SOME PERSONALITY AND BEHAVIORAL
CORRELATES OF CONFORMITY

DISSEMINATION
Presented in Partial Fulfillment of the Requirements for
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By

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* * * * *

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CHAPTER I

INTRODUCTION

In 1951, S. E. Asch published his pioneering and now classic experiments on the modification and distortion of judgment as a function of group pressure (3). The experimental situation used by Asch was one in which a naive subject (S) who was instructed to make comparisons in regard to the length of lines found himself opposed by a unanimous majority of other Ss who were actually preinstructed accomplices of the experimenter. These studies demonstrated that some subjects will yield to the publicly expressed judgment of a majority even when that judgment is obviously contrary to objective fact; and that there are very marked individual differences in the amount of conformity, ranging from complete independence to complete yielding. The unequivocal and striking nature of Asch's findings, coming as they did at a time when psychologists and sociologists were inveighing against the "stultifying" effects of social conformity (16,21) ushered in a continuing period of intensive research on the nature of conformity behavior.

The conformity behavior manifested in the "Asch-type" situation, and under consideration in the present research is different from the "J-curve" phenomenon described by
Allport (2) and considered by him to be a modal or culturally sanctioned behavior. On the contrary, the conforming behavior exhibited in the typical "Asch-type" situation is characteristic of only 25-40 percent of the Ss (4).

Conformity is here defined as the public avowal of a belief or judgment which coincides with a majority belief or judgment in the absence of any logically adequate grounds for doing so.

The larger part of the research that followed the publication of Asch's monograph investigated the situational determinants of conformity behavior. It was demonstrated that a unanimous majority of three can produce as much pressure to conform as a unanimous majority of 11 (4); that having the Ss remain anonymous rather than publicly announce their judgments results in a significant decrease in conformity (31); that the effect appears over a wide range of stimuli (40); that the duration of participation in the group is not related to the amount of conformity (25); that an experimenter who supports the incorrect group judgment can significantly increase the pressure to conform (13); that being able to identify the source of the judgments is accompanied by increased social influence (25); that the difficulty of the task is related to the amount of conformity (12); and that a high status person group exerts greater pressure than a low status person (27). Although it is widely accepted (5,13) that tendencies toward conformity and
independence are general or pervasive personality traits characterizing an individual's behavior in consistent ways across a variety of situations, and that personality characteristics interact with situational variables to produce conforming behavior, little is actually known about the specific personality factors that make for yielding or resistance to group pressure. In addition, very little data is available in regard to how conformists and nonconformists behave in situations where group pressure is not a relevant factor.

The earliest efforts to specify the personal determinants of conforming behavior dealt with a somewhat related cluster of variables, i.e., dependency needs, ascendence vs. submission tendencies and need for affiliation. Helson et al. (20) and Mouton et al. (31) demonstrated that in a simulated group atmosphere, the frequency and amount of shift toward the majority opinion is significantly correlated with the S's degree of submissiveness as measured by the Allport A-S Reaction Study.

An investigation by Barron (9), which also used "self-report" or "direct" personality measures, attempted to delineate further the personality correlates of independence of judgment in the standard "Asch-situation." Independents and yielders were found to be equally stable in personality, but to differ in their values and self-descriptions. The scores obtained on Gough's Adjective Check List (17)
indicated that yielders tend to a significantly greater
degree than the independents to describe themselves as "per-
sonally stable" or "well-adjusted." No significant differ-
enences were found between the groups on any of the MMPI scales.

Hardy (18) found, contrary to what he had predicted, that groups scoring high and low on a TAT-fantasy measure of
need Affiliation did not differ significantly in degree of
conformity behavior. In this study, standardized "arguments"
were used by pre-instructed "stooges" to exert pressure on
naive Ss in regard to their attitudes toward divorce.

Somewhat similar to the conclusions of the "ascendance-
submission" studies is the finding of Kagan and Mussen (24)
that Ss with strong dependency needs (as measured by TAT-
fantasy material) conform significantly more often in the
standard "Asch-situation" than Ss with weak dependency needs.

Crutchfield has reported a number of findings cover-
ing a variety of variables under the heading of Conformity
and Character (13). Using an elaborate apparatus consisting
of five adjacent electric panels, Crutchfield was able to
instruct Ss to believe that each was receiving the response
of four Ss when in fact the panels were wired in such a way
that the responses actually made by the five men did not
affect in any way the panels of the others. All the "answers"
received by the five Ss were transmitted by the experimenter
(E) and appeared simultaneously and identically on all five
panels. A control group gave judgments of the material
without using the apparatus and hence without "knowledge" of the responses of the others. Whereas the control group was capable of 100 percent accuracy on most of the items, the 50 men in the experimental group exhibited large and reliable amounts of conformity, and this conformity behavior occurred with respect to widely varied judgmental materials. It should be noted that Crutchfield's reporting of accuracy data represents a procedure rarely followed since the original Asch studies. Whether conformity has occurred (in terms of the definition employed in the present study) cannot be evaluated in the absence of a statement as to the degree of accuracy actually obtained in the situation by either a control group or the nonconforming Ss. In addition, it must be established that Ss are capable of accurate judgments of an unambiguous, objective reality in order to consider the task-situation comparable to that employed by Asch.

Assuming that conformity tendencies "are fundamental in the person," Crutchfield correlated conformity scores with several personality variables. Conformity was found to correlate -.33 with Baron's "ego-strength" scale, +.39 with the F-Scale (1) and +.35 with staff ratings of authoritarian behavior in a psychodrama situation. Each man was further rated by the assessment staff through the use of descriptive Q sorts. The nonconformist was described as an effective leader, persuasive, efficient, active and vigorous, expressive, ebullient, and self-reliant. Contrasting very sharply
with this picture is the description of those high in conformity behavior who were found to be submissive, compliant and overly accepting with respect to authority. In addition, the conformist was described as having a narrow range of interests; overcontrols his impulses and is inhibited; is unable to make decisions without vacillation; is confused, disorganized and unadaptive under stress; lacks insight into his own motives and behavior and is overly responsive to other people's evaluations. An analysis of the specific items on the personality inventories more frequently answered "True" by the extreme conformists reflect "a rather rigid, externally sanctioned, and inconsistent moralistic attitude (13, p. 195). And, finally, "there are various expressions of disturbed, dejected, and distrustful attitudes toward other people" (13, p. 196).

In summary, the picture of the extreme conformists that emerges from Crutchfield's findings is that of a group of anxious, overcontrolled, alienated, socially distrustful people. It seems equally reasonable to hypothesize, however, that it is the nonconformists who should have been found to be socially distrustful, i.e., that the person lacking in social trust, because of his suspiciousness, inclinations toward blame-projection and relative alienation from the group, will be rejecting of group standards and judgments and hence nonconforming. This latter conceptualization corresponds roughly to the theoretical formulations of Festinger (14) who has pointed out that people have a need for social
reality and that the more attractive a group is for a member, the stronger are the forces from this source acting upon him to conform (8). In effect, the nonconformist may be a person who expects other people to hinder rather than help him.

Asch (5) noted that the personal determinants of yielding-independence are little understood, but attempted an analysis in terms of a trust-distrust factor, an analysis which predates Crutchfield's findings but is similar in interpretation. According to Asch, independent behavior requires the assertion of one's self without fear of criticism from others or loss of self-respect. The conformist has found it "necessary to blunt his experiences, to develop a self that is shadowy, and to become superficial about the character of others. Such conditions impair the ability to trust; at the same time they injure one's capacity to do without support on those occasions that demand it" (5, p. 499).

It appears then that the relationship between social-trust and conformity is of a doubtful nature, and is largely a matter of conjecture. The social-personality dimension of trust-distrust was therefore included in the present study in order to test Crutchfield's findings, and further to obtain data relevant to the various speculations noted above. It was hypothesized that in an "Asch-type" situation, social-trust is significantly related to conforming behavior. The direction of this relationship was not predicted.
Several studies at The University of Michigan have attempted to relate conforming behavior to need Achievement (n-Achievement). In an attempt to specify the developmental precursors of n-Achievement, McClelland (30) has hypothesized that persons with strong achievement needs have internalized early in life standards of excellence with which they compete. This person is compared by McClelland to Riesman's (35) "inner-directed" type. Combining these two concepts (the competitiveness and "inner-direction" of the high need achiever) led to the prediction that n-Achievement is negatively correlated with conforming behavior. An analysis by McClelland of TAT-fantasy stories written by Asch's Ss supported the hypothesis.

