (i.e., the fictional character's) behavior. This information was then used for explanatory purposes. For example, suppose a subject described the fictional characters as trusting and trustworthy. Suppose, moreover, when asked how he himself would play the Ego role, he replied with a trusting response. We could, then, explain his response as based upon either conformity to the behavior of others (i.e., the perceived trusting response) or expectation of having his own trust reciprocated (i.e., the perceived trustworthy response) or both.

The rationale behind this type of game is relatively simple. A payoff matrix is presented to the subject. It is explained to him that the first number in each cell of the matrix refers to Ego's payoff or winnings. The second number in each cell is Alter's payoff. The subject is then asked to assume the role of Ego. As Ego he faces a choice between playing one of two strategies, "collective rationality" or "individual rationality" (Rapoport, 1966). The collectively rational strategy is based upon the realization that if Ego does not trust Alter, the almost in-

evitable result is that both players lose \$500. On the other hand, if Ego trusts Alter and if Alter proves trustworthy, both win \$500. Ego's collectively rational strategy is, then, to trust Alter. Ego's individually rational strategy, however, instructs him not to trust Alter. The rationality of this strategy lies in the possibility of Alter being untrustworthy. If Ego trusts Alter and Alter is, in fact, not trustworthy, Ego will lose \$1000. If he does not trust Alter, the most he can lose is, of course, \$500. As an index of trust and suspicion, then, the "prisoner's dilemma" does not lack a logical basis.

Following the subject's choice of strategy as Ego, he is asked to assume the role of Alter. He is told that the Ego with whom he is playing has selected the trusting strategy. He is then asked to choose between the two Alter alternatives. His choice defines him as either trustworthy or untrustworthy.

Finally, it should be noted that for purposes of generalizing beyond the experimental situation, "prisoner's dilemma" scores are of dubious validity. Apparently, no one has conclusively established the relationship between trust and trustworthiness in game behavior and trust and trustworthiness as characteristics of other types of behavior. Also, in the present experiment no attempt is made to assess the reliability of "prisoner's dilemma" scores.

RESULTS

Although no sex differences were hypothesized, preliminary checks were made on the effect of this variable before combining the data. The mean on the F Scale for females was 3.08; for males, 3.00. Two t tests were used for testing the difference between these means. First, a t for independent measures (McNemar, 1962) was used. The F Scale scores for 37 female subjects constituted one sample while the F Scale scores for 71 male subjects constituted the other sample. The difference between the means of these two samples was not significant ($\underline{t}= .81$; $df=106$; $p > .05$, for two tailed test). Second, a t for correlated measures (McNemar, 1962) was used. Although the means for this test were identical to the means employed in the preceding test, the samples were different. In this case, the female sample consisted of 29 scores--each score being the mean of all responses given to one of the 29 items of the F Scale by the 37 female subjects. The male sample consisted of the same 29 scores, except for this sample the scores were the means of responses given by the 71 males. The correlation between the means per F Scale item for females and males was .94. The difference between the means of these two samples approached, but did not reach, significance ($\underline{t}=1.82$; $df=28$; $.10 > p > .05$, for two tailed test).

On the Authority Figures Scale, the mean for females was 2.67. For males the mean was 2.64. Again, two t tests were used for testing the difference between these means. First, a t for independent measures (McNemar, 1962) was used. The 37 female, Authority Figures Scale scores constituted one sample while the 71 scores for males constituted the other sample. No significant difference between the means of these two samples was found ($\underline{t}=.38$; $df=106$; $p>.05$, for two tailed test). Second, a t for correlated measures (McNemar, 1962) was employed. The means for this test were identical to the means used in the preceding test. However, the female and male samples consisted of 16 scores apiece. Each score was the mean of all responses given to a particular item of the 16 item Authority Figures Scale by the subjects of one sex. The correlation between the means per item for females and the means per item for males was .69. t was not significant ($\underline{t}=.48$; $df=15$; $p>.05$).

In order to determine the relationships between sex and individual items of the Authority Figures Scale, point biserial correlations (Baggaley, 1964) were computed for each item. Only the coefficient for item 19 ("Most teachers are fair and just graders.") was significant ($\underline{r}_{pb}=.27$; $df=107$; $p<.05$) with females showing less confidence in teachers than did males.

Finally, a χ^2 test (Hays, 1963) was used to assess sex differences in trust and trustworthiness. Because of a small expected frequency for the "suspicious and trust-

worthy" category, the four possible categories were reduced to three: (a) reciprocal (subjects who were both trusting and trustworthy), (b) partially reciprocal (subjects who were either trusting but untrustworthy or suspicious but trustworthy), and (c) nonreciprocal (subjects who were both suspicious and untrustworthy). This data is presented in Table 2. The evidence indicates no sex differences ($\chi^2=.666$; $df=2$; $p>.05$).

TABLE 2

χ^2 Test of Sexual Differences
In "Prisoner's Dilemma" Behavior

<u>Sex</u>	<u>Type of Behavior</u>						
	<u>Reciprocal</u>		<u>Partially reciprocal</u>		<u>Nonreciprocal</u>		<u>Total</u>
	<u>Obs.</u>	<u>Exp.</u>	<u>Obs.</u>	<u>Exp.</u>	<u>Obs.</u>	<u>Exp.</u>	
Female	12	10.85	12	11.20	13	14.95	37
Male	19	20.15	20	20.80	30	28.05	69
Total	31	31.00	32	32.00	43	43.00	106

$\chi^2=.666$; $df=2$; $p>.05$ (not significant)

Note.--"Obs." refers to observed frequencies. "Exp." refers to expected or theoretical frequencies.

On the basis of the above evidence, it is assumed that sex differences play no significant role in the data of this study. Only one significant sex difference was found--one item of the 16 item Authority Figures Scale

was found to be significantly related to sex. Yet, since its significance level is .05, the relationship seems attributable to chance (i.e., since the probability of this relationship occurring by chance is 1 in 20, it is not surprising to find one such relationship in a sample of 16 relationships).