A later study by Samelson (38) failed to support McClelland's finding in regard to the relationship between n-Achievement and conformity. Employing a situation that was not free from ambiguity, Samelson found no significant correlation between n-Achievement and conformity (N=25). The experimental task in Samelson's study was one in which naive Ss viewed a tachistoscopically presented four consonant nonsense syllable exposed at .2 sec., and then selected that syllable from four alternative syllables presented 1 second later. The naive Ss made their judgments following the publicly stated answers of four pre-instructed accomplices of the E.
One is tempted to explain the conflicting results obtained by McClelland and Samelson as being due to differences between the studies in the degree to which the correct answer was clearly apparent to the naive Ss. One could therefore conclude that the strength of achievement motivation is inversely related to conformity behavior only in situations where the naive S is obviously aware of what the correct answer is. A more recent study by Krebs (26), however, confounds the issue and makes difficult any formulation that would specify the exact nature of the relationship between n-Achievement and conformity. Krebs and Ss view sets of slides and specify later whether the objects viewed appeared on one or the other of a pair of slides. According to Krebs "since there were a great number of objects on the slides and since the duration of exposure was short, considerable ambiguity existed concerning the precise nature of the objects presented in either" (26, p. 130). Unlike Samelson who also used a relatively ambiguous task-situation, Krebs obtained a significant negative relationship between n-Achievement and conformity.

In effect, the significant correlation reported by McClelland has not been replicated in a similar type of conformity situation, i.e., one in which the task-stimuli are unambiguous. Hence, the personality variable, strength of achievement motivation, was included in the present study in an attempt to replicate McClelland's finding. The experimental design employed in the present study was not intended
to provide data concerning the relationship between n-Achievement and conformity when ambiguous task-stimuli are used. On the basis of these considerations the following hypothesis was proposed: in an "Asch-type" situation employing unambiguous task-stimuli, the amount of conformity behavior is inversely related to the strength of n-Achievement.

In recent years, a number of studies completed under the direction of J. B. Rotter (36) investigated the predictive utility of a new personality construct—belief in internal vs. external control of reinforcements. The first of these studies, by Phares (34) utilized a related construct (skill vs. chance) in order to determine the degree to which Ss viewed the occurrence of a reinforcement as being due to "luck" or personal skill. Later studies by Neff (32) and James and Rotter (23) added more evidence regarding the utility of this construct for predicting changes in expectancies and behavior under partial and 100 percent reinforcement conditions. A 13-item scale was designed by Phares (34) to measure the personality characteristic of attributing the occurrence of reinforcements to chance or skill. This scale was revised and enlarged by James (22) who was able to predict from the test individual differences in regard to resistance to extinction.

A recent manuscript by Rotter, Seeman and Liverant (37) has attempted to delineate the significance of this variable for behavior theory in general. The belief in
internal or external control was defined as follows: belief in internal control "describes an individual who in a specific situation or class of situations believes that what has happened is happening or will happen is directly related to what he has done, is doing, or will do in those situations. ..." (37, p. 37). Belief in external control is characteristic of the individual who views what happens to him in certain situations as being unrelated to what he does in those situations. "He achieves satisfactions because he is lucky, other people are responsible, fate is on his side or it was 'just one of those things'" (37, p. 38). In essence, internal control refers to the perception of events as being a consequence of one's own actions and therefore under personal control, whereas belief in external control refers to the perception of events as the consequence of forces beyond one's understanding and therefore not under personal control.

Seeman (37) has attempted to point out the relevance of the I-E variable for sociological theory via an analysis utilizing the concept of alienation. Parallels between the belief in external control and five common usages of the concept of alienation were drawn: "powerlessness" (the person believes that his behavior will not affect the occurrence of reinforcements), "meaninglessness" (complex affairs are viewed as unintelligible), "Normlessness" (personal disorganization and distrust in social relations), "social isolation" (inability to share common social goals of norms) and
"self-estrangement" (lack of self-awareness). When viewed in these terms, the person who has a strong belief in external control is not unlike the extreme conformists described by Crutchfield (13). The potential for understanding conformity behavior as an outcome of belief in external control was also noted by Rotter (37) who stated that people high in external control could be expected to be conformists, whereas persons who were high in internal control would be nonconformists.

As with the social-trust variable, however, it seems difficult on further analysis to specify the exact direction of the relationship between I-E control and conformity. Conceivably, persons strongly believing in external control may (like persons who are socially distrustful) be rejecting of group opinions or judgments and hence be nonconforming. Or alternatively, their anxiety about the nature of their social relations may prohibit any willingness to "stand alone" and be open to criticism. It was hypothesized therefore (without specifying the direction) that in an Asch-type situation, degree of belief in internal or external control is significantly related to conforming behavior.

Aside from the previously cited study by Barron (9) little is known about the self-perceptions or self-characterizations of conformists and nonconformists. Such self-descriptions, of course, may not correspond closely to the descriptions which might be given by an objective observer.
Nevertheless, asking Ss to describe what they are like or to rank or list their values should provide meaningful data in regard to an important aspect of personality "structure." The present study attempted to determine what differences, if any, exist between conformists and non-conformists in regard to six self-reported, i.e., directly measured, value orientations. Value orientations is defined as the cognitively organized rules of conduct that help direct one's behavior in given ways. The six values employed and a method of measuring their importance to the individual were obtained from Wertheimer (42). Wertheimer titles these values: Affiliation, Fascism, Hedonism, Integrity, Other-direction, and Status. However, two of the values (Fascism and Other-direction) appear to be inappropriately labeled, and for the present study were retitled Authoritarian Submission, and Altruism. The values and the method of measuring them, as well as the other personality measures and behavioral situations, are described in Chapter II.

It was hypothesized that nonconformists attach greatest importance to Integrity and Status, whereas conformist attach greatest importance to Affiliation and Authoritarian Submission. No prediction was made in regard to Hedonism and Altruism.

The variables thus far discussed have a common bond in that they all refer to "inner" or "personal" characteristics of independents and yielders. Noticeably lacking in the
literature on conformity behavior is data relevant to the overt behavior of conformists and nonconformists in situations not directly involving group pressure. The belief that conformists behave differently from nonconformists in a variety of social situations thoroughly permeates psychological and sociological writings (5,13,16). Riesman (35) in fact accounts for much of the contemporary social milieu in terms of a typology (inner vs. other-direction) closely related to conformity-nonconformity. Several writers (15,21) see in the increasing tendency toward social conformity a basis for explaining many contemporary social problems. Fromm (16) is perhaps most explicit about the "undesirable" social consequences of conforming behavior. According to Fromm cooperative, productive social-interaction would necessitate the abandonment of conforming behavior. Whether conformists are in fact less cooperative and more exploitative or "marketing" oriented is a conceptualization still awaiting experimental confirmation, and was therefore put to test in the present research.

The behavioral situation used to examine the relationship between conformity and cooperation was designed by Scodel et al. (39) and was derived from the models employed in formal game theory (28,41). The task employed constituted a two-person non-zero sum non-cooperative game, played in temporal repetition with a pay-off matrix that permitted the development of cooperative strategies. By cooperative
strategy it is meant that one or both Ss play the game so as to maximize joint monetary return. (A complete description of the game appears in Chapter II.) It was hypothesized that nonconformist Ss playing the game in pairs would cooperate significantly more often than pairs of conformist Ss.
CHAPTER II

PERSONALITY MEASURES AND BEHAVIORAL SITUATIONS

The Social Trust-Distrust Scale (ST-D)

A 50-item Likert-type inventory was devised to measure social trust-distrust. For each item there are four response categories: "strongly agree," "agree," "disagree," "strongly disagree." High scores on the scale indicate social distrust which is viewed as consisting of three factors: a heightened sensitivity in regard to the behavior and motives of other people, unreasonably frequent use of projection as an ego defense, and a pervasive suspiciousness about the intent or meaning of other people's behavior. In sum, the socially distrustful person has a "paranoid" orientation toward other people.

Three clusters of items were used in the scale. These were taken from the Paranoia scale of the MMPI (19) and from the California F-Scale (1). The first cluster consisted of 11 obvious items (MMPI #'s 16, 24, 35, 127, 157, 284, 299, 305, 314, 317, 347, present scale #'s 2, 4, 6, 10, 14, 22, 24, 28, 40, 48, 50) taken from the MMPI-Pa Scale. The omitted obvious items of the MMPI-Pa Scale were those whose content very clearly dealt with bizarre or psychotic thoughts and behavior. The obvious items were scored +4 for "strongly
agree" to +1 for "strongly disagree." An illustrative item (#2 on the present scale) is, "I sometimes think I get a raw deal from life."

The second cluster of items consisted of nine subtle items (MMPI #'s 93, 109, 117, 124, 313, 316; present scale #'s 8, 12, 16, 18, 20, 25, 32, 36, 44) also taken from the MMPI-Pa Scale. When the original standard scoring procedure of the MMPI is used, these nine items are scored in the "pathological" direction when the S responds "false," i.e., disagrees with the item. Wiener (43) has reported, however, that with "non-clinic" populations, the scores obtained on the obvious and subtle items are not correlated with each other. Wiener states that the average correlation of the obvious scales with the subtle scales is -.15; for the Pa scale the correlation is +.10. In the present study the correlation between the 11 obvious items and the 9 subtle items is -.54 (N=92, p<.001). Very clearly the obvious and subtle items do not measure the same thing in the same way. The subtle items, however, when scored in the reversed direction (+4 for "strongly agree to +1 for "strongly disagree") correlate +.86 (N=92, p<.001) with the total score on the distrust scale. Wiener similarly found that the discriminating subtle items ("normal" Ss) were those items "whose significant answers were in a reverse direction from the expectation of both the original authors of the MMPI and the authors of the present keys." Therefore all of the MMPI
subtle items were treated as obvious items and received a maximum score in the direction of distrust when the S responded "strongly agree." An illustrative subtle item (#8 on the present scale) is, "Most people are honest chiefly through fear of being caught."

The third cluster of items consisted of the five F-scale items (F-scale, Form 40-45 #'s 18, 31, 33, 35, 38; present scale #'s 30, 34, 38, 42, 46) that were intended to measure "projectivity." Projectivity has been defined as "the disposition to believe that wild and dangerous things go on in the world; the projection outwards of unconscious emotional impulses" (1, p. 250). The five F-Scale items were scored +4 for "strongly agree" to +1 for "strongly disagree." As with the subtle and obvious items, an S received a score in the direction of distrust when he "strongly agrees" or "agrees" with the item. Scores obtained on the five F-Scale items correlate .58 with the total score on the ST-D Scale (p < .001, N=92).

The remaining 25 items are buffer or neutral items culled from several personality-attitude inventories. The only scored items are the 25 even numbered items on the scale. The possible range of scores on the ST-D scale is 25-100. An actual range of 36-67 was obtained with a mean of 55.2 and a standard deviation of 5.81 (N=92). The possible range of scores for the five F-scale items is 5-20. An actual range of 7-16 was obtained with a mean of 10.6 and a standard deviation of 1.81 (N=92).
The Internal-External Control Scale (I-E)

The I-E scale employed in the present research was developed by Liverant within the framework of Social Learning Theory (36). Internal-external control is viewed by Liverant as an expectancy construct by means of which an individual categorizes events as within or beyond the bounds of personal understanding and responsibility. In its present form the scale contains 101 forced choice pairs of items selected so as to minimize the influence of the "social desirability" factor. The scale yields scores for five specific need categories and one general class as follows: academic recognition; social recognition; love and affection; dominance; social-political; general life philosophy. The sum of the scores obtained on these five need categories and one general class constitutes an S's total I-E score. An illustrative item (academic recognition category) is "I more strongly believe that"

a) my failures in school are usually the result of inadequate effort and poor planning, not circumstances.

b) it is hard to understand why one does poorly in certain courses and well in others.

The possible range of total I-E scores is 0-101. An actual range of 1-51 was obtained with a mean of 20.7 and a standard deviation of 11.66 (N=92). High scores signify belief in external control; low scores signify belief in internal control.
Evidence for the construct validity of the I-E and ST-D scales is indicated by a correlational analysis (Pearson r) between the two scales. A correlation of .42 \( (p < .001, N=92) \) was obtained between the I-E and ST-D scales. The I-E scale is also correlated .22 \( (p < .05, N=92) \) with the five F-scale "projectivity" items. These correlations are consistent with the basic definitions of what each scale is intended to measure. The socially distrustful person who views the world as chaotic and harmful and distorts the meaning of his social involvements also tends to believe that events are unpredictable and that personal control or responsibility for one's behavior is difficult. It should be noted that these scales were developed independently and that no direct overlap exists between the items contained on either, a fact which adds to the meaningfulness of the above relationships. (A copy of the I-E scale and instructions for administration appears in Appendix B.)

The TAT-Fantasy Measure of Achievement Motivation

Need achievement (n-Achievement) is defined as the latent disposition to strive for success in competition with some standard of excellence (30). A method for measuring n-Achievement has been developed by McClelland et al. (30), which requires Ss to write TAT-like stories to specifically selected pictures. To measure the strength of an S's achievement motivation, his stories are scored according to an empirically derived scoring system for amount of achievement
imagery and the detail of its elaboration. It is assumed that persons with high n-Achievement scores should respond more quickly, intensely and persistently in an actual achievement situation as compared to persons with low n-Achievement scores. The experimental data tend to support this assumption: in general low to moderate significant correlations have been reported between the strength of n-Achievement and a variety of measures of overt achievement behavior (6,7,29).

The present study used as a measure of n-Achievement the standard six picture format devised by McClelland et al. (30). Cards 3,8,5,7,28 and 4 of the standard series were administered in that order under neutral group conditions. The scores were obtained by scoring the stories for Achievement Imagery and Achievement Theme according to the definitions of McClelland et al. (30). (A copy of the scoring manual appears in Appendix C.) The possible range of scores was 0 to 12. An actual range of 0 to 10 was obtained with a mean of 5.2 and a standard deviation of 2.29 (N=92). A measure of the inter-rater reliability for the scoring of the n-Achievement stories was obtained by correlating (Pearson r) the scores obtained by the writer with those independently obtained by another scorer. The resulting correlation based on the stories of 20 Ss was .79.
The Six Values

The content of the six values and a method of measuring them was obtained from Wertheimer (42). Each value was represented by a single statement which was typed unlabeled on a 3 x 5 card. S's were instructed to rank the six cards in order of importance to them.

The six values, the statement representing each and the letter used to identify the values follow:

A-Affiliation. One should act in such a way that people will like one, so that one makes friends wherever one goes.

F-Authoritarian submission. One should follow the advice of wiser and more experienced people, who have led worth-while lives.

O-Altruism. One should be kind to others, respecting the dignity and worth of every individual, and acting in a warm and helpful way towards others.

H-Hedonism. One should act in such a way as to get as much pleasure and satisfaction out of life as possible.

I-Integrity. One should satisfy one's own conscience, and make decisions one believes are right, regardless of whether one hurts oneself or others.

S-Status. One should act in such a way as to make the most of oneself, in order to earn the respect of others.
Measure of Conformity

The "conformity situation" developed for the present research has as its essential feature the exposure of naive S's, one at a time, to stimuli which can be readily perceived accurately. This exposure was followed immediately by the judgments of preinstructed accomplices of the E who intentionally gave inaccurate judgments on 12 critical trials. The conformity situation constituted a simulated group atmosphere in that the accomplices were never physically present while the naive Ss made their judgments. This was accomplished through the use of a tape recording in the following manner.

The stimuli to be judged consisted of 18 separate series of "knocks" produced by rapping on a table at the rate of approximately 10 "knocks" per 2 1/2 sec. Following each series of "knocks," three accomplices of the E stated in a fixed sequence how many knocks they heard by calling out the number they were previously instructed to announce. The three accomplices never disagreed with each other. The series of "knocks" and the "answers" of the three accomplices were recorded on tape. When the naive S appeared for the "tape session" he was told that he was "the fourth S to participate in this part of the experiment." The S was told that he would hear a series of knocks followed by the answers of the three previous Ss, each of whom would state how many "knocks" he heard. The S was told to announce his answer into a
microphone as soon as the third person had given his answer. The subject's answer was followed by a pause of about 7 seconds. He then heard the second series of "knocks," then three "answers," and then he announced his answer into the microphone. A pause of 7 seconds again followed the naive S's answer. The third series then followed and so on for 18 trials. The naive Ss were told that their answers were being recorded on a second tape, and that the purpose of the 7 second pause was to leave "recording room for the subjects who came after you." No subject questioned the suitability of the procedure for simultaneously recording and playing the tapes so as to be able to have the next subject hear everything that preceded him. Of course, the naive Ss were not recorded (although they believed they were ); each S heard only the three "accomplices."

The number of knocks on each trial, their order of appearance, and the "answers" of the three accomplices follow:

<table>
<thead>
<tr>
<th>Trial</th>
<th>Actual No. of &quot;Knocks&quot;</th>
<th>&quot;Accomplices&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>3*</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>4*</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>6*</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>7*</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>8</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>
An S's conformity score was the total number of times he agreed with the majority on the twelve critical trials.

The technique of using a simulated group atmosphere in place of physically present accomplices represents a marked departure from the original Asch procedure. Refinements of the Asch method, similar to the one employed in the present study, however, have been used frequently with considerable success (11,33). The present methodology represents, in two respects, an improvement over the original Asch-method. The present tape procedure does away with the need for confederates who have to "act" their rolls with all subjects. Thus, the tape method ensures constant uniformity of the situation for all subjects. In addition the tape method is more efficient in time and effort by virtue of doing away with the need for actual paid confederates with all subjects.
The possible range of conformity scores was from 0-12. An actual range of 0-8 with a mean of 3.63, a standard deviation of 2.36 and a median of 3.39 was obtained (N=68).