Before testing the research hypotheses, internal consistency was determined for the F Scale and the Authority Figures Scale. Cronbach's (1951) "coefficient alpha" was used for this purpose. Since alpha is the mean of all possible split-half estimates of a test's reliability, it is the best index of internal consistency available. Coefficient alpha for the F Scale was found to be .83. For the Authority Figures Scale, alpha was equal to .69.

In order to compare the reliabilities of these two scales, the Spearman-Brown formula (Baggaley, 1964) was used to estimate the reliability of the Authority Figures Scale if it were to be increased to 29 items, the number of items in the F Scale. It was found that alpha would probably increase to .80. It seems, then, that the difference between the reliability of the F Scale and the reliability of the Authority Figures Scale may be exclusively an effect of the different lengths of the two scales.

In order to further explore the internal consistency of the Authority Figures Scale, part-whole correlations were computed. For each item the subjects' responses to

the item were correlated with subjects' scores on the entire scale. These correlations are presented in Table 1 (p. 10). Fifteen of the part-whole correlations were positive and significant at the .01 level. The other correlation was positive and significant at the .05 level. The mean of these correlations was .44. The range of the correlations extended from .21 for item 20 ("Most teachers would rather be popular with their students than satisfy their students' educational needs.") to .64 for item 16 ("The average policeman misuses his authority.").

The first hypothesis of this study states that there is a negative correlation between Authority Figures Scale scores and willingness to participate in a situation governed by the norm of reciprocity. In order to test this a point biserial correlation was calculated, comparing the mean of Authority Figures scores for subjects who were both trusting and trustworthy with the mean scores for subjects who were neither trusting nor trustworthy. The hypothesized negative correlation was found to be +.24 ($df=73$; $p<.05$), a significant positive correlation.

In order to better understand the above correlation, the relations between lack of confidence in authority figures and a variety of variables presented by the game situation were analyzed with biserial correlations. Four biserials were computed--each relating scores on the Authority Figures Scale to a dichotomized game variable. The four game variable dichotomies included trust-suspicion,

trustworthiness--untrustworthiness, perceived trust--perceived suspicion, and perceived trustworthiness--perceived untrustworthiness. Since two of these correlations were virtually zero, let us concentrate only upon the two significant ones. First, it was found that subjects who described themselves as trusting tended to have higher scores on the Authority Figures Scale than did suspicious subjects ($r_b = .31$; $df = 105$; $p < .01$). Since high scores on the Authority Figures Scale indicate lack of confidence in authority, this finding may be restated as: trusting subjects tend to have less confidence in authority figures than do suspicious subjects. The second significant correlation indicates that subjects who perceived the game behavior of fictional characters to be trusting tended to have higher scores on the Authority Figures Scale than did subjects who perceived suspicious behavior ($r_b = .26$; $df = 105$; $p < .01$). In other words, subjects who perceive others as trusting have less confidence in authority figures than do subjects who perceive others to be suspicious.

Hypothesis 2 states that there is a negative correlation between F Scale scores and willingness to participate in a situation governed by the norm of reciprocity. In order to test this, a point biserial was calculated comparing the mean of F Scale scores for subjects who were both trusting and trustworthy with the mean of F Scale scores for subjects who were both suspicious and untrustworthy. The hypothesized negative correlation was found

to be $+ .30$ ($df=73$; $p=.01$). Since this is diametrically opposed to Deutsch's (1960) findings, a more comprehensive comparison between the data of the present study and that obtained by Deutsch was made.

It will be recalled that the norm of reciprocity adequately characterized his data (i.e., most subjects were either both trusting and trustworthy or both suspicious and untrustworthy). Table 3 compares the findings from the two studies in terms of proportions of subjects falling into each of the four categories of game behavior. The findings for suspicious subjects are virtually identical in the two studies. The difference lies entirely in the greater proportion of trusting subjects who are not trustworthy in the present study. Consequently, the construct of a norm of reciprocity fits Deutsch's data slightly better than it does the present data. While 84 per cent of the NYU students were either both suspicious and untrustworthy or both trusting and trustworthy, only 70 per cent of the MSU students fell into these two categories. The difference between these proportions approaches significance ($t=1.69$; $df=159$; $.10 > p > .05$, for two-tailed test).

Deutsch also found that most of his subjects behaved in accordance with their expectancy of the other player's behavior. Although he reported no percentages, he contended that most subjects who trusted expected the other player to be trustworthy; subjects who were suspicious expected the other player to be untrustworthy. In the present study, two

TABLE 3

Proportions of NYU and MSU Subjects Manifesting
Different Types of "Prisoner's Dilemma" Behavior

<u>Type of behavior</u>	<u>Proportion of NYU subjects</u>	<u>Proportion of MSU subjects</u>
Trusting	.527	.518
Suspicious	.473	.481
Trustworthy	.509	.367
Untrustworthy	.491	.632
Trusting and trustworthy	.436	.292
Trusting but untrustworthy	.091	.226
Suspicious but trustworthy	.073	.075
Suspicious and untrustworthy	.400	.406

constructs were available for explaining the data. The first was Deutsch's expectation construct. A subject's behavior could be explained by this construct if either (1) he behaved trustingly and perceived the other player as trustworthy or (2) was suspicious and perceived the other player as untrustworthy. A second construct may be called "conformity". A subject's behavior could be explained with this construct if he played the game in exactly the same way as he perceived the fictional characters' game behavior. There are four possible patterns of responding which may be described as conforming: (1) a subject may be trusting and trustworthy and perceive others as trusting and trustworthy; (2) a subject may be trusting and untrustworthy and perceive others as trusting and untrustworthy; (3) a subject may be suspicious and trustworthy and perceive others as suspicious and trustworthy; and (4) a subject may be suspicious and untrustworthy and perceive others as suspicious and untrustworthy. In the present study, while the expectation construct described the behavior of 62 per cent of the subjects, conformity accounted for the behavior of 65 per cent of the subjects. The difference between these two proportions is considerably more interesting if we consider the chance probabilities of people behaving according to one or the other construct. By chance alone, expectation should describe the behavior of 50 per cent of the subjects. Conformity, on the other hand, should describe the behavior of only 25 per cent of the subjects. It seems, then, that in the present study,

conformity provides a more satisfactory description of the data than does expectation. The two constructs together describe 78 per cent of the data. Since Deutsch reported no percentages of subjects behaving according to either of these two constructs, however, no realistic comparison of the two studies can be made.