Game Situation

A two-person task was derived from formal game theory (28) in order to examine the relationship between conformity behavior and cooperation. This task can be viewed as a micro-social situation which permitted two people to interact, observe each others behavior and make decisions affecting themselves and the other person. The situation employed constituted a two-person, non-zero sum, non-cooperative game. A zero-sum game is one in which utilities are directly opposed, i.e., what one player wins, the other player loses. A non-zero sum game is one in which the game need not be played on a strictly competitive basis, i.e., cooperation for mutual gain is always a possibility. A non-cooperative game is one in which no verbal communication between the players is permitted before or during the play.

The game was presented to the players in the following manner. Two Ss were brought into a room and seated at opposite sides of a desk. In the middle of the desk, midway between the Ss was a large rectangular wooden shield which prevented the Ss from seeing each other. Placed on the desk in front of each S was a small wooden block containing one switch. Printed on one side of the switch was the letter B (Black) and on the other side R (Red). Facing the E who sat
at a right angle to both Ss was a large wooden panel which contained electric bulbs wired to the switches in a manner that enabled the E to determine immediately after each trial exactly which choice each player made (Red or Black). The Ss were told that their task was to push the switch toward either the R or B position when the signal was given by the E. The Ss were also told that they would be given money after each trial according to what each of them "pushed" (R or B) and that they could keep all the money they were given. The Ss were payed off according to a pay-off matrix which was printed on a 5 x 7 card. This card was prominently displayed in front of each S. (A full description of the exact instructions appears in Chapter III.)

The pay-off matrix employed was selected on the basis of previous research with the game by Scodel et al. (39) and pre-testing done by the writer. Scodel et al. employed a matrix which payed three cents to each player when both pushed Black (cooperation), one cent to each player when both pushed red, and five cents to one player and nothing to the other when the first S pushed Red and the other S pushed Black. In matrix form these pay-offs can be represented as follows:

\[
\begin{array}{c|cc}
& Yb & Yr \\
Xb & 3,3 & 0,5 \\
Xr & 5,0 & 1,1 \\
\end{array}
\]
Scodel et al. ran 41 pairs of Ss with the above matrix and obtained cooperation (Xb, Yb) from only three pairs of Ss. In addition, the overwhelmingly dominant play was Xr, Yr. The present investigator therefore pre-tested three different pay-off matrices using 12 pairs of college girls as Ss in an attempt to devise a matrix which would make for greater variability by increasing the number of black choices, i.e., Xb, Yb. The following matrix was finally selected and used in the experiment proper:

\[
\begin{array}{c|cc}
   & Yb & Yr \\
\hline
Xb & 8,8 & 1,10 \\
Xr & 10,1 & 2,2
\end{array}
\]

According to Luce and Raiffa (28) the choice Xb, Yb should predominate when there is temporal repetition of the game. This prediction was based on the following reasoning. Even though no communication is permitted between the players, a form of involuntary communication occurs when the game is repeated through a number of trials (30 in the present research) and the pay-off is made after each trial prior to the next play. The players, in effect, "signal" to each other via their choice patterns on previous plays. This behavior should lead to the development of "temporal collusion." When the game is played with only a single trial, Xr strictly dominates the choice Xb and Yr strictly dominates the choice Yb. Temporal collusion is of course impossible with only a single play and the choice Xr, Yr is the unique equilibrium
pair of the game. Viewed from the players point of view, without formal terms, $X_r$, $Y_r$ is preferred because 10 is greater than 8 and 2 is greater than 1. With temporal repetition of the game, however, each player should learn that "pushing" Black is preferable $(X_b, Y_b)$ since the only real alternative is $X_r$, $Y_r$ which neither prefers. But $X_b$, $Y_b$ is not in equilibrium, which means that there is good reason for each of them to defect to $R$. For example, should the pattern of selecting $X_b$, $Y_b$ be arrived at, one of the players may be tempted to get more, i.e., select $R$ on the next trial resulting in $X_r$, $Y_b$. However, the player who defects to $R$ should anticipate the selection of $R$ by the other player on the next trial resulting in $X_r$, $Y_r$ which is not jointly desirable. The contemplation of $X_r$, $Y_r$ then should keep the potential defector in line, and if he is unable to anticipate the consequences of his choosing $R$, a few trials of $X_r$, $Y_r$ should result in a return to $X_b$, $Y_b$. To summarize, in a repeated game the selection of $X_b$, $Y_b$ is a sort of quasi-equilibrium, because it is not to the advantage of either player, in the long run, to initiate the choice which leads to $X_r$, $Y_r$. This equilibrium $(X_b, Y_b)$ is an unstable one in that the temptation always exists to choose $R$.

It should be clear then that a decision to select Black repeatedly requires having "faith" in the other player.
One must be able to believe that the other person is willing to cooperate—hence the hypothesis derived from Fromm's analysis that nonconformists will be more cooperative than conformists, i.e., select Red significantly less often.
CHAPTER III

METHOD

Subjects.- Two hundred and thirty students, all males and either freshmen or sophomores at the Ohio State University, volunteered to participate in the study. Participation as Ss in psychology research is required by the Department of Psychology of all students enrolled in the introductory psychology course. The initial sign-up sheet requested the students to volunteer for a study on "techniques of measuring attitudes."

Procedure.- There were three parts to the present experiment: (I) administration of the personality measures except for the I-E scale, (II) administration of the I-E scale followed by participation in the conformity situation, (III) participation in the game.

Ninety-two Ss participated in the first part of the experiment. The Ss were seen in small groups of five to nine Ss per hour. The first measure administered was the TAT-fantasy measure of n-Achievement. Each S was given six sheets of 6 1/2 x 11 paper. Four questions appeared on each page: 1. What is happening? Who are the persons? 2. What has led up to the situation? That is, what happened in the past? 3. What is being thought? What is wanted? By whom?
4. What will happen? What will be done? The following instructions were then read to the Ss:

A number of pictures will be projected before you one at a time. You will have twenty seconds to look at the picture and then about four minutes to make up a story about it. Notice that there is one page for each picture. The same four questions are asked. They will guide your thinking and enable you to cover all the elements of a plot in the time allotted. Plan to spend about a minute on each question. I will keep time and tell you when it is about time to go on to the next question for each story. You will have a little time to finish your story before the next picture is shown.

Obviously there are no right or wrong answers, so you may feel free to make up any kind of a story about the pictures that you choose. Try to make them vivid and dramatic. Do not merely describe the picture you see. Tell a story about it. Work as fast as you can in order to finish in time. Make them interesting. Are there any questions? If you need more space for any questions, use the reverse side.

The Ss were then administered the ST-D Scale. The Ss were told to "read the instructions on the top of the first page and then fill out the scale." A copy of this scale titled College Student Attitude-Opinion Survey with the complete instructions appears in Appendix A.

Immediately following the completion of the ST-D Scale, the Ss were handed the 6 cards containing the value statements for ranking. The Ss were told, "for the next task we will use the six cards I just handed out. Do not write on them. You will notice that each card contains a letter at the top and a statement written underneath it. I want you to take these six cards, read the statement on each of them, and and then rank them in order of their importance for you. The
most important letter would be ranked first, the next impor
tant letter would be ranked second and so on with the least
important letter ranked last. Any questions? (Ss then
ranked the cards.) Okay—now I want you to record your rank-
ing." The Ss were then instructed to write down on a sheet
of paper the letters of the cards in order of their rankings
from first to last.

This concluded the first experimental session. Before
the Ss left, arrangements were made with them to return a
week later for the second part of the experiment.

Conformity Situation

Sixty-eight of the original 92 Ss participated in
Part II of the experiment. Twenty-four Ss were "lost" for
various reasons: two Ss dropped out of school, two Ss had
already met their research requirement, five Ss were not
included by the E because the first tape used was improperly
recorded and no variability occurred for these five Ss, two
Ss were "dropped" because they spontaneously stated that the
situation was "fixed," and 13 Ss could not participate because
of scheduling difficulties. t tests for the significance of
the differences between the means on the personality measures
administered during the first part of the experiment revealed
no significant differences of any of the measures between the
68 Ss who participated in Part II and the 24 Ss who did not
participate. One to four Ss per hour appeared for Part II.
The S first filled out the I-E Scale. As soon as he finished,
he participated in the "conformity situation." When two-fours Ss appeared at the same time, the Ss were started on the I-E scale and then called out one at a time to participate in the "conformity situation." Upon completing the conformity task, the Ss returned to the other room to complete the I-E scale.