Finally, Tables 4 and 5 present a comparison between the relationship of F Scale scores to game behavior for the NYU subjects (used by Deutsch) and the MSU subjects (used in the present study), respectively. It is clear that the findings of the two studies differ. Whereas Deutsch found relatively clearcut relationships between F and game behavior, the present study does not reveal these relationships.

In order to further clarify the nature of the present study's findings, biserial correlations were calculated in an attempt to assess the relationship between F Scale scores and each of four dichotomous game variables. The game variables included trust--suspicion, trustworthiness--untrustworthiness, perceived trust--perceived suspicion, and perceived trustworthiness--perceived untrustworthiness. Three of these correlations were virtually zero. Only the correlation between F Scale scores and perceived trustworthiness--perceived untrustworthiness was significant ($r_b = .30$; $df = 105$; $p < .01$). Verbally, this result states that subjects who perceive others as trustworthy tend to have higher F Scale scores than do subjects who perceive others to be untrustworthy.

TABLE 4

Relationship Between F Scale Scores of NYU Subjects
And Types of "Prisoner's Dilemma" Behavior

<u>Game behavior</u>	<u>F Scale score</u>			<u>Total</u>
	Low (1.2--2.2)	Medium (2.3--3.3)	High (3.4--4.4)	
Trusting and trustworthy	.50	.42	.08	1.00
Suspicious and untrustworthy	.00	.59	.41	1.00
Suspicious but trustworthy	.00	1.00	.00	1.00
Trusting but untrustworthy	.40	.60	.00	1.00

Note.--25 per cent of the subjects had "Low" F Scale scores; 55 per cent had "Medium" scores; and 20 per cent had "High" scores. For the proportions of subjects manifesting each type of game behavior, see Table 3.

TABLE 5

Relationship Between F Scale Scores of MSU Subjects
And Types of "Prisoner's Dilemma" Behavior

<u>Game behavior</u>	<u>F Scale score</u>			<u>Total</u>
	Low (1.0-2.79)	Medium (2.8-3.41)	High (3.45-4.0)	
Trusting and trustworthy	.26	.55	.19	1.00
Suspicious and untrustworthy	.26	.58	.16	1.00
Suspicious but trustworthy	.12	.63	.25	1.00
Trusting but untrustworthy	.29	.46	.25	1.00

Note.--26 per cent of the subjects had "Low" F Scale scores; 54 per cent had "Medium" scores; and 20 per cent had "High" scores. For the proportions of subjects manifesting each type of game behavior, see Table 3.

From the above we may conclude that Deutsch's results were not successfully replicated. The findings of the present study indicate only that there seems to be a positive relationship between F Scale scores and an individual's willingness to participate in a reciprocal relationship and a positive relationship between F and the tendency to perceive others as trustworthy.

The third hypothesis states that there is a relationship between F Scale scores and lack of confidence in authority figures. The obtained correlation between the F Scale and the Authority Figures Scale is .04--clearly not significant.

Further investigation of the third hypothesis seemed in order. It will be remembered that the Authority Figures Scale consisted of two types of items--10 items scored in the same way as all F Scale items were scored and 6 items scored in reverse. It was feasible, therefore, to divide each subject's Authority Figures score into two separate scores--one based on the 10 positively scored items and the other based on the 6 reverse scored items. Two correlations were then computed. Between F and the positively scored Authority Figures subscale, the correlation was found to be +.14 (df=107; not significant). Between F and the reverse scored Authority Figures subscale, the correlation was -.26 (df=107; $p < .01$).

DISCUSSION

The following commentary on the research just presented is so lengthy that a brief introduction may be of assistance to the reader. It will be noted that the main focus of the discussion is the meaning of California F Scale scores. The criterion for selecting this focus was twofold. First, two of the three hypotheses tested were based upon the assumption that F Scale scores are an index of attitudes toward authority. However, since the F Scale literature casts doubt upon this assumption (e.g., Peabody, 1966), a reformulation of the meaning of F Scale scores seems in order. Second, since the other two sources of data (i.e., Authority Figures Scale and paper-and-pencil form of the "prisoner's dilemma") were constructed for and used only in the present study, little is known about their value. The Authority Figures Scale is, of course, of a conventional type of Likert attitude scale--consisting of repeated measures of attitude toward an object. Hence, its value is probably greater than the value of the rather unconventional "prisoner's dilemma" test, which lacks repeated measures. Yet, in neither of my own tests do I place a great deal of confidence. Consequently, I plan to devote relatively little space to the discussion of variables measured by these instruments. Only when I have collected

data based on different estimates of these variables will I feel competent to adequately discuss the relationships between these variables.

The following, then, focusses on the question of what the California F Scale measures. My answer to this question is based upon a theory of attitudes which is a generalization from two sources. First, preliminary to the research reported herein, I carried out several pilot studies. Two consisted of only four subjects each. The small size of these samples was particularly conducive to discussion, subsequent to the testing. In the process of these discussions, it became apparent that my subjects considered many of the F Scale statements to be "screwy" and nonsensical. This was not true of the Authority Figures Scale. Often, subjects spontaneously said, "It was hard to know what you were looking for," or something of that sort. In addition to these discussions, the other source for the theory was myself--attempting to answer the question, what would I have done if I were a subject in this experiment?

The California F Scale--A detour into theory

I found the most surprising result of this study to be the virtually zero correlation between the F Scale scores and lack of confidence in authority figures. To some extent, this may be explained as a result of response bias. The correlation between F and the reverse scored Authority Figures subscale was significantly negative. Yet, the magnitude of this correlation is so small that response bias

seems to provide only part of the answer.

There is one study (Rudin, 1961), however, which helps to clarify the problem. Rudin constructed a true--false scale much like the Authority Figures Scale. He designed this scale to measure the subjects' acceptance of rational authority--as defined by Erich Fromm. Assuming that the F Scale measures attitude toward irrational authority, he hypothesized that the two scales would not be related. Between the two scales he obtained a correlation of .04.