When brought into the "conformity situation," the S was seated in front of three banked tape recorders. Two were used in the experiment. A set of ear-phones was connected to tape recorded #2, and a microphone appeared to be connected to tape recorder #3. The cord extending from the microphone was actually taped to the rear of the tape recorder and served no function except to enhance the S's belief that they were being recorded. The following instructions were read to the Ss:

Here are the instructions for this part. I am going to present auditory material using a tape recorder, and I am also going to record your answers on tape and by hand. You'll be able to hear the material through those ear-phones. The answers of all the subjects are being recorded on the same tape. You are the fourth subject to participate in this part so far. You will hear a number of knocks followed by the voices of the previous subjects, each of whom will state how many knocks he heard. After the last person has given his answer, you should state your answer into the microphone. There will be a pause of about seven seconds between trials to leave recording room for the other subjects who come after. To summarize: you will hear a number of knocks followed by the other subjects statements as to how many knocks they heard. Since you are the fourth person to go, you will hear three people answer. Right after the last person has given his answer you give yours. Then there will be a pause of about seven seconds followed by the second series of knocks. Again you will hear the
other subjects answer. Then give your answer. Then there will be a pause again of about seven seconds, then the third series of knocks--and so on. Be sure to pay very close attention so you don't miss anything. Do you have any questions? Okay, then--now listen carefully and do as well as you can. Performance in this task is highly related to mental alertness.

This last statement about "mental alertness" was made in order to engage the achievement motive in the situation, so that the Ss could develop the expectancy that the "right" behavior in the situation would be instrumental in satisfying their desire for achievement or success. Previous research (6,7) has demonstrated that n-Achievement is related to overt behavior only in situations where the Ss are led to believe that certain kinds of performance will be accompanied by a sense of personal accomplishment.

Following the completion of the tape the Ss were asked three questions: "What do you think is the purpose of this part of the experiment?" "Who do you think the people you heard are?" "Did they influence you in making your judgments?" The purpose of this brief interview was to determine whether an S should be excluded because he "saw through" the deception. Only the two S stated following question one that the experiment was "phony" or "fixed" and that the other people they heard "were not really subjects." These two Ss were not included in the final N of 68. Many Ss stated to question one that the purpose of the experiment was to "see if you could be influenced." These Ss were not dropped from the final N since none saw through the deception. In fact, many
of these Ss who "figured out" the purpose of the experiment stated to question three that they were not influenced when in fact they conformed on as many as six or seven trials. This observation is similar to that reported by Asch (3) who also found that many conforming Ss deny being influenced.

Following the brief interview the Ss returned to the first room to complete the I-E scale. Prior to leaving, all the Ss who participated in the "conformity situation" gave the E their telephone number and a list of their free hours so that they could be contacted and told when to appear for Part II of the experiment.

The Game

The Ss appeared for the game in pairs. Prior to the game they had been matched by the E on the basis of their scores in the conformity situation. Nine pairs of conformists and 12 pairs of nonconformists played the game. A conformity score of 0-2 placed an S in the nonconformist group, whereas a conformity score of six or more placed an S in the conformity group. Whenever possible an S was matched with another S who had an identical conformity score.

The subjects were seated on either side of a desk and the following instructions were read to them:

Here are the instructions for this task. In front of each of you is a piece of wood with a switch on it. On one side is an R, on the other side is a B. The R stands for red, the B stands for black. The switch is now in the center or neutral position. It can be moved over toward the R or B. Your task is
simply to move the switch to the red or black position when I give the signal by saying "push." I will give each of you your money after each trial according to what each of you push. You can take the money with you when you leave, it's yours. How I pay you off is determined as follows:

If you push black two things can happen. If you push black and the other person also pushes black you get eight cents and the other person gets eight cents. If you push black and the other person pushes red, you get one cent and the other person gets ten cents. If you should push red, again two things can happen. If you push red and the other person pushes red, you get two cents and the other person gets two cents. If you push red and the other person pushes black, you get ten cents and the other person gets one cent.

The card in front of each of you contains exactly the same information that I just read to you. Look it over and see if you understand it. Do you have any questions about the information on the card?

I will give you the money each time after both of you push your switches. After I pay both of you off return your switches to the neutral position. Each of you will keep all the money that I give you throughout the task. You cannot talk to each other or to me during the task. If you have any questions just raise your hand and I will go over the instructions again.

The only purpose of this panel in front of me is to let me know what each of you have pushed. It contains some electric bulbs which light up when you push the switches.

The Ss were not told how many trials there would be. The game was pleyed for thirty trials. However, play was stopped before thirty trials when a pair made five consecutive identical plays.

At the completion of the game the Ss were thanked for their cooperation and were requested not to discuss the game with anyone.
CHAPTER IV

RESULTS

The first question to be considered is whether the "tape situation" worked, i.e., did variability in performance occur with some Ss yielding often while other Ss remained independent? The data in Table 1 consist of a count of the number of Ss who obtained a given score in the conformity situation. Table 1 indicates that 26 Ss out of 68 or 38.2 percent yielded less than three times on the twelve critical trials. Twenty-two Ss or 32.3 percent yielded on six or more trials.

Table 1

Number of Conforming Responses Per Subject

<table>
<thead>
<tr>
<th>Number of Conforming Responses</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8</td>
<td>6</td>
<td>12</td>
<td>9</td>
<td>8</td>
<td>3</td>
<td>13</td>
<td>7</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>68</td>
<td>3.63</td>
</tr>
</tbody>
</table>

These results are very similar to those reported in other studies which used the "standard" or a modified "Asch-type situation."

Basic to the present definition of conformity is the assumption that the stimuli to be judged are capable of being
accurately perceived. This assumption was tested by comparing the conformists (Ss who obtained scores of 6 or more) with the nonconformists (Ss who obtained scores of 2 or less) with regard to the percentage of accurate judgments made by these 2 groups on all 18 trials. The conformists were accurate on 47 percent of the judgments in contrast to the 82 percent accuracy score of the nonconformists. A t test for the significance of the difference between percentages yielded a t of 2.92 which is significant at better than the .01 level. It can be concluded that a high degree of accuracy is possible in the task and that the nonconformists, as would be expected were significantly more accurate than the conformists.

One might argue on the basis of the data thus far presented that the "tape" situation is not a measure of conformity at all, but is, rather, a measure of the S's ability to count the number of knocks. Such an assumption is not plausible, however, when considered in the light of the conforming S's behavior during the task. For most of these Ss, the situation was an anxiety-arousing experience. The behavior of the conforming Ss, prior to and while stating their answers, clearly indicated that they realized that the answers of the "other Ss" were not correct. Quite frequently, the conforming Ss squirmed in their seats, looked surprised or angry, shook their heads, rearranged the ear-phones, and on occasion impulsively started to question the experimenter, forgetting that they were being "recorded." Over-all, it
appears that the conforming Ss differed from the nonconformists not in the ability to count rapid sequences of knocks, but in the degree to which they could remain uninfluenced by simulated group pressure.

The first experimental hypothesis postulated a relationship between conforming behavior and the general tendency to be either trusting or distrusting of other people. The correlation of -.13 obtained between conformity scores and total scores on the ST-D Scale indicates a weak and insignificant relationship between these variables (Table 2).

Table 2

Product-Moment Correlations Between Conformity and Social Trust, Subtle, Obvious and Projection Items (N=68)

<table>
<thead>
<tr>
<th></th>
<th>Social Trust</th>
<th>Subtle</th>
<th>Obvious</th>
<th>Projection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conformity</td>
<td>-.13</td>
<td>-.08</td>
<td>-.22*</td>
<td>.08</td>
</tr>
</tbody>
</table>

*p = .07 (two-tailed test).

Scores on the three components of the ST-D Scale were analyzed separately for possible relationships with conforming behavior. Table 2 contains the correlations obtained between conformity and the five F-Scale Projection items, the nine Subtle MMPI items (scored in the obvious direction) and the 11 Obvious MMPI items. Inspection of Table 2 indicates no relationship between conforming behavior and scores on the Subtle and Projection items. A -.22 correlation, significant at the .07 level, was obtained between conformity and scores
on the obvious items. Over-all, the evidence suggests a slight tendency, at best, for persons who are nonconforming in a modified "Asch-situation" to be distrustful of other people.

The second hypothesis stated that a negative relationship exists between conforming behavior and achievement motivation when the Ss are required to make judgments about unambiguous task stimuli. Table 3 indicates that a highly significant relationship exists between n-Achievement and conformity. We can conclude, as predicted, that persons with a strong achievement need tend to resist stimulated group pressure, whereas persons with a weak achievement need tend to yield.

Table 3

<table>
<thead>
<tr>
<th>Need Achievement</th>
<th>Internal-External Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conformity</td>
<td>-.32*</td>
</tr>
<tr>
<td></td>
<td>-.08</td>
</tr>
</tbody>
</table>

*p = < .005 (One-tailed test, direction predicted.)

The third hypothesis stated that conforming behavior is related to belief in internal or external control of personal behavior and events. A correlation of -.08 (Table 3) was obtained between the Ss scores in the conformity situation and their scores on the I-E Scale. The third hypothesis was not confirmed.
The fourth hypothesis postulated a relationship between conforming behavior and the S's ranking of the importance they attach to the values of Integrity, Authoritarian Submission, Affiliation, and Status. It was hypothesized that nonconformists attach greatest importance to Status and Integrity, whereas the conformists attach greatest importance to Affiliation and Authoritarian Submission. The nonparametric Mann-Whitney U test was used to determine whether Ss who differ in their ranking of the values also differ in amount of conformity behavior. Ss for whom conformity scores were available were divided into two groups, those who ranked a given value first or second and those who ranked that value fifth or sixth. The U test (one-tailed) was then used to determine whether the two groups differ significantly in amount of conformity. Table 4 contains the results of this analysis.

Table 4

Differences in Conformity Between Subjects Who Ranked a Value First-Second or Fifth-Sixth

<table>
<thead>
<tr>
<th>Value</th>
<th>Mean Conformity Rank* (Value 1st or 2nd)</th>
<th>Mean Conformity Rank* (Value 5th or 6th)</th>
<th>U</th>
<th>Z</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliation</td>
<td>22.15 (16)**</td>
<td>19.39 (24)**</td>
<td>165.5</td>
<td>.732</td>
<td>.23</td>
</tr>
<tr>
<td>Authoritarian</td>
<td>16.94 (18)</td>
<td>13.33 (12)</td>
<td>82</td>
<td>1.10</td>
<td>.13</td>
</tr>
<tr>
<td>Submission</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrity</td>
<td>21.73 (17)</td>
<td>30.78 (38)</td>
<td>217</td>
<td>1.94</td>
<td>.03</td>
</tr>
<tr>
<td>Status</td>
<td>20.77 (24)</td>
<td>17.32 (14)</td>
<td>137.5</td>
<td>.680</td>
<td>.25</td>
</tr>
</tbody>
</table>

*Rank 1 was assigned to the lowest scores in all U test tables.
**The numbers in parenthesis indicate the N for each group in all U test tables.
Inspection of Table 4 indicates only one significant difference in conformity scores, that for the value of Integrity. This difference is in the predicted direction; conformists tend to rank the value Integrity fifth or sixth significantly more often than nonconformists. Conformists, as predicted, also tend to rank the value Authoritarian Submission first or second more often than the nonconformists, although this difference is significant at only the .13 level. The differences for Affiliation and Status are clearly insignificant. In summary, the hypothesized differences between conformists and nonconformists were confirmed in one instance (Integrity), were suggestive in another (Authoritarian Submission) and not confirmed for Affiliation and Status.

The last hypothesis predicted a relationship between cooperation in a two-person non-zero sum game and conformity-nonconformity. It was predicted that nonconformists playing the game in pairs would cooperate significantly more often than pairs of conforming Ss. Since the distributions of scores in the game were markedly skewed, non-parametric statistics were used throughout to analyze the relationship of game performance to the other measures.

Contrary to the formulations of Game Theory (28) the development of stable collusion (repeated selection of Black by each S) rarely occurred. Only two pairs of Ss out of 20 repeatedly selected Black. Nevertheless, sufficient variability did occur in the number of Black choices to permit
an analysis of performance with respect to the scores on other measures. Two criteria served as indices of attempted cooperation. The first criterion of attempted cooperation was the number of times an S chose Red. It will be recalled that the selection of Red results in one of two outcomes, the S gets nine cents more than the other S, or both get the same amount, but less than they would jointly receive for Black-Black. It is impossible to maximize joint monetary return by selecting Red. Thus, the number of times an S selected Red over 30 trials served as the first index of attempted cooperation. High scores on Red, therefore, represent infrequent attempts at cooperation.

Since the game consisted of 30 trials, and each S chose Red or Black on each trial, an S's score for Black is equal to 30 minus the number of Red. The second criterion for attempted cooperation was based on the number of Black selections. Each S who played the game was categorized as either attempting or not attempting to cooperate. An S was classified as "attempting to cooperate" if during the first ten trials of the game, he selected Black five times with at least two of the Black choices occurring successively. This criterion was employed for the following reason. Many Ss selected Black very often during the first 10 trials. When they perceived that the other S favored Red, the S attempting to cooperate had no choice but to switch to Red; the payoff of two-two, of course, was preferable to ten-one. Thus, the
second criterion enables us to determine which Ss attempted to cooperate initially.

Mann-Whitney U tests were carried out to determine whether conformists and nonconformists differ in amount of Red choices over 30 trials; or Black choices on the first 10 trials. The results of these analyses are contained in Table 5 and Table 6.

Table 5
Differences in Conformity Scores Between Ss Who Attempted to Cooperate and Ss Who Did Not Attempt to Cooperate (Matched Pairs)

<table>
<thead>
<tr>
<th>Attempted</th>
<th>Did Not Attempt</th>
<th>U</th>
<th>z</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conformity</td>
<td>22.44 (19)</td>
<td>20.71 (23)</td>
<td>200.5</td>
<td>.455</td>
</tr>
</tbody>
</table>

*One-tailed test.

The results reported in Table 5 indicate that Ss who attempt to cooperate do not differ significantly in amount of conformity from Ss who do not attempt to cooperate.

Table 6
Differences in Amount of Red Selections Between Conformists and Nonconformists (Matched Pairs)

<table>
<thead>
<tr>
<th></th>
<th>Conformists</th>
<th>Nonconformists</th>
<th>U</th>
<th>z</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>22.31 (18)</td>
<td>20.8 (24)</td>
<td>200.5</td>
<td>.394</td>
<td>.35</td>
</tr>
</tbody>
</table>

*One-tailed test.

The results in Table 6 indicate that the nine pairs of conformists did not differ significantly from the 12 pairs of nonconformists in amount of Red choices. Thus, we can
conclude that there are no significant differences in the 
amount of cooperation in a two person, non-zero-sum game 
played by matched pairs of conformists and matched pairs of 
nonconformists.

Since I-E, n-Ach, and ST-D scores were available for 
all 42 Ss who played the game, non-parametric tests were 
carried out to determine whether these variables were related 
to performance in the game. Rank-difference correlations 
(Spearman's rho) were computed between the number of Red 
choices and scores on the I-E, n-Arch and ST-D measures. 
Table 7 contains the results of this analysis. One-tailed 
tests of significance were employed since it was expected 
that I-E, n-Ach and ST-D scores would all be positively 
correlated with number of Red choices.

Table 7

<table>
<thead>
<tr>
<th></th>
<th>I-E</th>
<th>n-Ach</th>
<th>Social-Trust</th>
<th>Projection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>.38*</td>
<td>.09</td>
<td>.17</td>
<td>.28**</td>
</tr>
</tbody>
</table>

*p = < .05.  
**p = < .01.

Table 7 indicates that scores on the Internal-External Control 
Scale and on the five Projection items are significantly 
correlated in the expected direction with the S's number of 
Red selections. The correlation of .17 between total scores 
on the ST-D Scale and number of Red fails to reach significance
at the .10 level. We can conclude that frequent selection of Red in the game is related to belief in external control and the use of projection as an ego-defense.

The correlation of .38 obtained between I-E control and the number of Red selected in the game, while not unexpected, represents nevertheless, a clear-cut and noteworthy demonstration of a relationship between a personality variable and performance in a two person game. Since such a relationship had not been convincingly demonstrated before, it was decided to test the stability of this correlation by running an additional 18 Ss in the game in order to increase the N to 60. This was accomplished in the following manner. Eighteen Ss signed up for an experiment in "decision making." The nine pairs of Ss played the game, and then filled out the I-E Scale and the ST-D scale. Rank-difference correlations were then recomputed between the number of Red selections and scores on the I-E scale and five Projection items (N=60). The correlations obtained are: .36 between Red and I-E (p < .101) and .25 between Red and Projection (p < .05). Mann-Whitney U tests were also carried out to determine whether Ss who attempt to cooperate (first 10 trials criterion) differ significantly in I-E Control and Projection scores from Ss who do not attempt to cooperate. Table 8 contains the results of this analysis.