Attempting to explain my own findings, I have elected to disagree with Rudin's assumption that the F Scale directly assesses attitude toward irrational authority. It may be true that response to an item like, "Some day it will probably be shown that astrology can explain a lot of things," correlates with attitude toward irrational authority. Yet, is this what the item per se assesses? Restricting attention to the item's content, it seems that a response to it is simply an index of an individual's attitude toward the future of astrology. Content analyses of other F Scale items reveals the foci of these items to be exotic objects like people as germ carriers, the ethics of childhood, earthquakes and floods as panaceas for social problems, et cetera.

In addition to the objects contained in these statements, there is at least one other salient characteristic. If we view an attitude statement as an expressed relationship between objects, then certainly the nature of the

relationship is also salient. In F Scale items this relationship is generally one of "oughtness" or futurity.

Subjects are faced with the task of agreeing or disagreeing with statements of the type, "A will be B"--or more specifically, "Astrology will be a powerful explanatory tool."

Let us generalize the above considerations to a theory. This theory is based on the premise that an attitude statement is relevant to a subject if and only if both the objects and the relationships are relevant. Before proceeding, let me attempt to clarify what I mean by a "relevant" statement. Heuristically, a statement is relevant to a subject if that subject can use the statement as a testable hypothesis. The data for testing the hypothesis is an element of the subject's set of retrievable experiences. For example, Rudin's scale has an item which reads, "Most policemen are fair and honest." If this item is relevant to a subject, he may recall one or more experiences in which a policeman did or did not behave fairly or honestly or both. His response, then, will be based upon the retrieved experiences. On the other hand, there are at least two types of statement which are not simply testable hypotheses. The first is an hypothesis which is theoretically testable but for which a given subject has no data. For example, "War and Peace is a long novel," may be untestable for Ezra McCoy in the back hills of Tennessee. Since in his memory store, there is no cell labeled, War and Peace, the statement is irrelevant to Ezra. The second type of irrelevant statement is one which

is not a hypothesis at all. Instead, it is a description of a state of affairs which ought to or will exist but which presently does not. Let us label these three types of attitude statement Type A, Type B and Type C, respectively. In terms of the preceding, it seems that the Authority Figures Scale is composed primarily of Type A statements while the F Scale consists primarily of Type C statements.

As Type C statements, then, F Scale items are defined as irrelevant to a subject. The question now is, how can irrelevant statements be made relevant to a subject? That they are, indeed, made relevant may be inferred from the fact that subjects respond to the items. In accord with our theory, let us say that these Type C statements are, in some way, transformed to Type A statements. When a subject is unable to make such a transformation, he will either not respond at all or, if a Likert scale with a neutral category is used, he will respond with neutrality.

Up to this point we have merely said that since F Scale items may be described as Type C statements, subjects respond to them only after they transform them to Type A statements. We now face the problem of analyzing this transformation process. Before doing so, however, let me give the reader an idea of the direction in which this argument is tending. In what follows, I intend to show that it is reasonable to contend that F Scale items are transformed to Type A statements by prefacing each item with the phrase, "The experimenter believes" From

this point, I shall attempt to show that it is also reasonable to interpret F Scale scores as indices of "contact with reality."

To begin, then, there seem to be at least three ways in which a Type C statement may be transformed to Type A: translation, ideational referral, and authoritarian referral. Since I intend to assume that the subjects in both my own experiment and Deutsch's (1960) experiment used authoritarian referral, let me merely define the first two transformation techniques. By "translation" I mean the process of restating the contents of an item to eliminate the "will" or "ought" or "should be" and replace it with an "is". For example, let us assume the F Scale item, "Every person should have complete faith in some supernatural power whose decisions he obeys without question," to be Type C. As Type A it might read, "Every person has complete faith in some supernatural power whose decisions he obeys without question." This statement could then be tested with the subject's retrievable experiences.

By "ideational referral" I mean the process of testing a statement against some other statements which the subject uses as shorthand summaries of many experiences. This process is analogous to the use of Aristotelian syllogisms. Suppose an individual's experience leads him to conclude that people desire happiness. Suppose, moreover, that the people he knows who believe in an authoritarian God are unhappy. The subject could then institute a syllogism.

The major and minor premises would be the two experientially based statements just mentioned. The F Scale item on belief in an authoritarian God would constitute the conclusion to be tested. The subject in question would probably conclude that the F Scale item is incompatible with his experience and reject it as an hypothesized conclusion.

In a Comtean sense, if translation is the positivistic technique for transformation and ideational referral is the metaphysical technique, authoritarian referral is the theological approach. Authoritarian referral may also be viewed as a specific type of ideational referral. It is based upon the subject's idea that if he wishes to succeed at the task of filling out an attitude questionnaire, he should refer each item to that set of ideas which he thinks characterizes the thinking of some person other than himself. For example, he might restate the F Scale item discussed in the preceding two paragraphs as, "Daddy Grace believes that every person should have complete faith in some supernatural power whose decisions he obeys without question." In interpreting the findings of the present study and the findings of Deutsch's study, I am assuming that this technique of authoritarian referral was the predominant technique used by the subjects. I shall also assume that the "authority" to whom the items were referred was the experimenter.

In order to justify this last assumption, let us direct attention to the possible choices of authority.

These choices may be divided into persons within the experimental situation and persons outside this situation. Since the persons outside the situation are innumerable and virtually impossible to specify, let us focus attention upon those choices who exist within the experimental situation proper. There are at least three such candidates for the role of "authority"--the individual subject's ideal self, the whole group of subjects taking the test, and the experimenter. It is my own belief that any one of these three would constitute a reasonable choice.

Suppose we first choose the individual's self as the "authority". Then a subject's responses will reflect what he thinks he ought to say--but "ought to say" to whom? Since only two people have access to the responses, the subject is deceiving either himself, the experimenter, or both. If he is deceiving the experimenter, his responses will probably reflect his perception of the experimenter's own responses to the F Scale items. In this case, the experimenter becomes the "authority". Suppose, on the other hand, we theorize that the subject is not concerned with the experimenter's evaluation of his responses. As I see it, such a contention leads us into a position which is extremely difficult to maintain. In short, how do we explain the "double agreement" phenomenon (McBride & Moran, 1967; Peabody, 1966)--the fact that an ominously large proportion of subjects who agree to any specific F Scale item also agree to a reversal of that item? A reasonable reply

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. The text notes that without reliable records, it is difficult to track progress, identify trends, and make informed decisions.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It mentions the use of surveys, interviews, and focus groups to gather qualitative information, as well as statistical software and data visualization techniques for quantitative analysis. The importance of ensuring the reliability and validity of the data is stressed throughout this section.

3. The third part of the document provides a detailed overview of the findings from the study. It presents a series of tables and graphs that illustrate the key results, including trends over time and comparisons between different groups. The text explains the significance of these findings and how they relate to the research objectives.

4. The fourth part of the document discusses the implications of the findings for practice and policy. It highlights the need for further research in certain areas and offers recommendations for how the results can be applied to improve outcomes. The text also addresses potential limitations of the study and suggests ways to address them in future work.

5. The final part of the document is a conclusion that summarizes the main points of the study. It reiterates the importance of the research and the value of the findings. The text ends with a statement of appreciation for the support and assistance provided by the research team and funding sources.

would be that a subject double agrees because his ideal self tells him to be an agreeable fellow. It seems more reasonable, however, to contend that double agreement is based upon a subject's belief that since the experimenter is using the test, the experimenter himself agrees with the items. To anyone familiar with this type of research, such a belief seems ridiculous; yet, we must remember that subjects who agree with F Scale items tend to be in lower social classes, have little education, have low IQ scores, et cetera--in short, are not "socially sophisticated" subjects (Christie & Cook, 1958). Such an interpretation is also in accord with Peabody's (1966) contention that double agreement is behavior characteristic of relatively "simple minded" subjects.

Finally, contending that double agreement is not founded upon a subject's ideal self instructing him to be agreeable is also based upon the absence of a double disagreement phenomenon. Why are there no "scientific" ideal selves which instruct subjects to doubt the validity of any statement and consequently disagree with both original and reversed items? Defining the experimenter as the subjects' authority, however, we may suggest that double disagreement has not been found because subjects who score low on F are relatively socially sophisticated. This enables these low F scorers to know that psychological tests do not necessarily contain statements of the experimenter's own beliefs or disbeliefs.

Let us now suppose that subjects are responding in terms of the whole group of subjects' beliefs. This is, again, a fairly reasonable interpretation. Yet, since the questionnaires were seen only by the experimenter and the subject himself, it seems more plausible to use the ideal self or experimenter as the choice of "authority".

From my perspective, then, it seems most reasonable to select the experimenter as the authority to whom the items were referred. Having sought empirical evidence for this contention, I must admit that no such evidence seems to exist. For the moment, then, let us assume the validity of the contention--hoping that someday empirical investigations (perhaps through studying the relationship between different types of attitude scales and the magnitude of experimenter effect) will substantiate our claim.

To summarize, we have said four things. First, F Scale items are Type C statements. Second, since they are Type C, subjects transform them to Type A. Third, the technique used for transforming the statements was authoritarian referral. Finally, the authority to whom the items were referred was the experimenter.

We are now in a position to propose an answer to the question of what the California F Scale measures. We have hypothesized that the subjects prefaced each F Scale item with the phrase, "The experimenter believes . . ." As far as the subject himself is concerned, he is testing a hypothesis which phrased as a question will read, "Does the

experimenter believe" Let us join the subject in asking this question. Yet, in this case, we shall provide an answer which is independent of the answer given by the subjects. Our answer will be based upon introspection and a reasonable guess about Deutsch and his associates. The answer based upon introspection is that the experimenter is a very low F scorer. Our guess is that the same is true of Deutsch and company. Having independently answered the same question asked and answered by the subjects, we are in an interesting situation. We now have two sets of answers to the same question. If we assume that our own answer is correct--that the researchers in question are extremely low F scorers--we are in possession of a criterion against which the subjects' F Scale scores may be validated. In short, the magnitude of a subject's score may be interpreted as a deviation from fact. On the basis of the preceding, I am proposing that the magnitude of a subject's F Scale score is an index of his awareness of his immediate environment.

In a sense, this conclusion is similar to Christie and Cook's (1958) belief that F Scale scores are an index of social sophistication. The answer which I am proposing, however, applies to a different realm of data. Given several samples from populations with different socio-cultural milieux, the mean F for each sample may allow us to classify samples as more or less socially sophisticated. Yet, given any one sample the F for each individual seems to be more an index of the subject's contact with reality

than an index of social sophistication. Borrowing analysis of variance terminology, social sophistication is a source of between groups variance while contact with reality is a source of within groups variance.

Before proceeding, let me attempt to clarify what I mean by "contact with reality". In order to be as precise as possible, it is necessary to first define "reality" and, subsequently, specify the process by which an human being "contacts" this reality. Neither of these tasks are performed with facility--especially when the performer is neither a metaphysicist nor an epistemologist. Noting these limitations, we may make an initial distinction between self and nonself. By "reality" I mean that portion of the nonself which exists independently of the substance of self. Essentially, this is merely a restatement of classical realism--that self and nonself or I and it or I and Thou are metaphysically distinct. By "contacting" this reality I mean the process whereby a self relates to the nonself. Any specific relationship may be defined along a continuum ranging from correct to incorrect. For example, show a subject a horse. Then ask the subject to state the word conventionally assigned to the object. If he says "horse", he is correct. If he says "cow", he is incorrect. He is even more incorrect, however, if he replies "my father".

I am suggesting, then, that for a given sample of subjects--in our case, college freshmen--F scores reflect contact with reality. This means that when a subject

refers an item on the F Scale to the experimenter, a correct response, in general, is "strongly disagree" or "disagree". Applying this reasoning to the entire scale, we may conclude that within any sample which is homogeneously socially sophisticated, the lower a subject's F Scale score, the better is his contact with reality.

The strong assumption being made, of course, is that a sample of college freshmen is homogeneously socially sophisticated. However, since all subjects in the present experiment had spent eight weeks as students of the experimenter, it seems that the relevant aspect of the subjects' milieu (i.e., the experimenter's behavior) was the same for all subjects. Hence, the assumption of homogeneous social sophistication seems reasonable. The differences between subjects may be attributed, then, to individual differences in perceiving "reality" rather than to differences in the "reality" itself.