The data, then, for I-E control and Projection are consistent and significant. Persons who have a strong
Table 8

Differences in Internal-External Control and Projection Between Ss Who Attempted to Cooperate and Ss Who Did Not Attempt to Cooperate

<table>
<thead>
<tr>
<th></th>
<th>Attempted</th>
<th>Did Not Attempt</th>
<th>U</th>
<th>z</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-E (Mean Rank)</td>
<td>25.82 (25)</td>
<td>33.84 (35)</td>
<td>319</td>
<td>1.75</td>
<td>.04</td>
</tr>
<tr>
<td>Projection (Mean Rank)</td>
<td>24.68 (25)</td>
<td>34.66 (35)</td>
<td>292</td>
<td>2.18</td>
<td>.01</td>
</tr>
</tbody>
</table>

*One-tailed test.

belief in "external control" and persons who tend to make frequent use of projection as an ego defense cooperate significantly less often in the game than persons with a strong belief in "internal control" and persons who make infrequent use of projection as an ego defense (Tables 7 and 8).

In order to test the stability and generality of these findings, an attempt was made to replicate the relationship between I-E and game performance with a new sample. One hundred and twenty male students enrolled in Introductory Psychology courses volunteered to participate in an experiment on "decision-making." The Ss appeared for the first session in groups of 5 to 12, and filled out the I-E Scale. Arrangements were then made to recontact the Ss for the second part of the experiment. Scores on the I-E Scale for these 120 Ss ranged from 0 to 59 with a mean of 22.14 and a standard deviation of 12.10. A group of 28 "internally controlled" Ss was obtained by selecting the Ss with the 28 lowest scores on the I-E Scale. A group of 30 "externally
controlled" Ss was obtained by selecting the Ss with the 30 highest scores on the I-E Scale. I-E scores for the "internally controlled" group ranged from 0 to 12. I-E scores for the "externally controlled" group ranged from 30 to 59. The Ss were then matched on the basis of their I-E scores so that there were 14 pairs of "internally controlled" Ss and 15 pairs of "externally controlled" Ss. Whenever possible, matching was between Ss with identical I-E scores.

The matched pairs then played the game. Instructions for the game were identical to those used previously. Upon completing the game, the Ss participated one at a time in the conformity situation. They then filled out Rotter's Incomplete Sentences Blank, College Form.

The hypotheses formulated for this part of the experiment are as follows. Matched pairs of internally controlled Ss attempt to cooperate in a two person game significantly more often than matched pairs of "externally controlled" Ss.

Conformists and nonconformists differ significantly in amount of attempted cooperation. The direction of this difference was not predicted.

Maladjustment (as measured by the ISB) is not related significantly to performance in the game.

Ss with strong dependency needs (as measured by the ISB) attempted to cooperate in a two person game significantly more often than Ss with weak dependency needs.

Scores on maladjustment ranged from 98 to 158 with a mean of 126.96. Dependency scores ranged from 6 to 34 with
a mean of 17.45. Conformity scores ranged from 0 to 12 with a mean of 4.51. ISB blanks could not be scored for two Ss because too many stems were left uncompleted; hence, statistical tests with ISB scores are based on Ns of 56 for dependency and maladjustment.

Table 9 contains the results of a U test carried out with respect to differences between "internally controlled" and "externally controlled" Ss in amount of red selections.

**Table 9**

Differences in Amount of Red Selections Between Internal and External Controlled Ss (Matched Pairs)

<table>
<thead>
<tr>
<th></th>
<th>Internal Controlled</th>
<th>External Controlled</th>
<th>U</th>
<th>z</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red (Mean Rank)</td>
<td>28.98 (28)</td>
<td>29.96 (30)</td>
<td>406</td>
<td>.218</td>
<td>.41</td>
</tr>
</tbody>
</table>

*One-tailed test.

The results contained in Table 9 indicate that matched pairs of "internally controlled" Ss do not cooperate significantly more often than matched pairs of "externally controlled" Ss.

A U test was also carried out to compare internally and externally controlled Ss for differences in amount of attempted cooperation (first ten trials criterion). Inspection of Table 10 indicates that the two groups do not differ significantly in amount of attempted cooperation. The results reported in Tables 9 and 10 constitute a failure to replicate the previously reported significant relationship (Tables 7 and 8) between I-E control and performance in the
game. Thus, significant differences between internally and externally controlled Ss occur when the Ss play the game unmatched on I-E control; significant differences between internally and externally controlled Ss are not obtained when the Ss play the game in matched pairs.

Table 10

Differences in Internal-External Control Scores Between Ss Who Attempted to Cooperate and Ss Who Did Not Attempt to Cooperate (Matched Pairs)

<table>
<thead>
<tr>
<th></th>
<th>Attempted</th>
<th>Did Not Attempt</th>
<th>U</th>
<th>z</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-E</td>
<td>29.55 (27)</td>
<td>29.45 (31)</td>
<td>417</td>
<td>.023</td>
<td>.49</td>
</tr>
</tbody>
</table>

*One-tailed test.

The second hypothesis on this sample stated that conformists and nonconformists differ significantly in amount of attempted cooperation. Here the Ss were not matched on the conformity variable. A rank-difference correlation between conformity scores and number of Reds selections in the game yielded a rho of -.20 (N=58), significant at the .12 level, two-tailed test. Ss who attempted to cooperate were also compared to Ss who did not attempt to cooperate for possible differences in conformity scores (Table 11).

Table 11

Differences in Conformity Scores Between Ss Who Attempted to Cooperate and Ss Who Did Not Attempt to Cooperate

<table>
<thead>
<tr>
<th></th>
<th>Attempted</th>
<th>Did Not Attempt</th>
<th>U</th>
<th>z</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conformity</td>
<td>36.31 (27)</td>
<td>23.56 (31)</td>
<td>234.5</td>
<td>2.87</td>
<td>.005</td>
</tr>
</tbody>
</table>

*Two-tailed test.
The correlation of -.20 indicates a tendency for conformists to select Red less often than nonconformists. The results reported in Table 11 indicate that Ss who attempted to cooperate have significantly higher conformity scores than Ss who did not attempt to cooperate. Thus, no differences in amount of attempted cooperation were obtained when conformists and nonconformists played the game as matched pairs; significant differences were obtained between conformists and nonconformists when the Ss were not matched on the conformity variable.

The third hypothesis stated that maladjustment scores are not related to performance in the game. Table 12 contains the results of a U test carried out to determine whether differences in ISB maladjustment scores are related to attempted cooperation in the game.

Table 12

Differences in ISB Maladjustment Scores Between Ss Who Attempted to Cooperate and Ss Who Did Not Attempt to Cooperate

<table>
<thead>
<tr>
<th></th>
<th>Attempted</th>
<th>Did Not Attempt</th>
<th>U</th>
<th>z</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maladjustment</td>
<td>26.13(26)</td>
<td>29.67 (30)</td>
<td>328.5</td>
<td>818</td>
<td>.42</td>
</tr>
<tr>
<td>(Mean Rank)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Two-tailed test.

Table 12 indicates that degree of maladjustment is not related to attempted cooperation in the game.

The fourth hypothesis stated that Ss with strong dependency needs will attempt to cooperate significantly more often than Ss with weak dependency needs. Table 13 contains the results of a U test with respect to differences in ISB
dependency scores between Ss who attempted to cooperate and Ss who did not attempt to cooperate.

Table 13

Differences in ISB Dependency Scores Between Ss Who Attempted to Cooperate and Ss Who Did Not Attempt to Cooperate

<table>
<thead>
<tr>
<th>Dependency (Mean Rank)</th>
<th>Attempted (Mean Rank)</th>
<th>Did Not Attempt (Mean Rank)</th>
<th>U</th>
<th>Z</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.34 (26)</td>
<td>26.90 (30)</td>
<td></td>
<td>342</td>
<td>.789</td>
<td>.21</td>
</tr>
</tbody>
</table>

*One-tailed test.

Inspection of Table 13 indicates that a slight, though insignificant tendency exists for dependent Ss to attempt to cooperate more than non-dependent Ss.

A U test was also carried out to determine whether dependency is related to the number of Red selections in the game. The results of this analysis are presented in Table 14.

Table 14

Differences in Amount of Red Between High and Low Dependent Subjects

<table>
<thead>
<tr>
<th>High Dependency (16 or more)</th>
<th>Low Dependency (15 or less)</th>
<th>U</th>
<th>Z</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.74</td>
<td>31.92</td>
<td>302</td>
<td>1.41</td>
<td>.08</td>
</tr>
</tbody>
</table>

*One-tailed test.

Table 14 indicates, as predicted, that Ss with strong dependency needs select Red less often (.08 level) than Ss with weak dependency needs. Thus, the data in Tables 13 and 14 tend to support the hypothesis linking differences in dependency needs to performance in a two-person game.
U tests were also carried out to determine whether differences in conformity and I-E control are related to dependency needs. One-tailed tests were used since it was expected that both conforming and externally controlled Ss would score high on dependency (Tables 15 and 16).