The third hypothesis

Let us now move from the realm of theory back to the findings of this study. We may recall that the obtained correlation between F and lack of confidence in authority was effectively zero. We also saw that to a slight extent, response bias contributed to this finding. Above and beyond this bias effect, however, let us reconsider our third hypothesis in light of our reformulation of the meaning of F. It may be noted that we have eliminated the assumption--that F measures attitude toward authority--underlying the

earlier hypothesis. Let us merely note, then, that if F does assess an individual's contact with reality, for our subjects contact with reality seems to be unrelated to lack of confidence in authority.

The second hypothesis

Relevant to the F Scale findings, we know that there is a positive relationship between F and the tendency to perceive trustworthiness. We also know that reciprocity as a genuinely functioning norm is used more by high F scorers than by low F scorers. In order to explain these findings, let us again use our new definition of F. On the basis of this, it can be hypothesized that if the majority of persons in an environment are trustworthy, then low F scorers in that environment should evidence a greater tendency to perceive that trustworthiness than do high F scorers. On the other hand, if most people in an environment are untrustworthy, low F scorers should tend to perceive untrustworthiness. Consequently, if we define the environment of a "typical" MSU introductory psychology student as other MSU introductory psychology students, we need an estimate of the trustworthiness of these students. If we use our own data on game behavior, we can estimate that approximately 63 per cent of these MSU students are untrustworthy while only 37 per cent are trustworthy (see Table 3, p. 21). Hence, we should expect low F scorers to evidence a tendency to perceive untrustworthiness--which is precisely what we found.

In attempting to explain the second finding, we encounter an interesting contradiction. While the data for MSU subjects indicate that the norm of reciprocity is used less by low F scorers than by high F scorers, Deutsch's data for NYU students indicate that the norm of reciprocity is used relatively more by low F scorers. An initial resolution of this contradiction is provided by Wrightsman's (1966) finding of no relationship between either trusting and F or trustworthiness and F. Hence, it seems that F and game behavior is certainly not stable across samples.

Let us, however, attempt to be more specific. As a result of our redefinition of the meaning of F, we can hypothesize that low F scorers will behave according to a norm of reciprocity only to the extent that reciprocity is a functioning norm in the subjects' environment. On the basis of the empirical evidence, this last statement would lead us to suspect that the cultural environment of the MSU subjects is less reciprocal than is the environment of NYU subjects. Is this reasonable? If we look at, perhaps, a major difference between these two environments, it does seem a reasonable contention. We may observe that MSU subjects (primarily freshmen) exist in a world relatively new to them. They are in a process of forming new friendships away from the probably stable atmosphere of family and high school friends. NYU, on the other hand, is an urban university. Certainly, NYU subjects may also be in a process of forming new friendships, but it seems likely that this

process occurs in a more stable atmosphere created by the presence of family and precollege friendships. Since stability within a social system implies the existence of an adequately functioning norm of reciprocity (Gouldner, 1963), the contradictory findings for MSU and NYU may be only empirically contradictory. Theoretically, both sets of data may support the same assumptions about the meaning of F and the relationship between reciprocity and social system stability.

The contentions of the preceding paragraph are, of course, guesses. Consequently, let us return to the haven of the data available to us. If our guessing has been accurate, our data should show a greater prevalence of reciprocal behavior among NYU subjects than among MSU subjects. Table 3 (p. 21) indicates that while 44 per cent of the NYU sample behaved reciprocally, only 29 per cent of the MSU sample did so. We seem, therefore, to be in a position of attributing the differences between the two studies under consideration to the differences in the environments in which the subjects of those studies exist.

The first hypothesis

Relevant to the relationship between game playing behavior and Authority Figures scores, there are three statistically significant correlations. First, it seems that subjects who behave according to a norm of reciprocity have less confidence in authority figures than do subjects who are nonreciprocal. Second, subjects who exhibit trusting

behavior tend to have less confidence in authority figures than do suspicious subjects. Third, subjects who perceive others as trusting tend to have less confidence in authority than do subjects who perceive others as suspicious. Two other findings which are relevant to the following discussion are (1) that subjects who trusted tended to perceive others as trusting and subjects who were suspicious tended to perceive others as suspicious. Also, (2) subjects tended to be trusting if others were perceived as trustworthy but to be suspicious if others were perceived as untrustworthy.

Before presenting a model of these findings, it is necessary to justify the dismissal of one finding. I have decided that the point biserial correlation between reciprocity and Authority Figures scores is deceptive. Although statistically significant its significance is exclusively a result of computing the statistic on a subsample of the entire sample. The deceptiveness of this statistic becomes apparent if we look at the mean Authority Figures scores for each category of game playing behavior. The means for the two possible trusting categories (i.e., trusting and trustworthy or trusting and untrustworthy) are virtually identical--2.77 and 2.76, respectively. For the suspicious categories, the untrustworthy subjects have a higher mean (2.53) than do the trustworthy (2.38). In other words, it seems that Authority Figures correlates with reciprocity only because trust correlates with Authority Figures.

Having dismissed this point biserial, we may build a

relatively simple model of trusting behavior. The basic premise of this model is that the probability of a subject exhibiting trust is a function of three variables: perception of past, perception of present and perception of future. Corresponding to each of these perceptions are three empirical measures. To the perception of past, corresponds a subject's lack of confidence in authority. To the perception of present, corresponds perception of others as trusting or suspicious. Finally, corresponding to perception of future is Deutsch's expectancy index--the perception of others as trustworthy or untrustworthy. A formal statement of the nature of each of these as they relate to game behavior would be premature. Yet, from the data of this study, it does appear that each plays a significant role.

Conclusion

It seems tenable to conclude that the variables discussed at the beginning of this paper are valuable tools for investigating game behavior. The hypothesized relationships between these variables, however, seem to be untenable.

There is one other result of this study which seems to merit discussion. This result is the virtual absence of sex differences. The nonsignificant sex difference in game behavior seems to be a typical finding for "prisoner's dilemma" studies similar to the one presented in this paper (Gallo & McClintock, 1965; Kanouse & Wiest, 1967; Rapoport & Chammah, 1965). The findings for the Authority Figures and F Scales, on the other hand, may be dependent upon the

specific sample of subjects.

Finally, it should be noted that the explanation suggested for the findings of this study is only one of many plausible explanations. For example, it is possible that F does not measure "contact with reality". In selecting this interpretation, I attempted to steer a middle course between the feuding "authoritarian" versus "response set" researchers--a course which seemed reasonable and consistent with both my own data and selected data of other researchers. Other points of departure for divergent explanations surely ought to include the questionable validity of the Authority Figures Scale and possible differences between my paper-and-pencil form of the "prisoner's dilemma" and Deutsch's "behavioral" form. In short, the validity of my explanation is heavily dependent upon the validity of a large number of assumptions. The fruitfulness of this explanation, then, must await the collection of data for testing these assumptions.

REFERENCES

- Adorno, T. W., Frenkel-Brunswik, Else, Levinson, D. J., & Sanford, R. N. The authoritarian personality. Science Editions. New York: John Wiley & Sons, Inc., 1964.
- Alexander, F. Fundamentals of psychoanalysis. New York: W. W. Norton & Company, Inc., 1948.
- Alexander, F., & Staub, H. The criminal, the judge, and the public: A psychological analysis, trans. G. Zilboorg. Glencoe, Illinois: The Free Press, 1956.
- Baggaley, A. R. Intermediate correlational methods. New York: John Wiley & Sons, Inc., 1964.
- Christie, R., & Cook, P. A guide to published literature relating to the authoritarian personality through 1956. J. Psychol., 1958, 45, 171-199.
- Cronbach, L. J. Coefficient alpha and the internal structure of tests. Psychometrika, 1951, 16, 297-334.
- Deutsch, M. Trust, trustworthiness, and the F Scale. J. abnorm. soc. Psychol., 1960, 61, 138-140.
- Gallo, P. S., & McClintock, C. G. Cooperative and competitive behavior in mixed-motive games. J. Conflict Resolution, 1965, 9, 68-78.
- Gouldner, A. W. The norm of reciprocity: A preliminary statement. In E. P. Hollander & R. G. Hunt (Eds.), Current perspectives in social psychology. New York: Oxford University Press, 1963. Pp. 269-280.
- Hays, W. L. Statistics for psychologists. New York: Holt, Rinehart and Winston, 1963.
- Kanouse, D. E., & Wiest, W. M. Some factors affecting choice in the Prisoner's Dilemma. J. Conflict Resolution, 1967, 11, 206-213.
- McBride, L., & Moran, G. Double agreement as a function of item ambiguity and susceptibility to demand implications of the psychological situation. J. Pers. soc. Psychol., 1967, 6, 115-118.

- McNemar, Q. Psychological statistics. (3rd ed.) New York: John Wiley & Sons, Inc., 1962.
- Martindale, D. The nature and types of sociological theory. Boston: Houghton Mifflin Company, 1960.
- Mills, C. W. The sociological imagination. New York: Grove Press, Inc., 1961.
- Parsons, T. The social system. New York: The Free Press, 1951. (1964)
- Parsons, T. Social structure and personality. Glencoe, Illinois: The Free Press, 1964.
- Peabody, D. Authoritarianism scales and response bias. Psych. Bull., 1966, 65, 11-23.
- Rapoport, A. Two person game theory: The essential ideas. Ann Arbor Science Paperbacks. Ann Arbor, Michigan: The University of Michigan Press, 1966.
- Rapoport, A., & Chammah, A. M. Sex differences in factors contributing to the level of cooperation in the Prisoner's Dilemma game. J. Pers. soc. Psychol., 1965, 2, 831-838.
- Rudin, S. A. The relationship between rational and irrational authoritarianism. J. Psychol., 1961, 52, 179-183.
- Wrightsman, L. S. Personality and attitudinal correlates of trusting and trustworthy behaviors in a two-person game. J. Pers. soc. Psychol., 1966, 4, 328-332.

APPENDIX A: RECIPROCITY AND AUTHORITY

The following discussion may be substituted for the "Introduction" to the preceding paper.

In this study three hypotheses were formulated.

Hypothesis 1: There exists a negative correlation between lack of confidence in authority figures and willingness to participate in a reciprocal relationship.

Hypothesis 2: There exists a negative correlation between California F Scale scores and willingness to participate in a reciprocal relationship.

Hypothesis 3: There exists a correlation (either positive or negative) between California F Scale scores and lack of confidence in authority figures.

The rationale for these hypotheses is both theoretical and empirical. Hypothesis 1 is based upon the assumption that if an individual lacks confidence in authority figures, he does so because his past experience in authority relationships has led him to conclude that he gains no gratification and perhaps loses gratification by entering such relationships. The first hypothesis states then that if an individual has been unsuccessful in obtaining gratification in authority relationships, through a generalization process he will avoid participating in any relationship similar to an authority relationship. The similarity between authority

and reciprocal relationships is twofold. First, the individual who initiates either relationship places control of the social situation in the hands of another member of the group. Second, the initiator of the relationship has control over the other member only if a social norm of "fair play" is functional. In an authority relationship this norm may be called a "social contract". In a reciprocal relationship, the norm may be called a "norm of reciprocity".

The second hypothesis is based upon findings in a study by Deutsch (1960).

The third hypothesis is based upon the supposed validity criteria of the California F Scale and the scale (constructed for the present study) measuring lack of confidence in authority figures. Theoretically, this is a crude hypothesis. It simply states that if both of these scales measure attitudes toward authority, they should be related to one another.

APPENDIX B: QUESTIONNAIRES

PUBLIC OPINION QUESTIONNAIRE

The following statements refer to opinions regarding a number of topics about which some people agree and others disagree. Please mark each statement in the left hand margin according to your agreement or disagreement, as follows:

+1: Tend to agree	-1: Tend to disagree
+2: Agree	-2: Disagree
+3: Strongly agree	-3: Strongly disagree

- _____ 1. Some day it will probably be shown that astrology can explain a lot of things.
- _____ 2. Nowadays when so many different kinds of people move around and mix together so much, a person has to protect himself especially carefully against catching an infection or disease from them.
- _____ 3. The typical father rewards his children for good behavior.
- _____ 4. Obedience and respect for authority are the most important virtues children should learn.
- _____ 5. Every person should have complete faith in some supernatural power whose decisions he obeys without question.
- _____ 6. Most employers underpay their employees.
- _____ 7. No weakness or difficulty can hold us back if we have enough will power.
- _____ 8. Most politicians would readily vote against the best interests of their electors.
- _____ 9. Nobody ever learned anything really important except through suffering.
- _____ 10. Policemen are usually fair and just officers of the law.

- ____11. Clergymen are usually more concerned about the contents of the Sunday collection basket than the contents of their parishioners' souls.
- ____12. The typical father does nothing to merit respect from his children.
- ____13. Parents usually punish their children only when punishment is necessary for the child's welfare.
- ____14. What the youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country.
- ____15. Sex crimes, such as rape and attacks on children, deserve more than mere imprisonment; such criminals ought to be publicly whipped, or worse.
- ____16. The average policeman misuses his authority.
- ____17. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.
- ____18. There is hardly anything lower than a person who does not feel a great love, gratitude, and respect for his parents.
- ____19. Most teachers are fair and just graders.
- ____20. Most teachers would rather be popular with their students than satisfy their students' educational needs.
- ____21. Homosexuals are hardly better than criminals and ought to be severely punished.
- ____22. People can be divided into two distinct classes: the weak and the strong.
- ____23. Mothers generally strive more to love than to be loved.
- ____24. When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things.
- ____25. The wild sex life of the old Greeks and Romans was tame compared to some of the goings-on in this country, even in places where people might least expect it.

- _____26. When the probability of being discovered is small, the average politician uses taxes primarily for his own benefit.
- _____27. Young people sometimes get rebellious ideas, but as they grow up they ought to get over them and settle down.
- _____28. Science has its place, but there are many important things that can never possibly be understood by the human mind.
- _____29. Most people don't realize how much our lives are controlled by plots hatched in secret places.
- _____30. Some people are born with an urge to jump from high places.
- _____31. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked and feeble-minded people.
- _____32. Most children are well cared for by their mothers.
- _____33. The average courtroom judge is more interested in re-election than in being just.
- _____34. Nowadays more and more people are prying into matters that should remain personal and private.
- _____35. Parents behave as if it were better to punish a child than to love him.
- _____36. If people would talk less and work more, everybody would be better off.
- _____37. No sane, normal, decent person could ever think of hurting a close friend or relative.
- _____38. The business man and the manufacturer are much more important to society than the artist and the professor.
- _____39. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.
- _____40. Wars and social troubles may someday be ended by an earthquake or flood that will destroy the whole world.

- _____41. Human nature being what it is, there will always be war and conflict.
- _____42. It is best to use some prewar authorities in Germany to keep order and prevent chaos.
- _____43. Most employers overwork their employees.
- _____44. An insult to our honor should always be punished.
- _____45. Familiarity breeds contempt.

SOCIAL INSIGHT TEST

The following is a test of your ability to predict human behavior. Read the following story carefully and answer the questions at the end to the best of your ability.

Three wealthy young men, Tom, Dick and Harry, had just been introduced to one another. Having discovered during the course of their conversation that they shared an interest in gambling, they decided to participate in a game of chance about which Tom had heard from a friend.

The game is designed for three people, Player I, Player II and a Spectator. By drawing straws it was determined that Tom would be Player I, Dick would be Player II and Harry would be the Spectator. Tom as Player I made the first play. Tom had in his possession a key which would unlock a box in Dick's possession. The first play consisted of Tom either giving Dick the key or not giving Dick the key.

Dick as Player II made the second play. Dick possessed a glass of water. The second play consisted of Dick either giving or not giving Tom the glass of water. The game then ended.

In other words, four possible events could have occurred:

- (1) Tom gave Dick the key and Dick gave Tom the glass of water.
- (2) Tom gave Dick the key but Dick did not give Tom the glass of water.
- (3) Tom did not give Dick the key but Dick did give Tom the glass of water.
- (4) Tom did not give Dick the key and Dick did not give Tom the glass of water.

In order to make the game interesting, a system of payoffs was devised. If event (1) occurred Harry payed Tom and Dick \$500 apiece. If event (2) occurred Tom payed Dick \$1000. If event (3) occurred Dick payed Tom \$1000. If event (4) occurred, Tom payed Harry \$500 and Dick payed Harry \$500.

This may be schematically represented as follows:

EVENT	WINS AND LOSSES OF PLAYERS		
	Tom	Dick	Harry
(1) Tom gave Dick the key; Dick gave Tom the water.	Win \$500	Win \$500	Lose \$1000
(2) Tom gave Dick the key; Dick did not give Tom the water	Lose \$1000	Win \$1000	Neither win nor lose
(3) Tom did not give Dick the key; Dick gave Tom the water.	Win \$1000	Lose \$1000	Neither win nor lose
(4) Tom did not give Dick the key; Dick did not give Tom the water	Lose \$500	Lose \$500	Win \$1000

Question #1: Tom made the first play. What did he probably do? Circle either (a) or (b).

- (a) Tom gave Dick the key.
- (b) Tom did not give Dick the key.

Question #2: If Tom gave Dick the key, what did Dick do? Circle either (a) or (b).

- (a) Dick gave Tom the glass of water.
- (b) Dick did not give Tom the glass of water.

Question #3: If Tom did not give Dick the key, what did Dick do? Circle either (a) or (b).

- (a) Dick gave Tom the glass of water.
- (b) Dick did not give Tom the glass of water.

Question #4: If you were Tom what would you do? Circle either (a) or (b).

- (a) I would give Dick the key.
- (b) I would not give Dick the key.

Question #5: If you were Dick and Tom had given you the key, what would you do? Circle either (a) or (b).

- (a) I would give Tom the glass of water.
- (b) I would not give Tom the glass of water.

Question #6: If you were Dick and Tom had not given you the key, what would you do? Circle either (a) or (b).

- (a) I would give Tom the glass of water.
- (b) I would not give Tom the glass of water.

APR - 4 1968

MICHIGAN STATE UNIV. LIBRARIES



31293107580312