Table 15

Differences in Dependency Scores Between Internal and External Controlled Subjects

<table>
<thead>
<tr>
<th></th>
<th>Internal Controlled</th>
<th>External Controlled</th>
<th>U</th>
<th>z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependency</td>
<td>21.85 (26)</td>
<td>34.27 (30)</td>
<td>217</td>
<td>2.84</td>
<td>.002</td>
</tr>
</tbody>
</table>

The data in Table 15 strongly confirms the prediction; externally controlled Ss tend to have strong dependency needs whereas internally controlled Ss tend to have weak dependency needs.

Table 16

Differences in Dependency Scores Between Conforming and Nonconforming Subjects

<table>
<thead>
<tr>
<th></th>
<th>Conforming (3-12)</th>
<th>Nonconforming (0-2)</th>
<th>U</th>
<th>z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependency</td>
<td>29.29 (27)</td>
<td>27.65 (29)</td>
<td>368.5</td>
<td>.38</td>
<td>.35</td>
</tr>
</tbody>
</table>

Table 16 indicates that conformists and nonconformists do not differ significantly in the strength of their dependency needs.
CHAPTER V

DISCUSSION

In formulating the hypotheses which sought to link differences in conforming behavior to a number of personality variables, cognizance was taken of the fact that performance in a given situation can serve to satisfy any one or several of a variety of needs. Every individual, in effect, categorizes a particular situation on the basis of available cues as one in which certain behaviors will lead to desired goals or satisfactions. Such categorizations need not be determined solely by objective cues. Often, strong or pressing needs can override reality considerations and impose "meaning" where such "meaning" is objectively lacking or not appropriate. Thus, with respect to the conformity situation, each person was faced with the conflict of having to decide whether "going along with the others" or "saying what was heard" was the most preferred behavior in the situation, i.e., the behavior which would provide maximum satisfaction via reduction of the conflict. For some subjects, the situation was construed as one in which "being right" and hence nonconforming was the preferred course. Other subjects resolved the conflict by "going along with the others" and hence conformed. The significant negative
relationship obtained between need achievement and conforming behavior indicates that persons who place a marked emphasis on successful competition with standards of excellence are resistant to simulated group pressure when such resistance is instrumental in satisfying the need to be "right" or "mentally alert." By definition, high need achievers are motivated to be successful and presumably such persons have had their expectations of success confirmed in the past. Thus, their expectations about achievement situations should be both general and stable, sensitizing them to the achievement cues in the conformity situation. It will be recalled that the experimenter sought to engage the achievement motive in the situation by calling the subject's attention to the "relationship between performance in the task and mental alertness." In addition, the subjects were requested to do as well as they could. Over-all, the obtained relationship between need achievement and conformity not only confirms the previous finding of Atkinson, but supports the more general hypothesis that meaningful relationships between need strength and overt behavior can be predicted when the subject's expectancies are taken into account.

The above interpretation is based on the assumption that tendencies toward conformity are not fixed personality traits which operate irrespective of the situation, but that conforming responses are a function of personality variables interacting with different situational conditions. This
analysis can be applied to Atkinson's data despite the fact that need achievement was not a relevant variable in Asch's original studies. The subjects in Asch's experiments (TAT protocols were available for these subjects, and were later scored by Atkinson for need achievement) made judgments about perceptual stimuli in a situation in which the experimenter stressed "accuracy" (5, p. 452). Such instructions apparently were capable of arousing the achievement motive, and led to Atkinson's obtaining a significant negative relationship between need achievement and conforming responses. It may be that Samelson failed to find a relationship between need achievement and conformity because his instructions to the subjects failed to arouse the appropriate need. Since Samelson does not report the exact content of the instructions given to his subjects, this latter point is only suggestive.

We might speculate at this point as to whether common developmental precursors exist which might link need achievement to the independence--yielding variable. Winterbottom's research (44) on the relationship of parental rearing techniques to children's achievement motivation seems highly relevant. Winterbottom demonstrated that boys who are high in need achievement have mothers who provide early training and emphasis on autonomous behavior and "mastery," as compared to the relatively late emphasis placed on these factors by the mothers of boys who are low in need achievement. This
finding indicates that boys who are found to be high need achievers have internalized a relatively enduring motive at an early age. The early internalization of motives, plus the emphasis placed on autonomy and "mastery" should provide the basis for later "inner-directed" behavior. This analysis is of course very similar to that of Riesman who uses the phrase "inner-directed" almost synonymously with nonconformity.

The significant relationship obtained between the subject's ranking of the value Integrity and conforming behavior is also explicable in this light. Nonconforming persons attach great importance to making decisions they believe are right, regardless of the consequences. As noted by Asch, the independent person must be willing to stand alone and be open to criticism; such behavior places a premium on the possession of personal integrity. Conversely, a slight tendency was found for nonconformists to minimize the value of following the advice of others solely because these others have led useful lives or have more experience.

The failure of the values of Affiliation, and Status to yield significant relationships with conformity can probably be most easily attributed to the influence of the "social-desirability" factor. Little variability occurred among the subjects with respect to the ranking of Affiliation and Status; most subjects ranked Affiliation fifth or sixth and Status third or fourth. As is frequently the case with self-report techniques, many subjects probably responded to the
values by ranking them so as to present themselves in the best light. This relative lack of variability in the rankings would appear to make the relationship between Integrity and conformity all the more meaningful.

The findings do not provide any conclusive evidence about the relationship between social trust and conformity. In formulating the hypothesis, the direction of the relationship between these variables was not formally predicted. The most reasonable prediction, though, would be for social trust scores to be negatively correlated with conforming responses, i.e., people who are lacking in the capacity for social trust could be expected to be nonconforming. If a person is suspicious about the intent of meaning of other people's behavior, and if he perceives the world as potentially or actually harmful, such a person is likely to maintain considerable distance from others and reject their opinions and judgments. The correlations obtained are indicative of such a trend. Conforming responses are correlated -.13 with total social distrust scores, and -.22 (.07 level) with the 11 obvious items on the scale.

If this relationship is a meaningful one, then the question remains as to why the magnitude of the correlations is so low. At least two possibilities seem tenable. First, no attempt was made to disguise the meaning of the items in the ST-D scale. The subjects undoubtedly understood that agreement with the items implied the acceptance of "atypical"
points of view. In effect, responses can probably be easily faked in order to "look good." Thus, while we can be reasonably certain that high scores represent distrust of others, we cannot determine the exact meaning of low scores, many of which could be "false negatives." Some evidence for the "fakability" of the ST-D scale is indicated by the fact that the distribution of scores was slightly skewed toward the low end. This seeming failure of the scale to discriminate "true" from "false" lows would of course attenuate any correlations between the scale and other measures.

Second, there is the question whether social trust as defined in this study is actually operative in an Asch-type situation. This touches directly upon the problem of the generality of the Asch situation with respect to "real-life" social interactions. Neither the present conformity situation nor that of Asch utilizes a typical social setting. Lacking among the members of "simulated social groups" are enduring relationships, a common purpose and continuous association. Quite possibly, social trust is not more highly correlated with conforming responses in a simulated group situation because the meaning and function of one's "membership" in such a group is not at stake. Pending any evidence to the contrary, it appears safe to assume that "true" social groups differ in kind from the simulated groups set up for research purposes. This would argue for extreme caution in any
attempt to generalize findings on conformity beyond the simulated group situation.

No relationship was found between conformity and belief in internal or external control. The absence of appropriate data does not permit us to account unequivocally for this complete lack of relationship. One can speculate, however, as to possible sources of this finding. Belief in internal or external control is significantly correlated with both total scores on the ST-D scale (.42) and with the five Projection items (.22). Internal-external control is also very highly related to the ISB measure of dependency. Thus, persons who believe in external control are likely to be socially distrustful or dependent on others, or both. In the conformity situation, then, as a function of how they categorize the situation, the subjects may attempt to satisfy needs related to the distrust orientation or needs related to dependency. As a consequence, the externally controlled subjects who respond in terms of their distrust of others should resist the pressure. The externally controlled subjects who respond in terms of "help-seeking" should yield to the pressure and go along with the others. Our inability to demonstrate any relationship between belief in internal or external control and conformity then, may be a reflection of our failure to consider the influence of these other need-satisfaction sequences in the situation.
The findings with respect to the relationship of the personality measures to performance in the game are ambiguous and difficult to interpret. The game was chosen as a behavioral task because it constituted a micro-social situation which permitted the development of either conflict or cooperation in the context of making decisions among alternatives whose outcomes were fully known to the participants. The game appears to have served ideally for this purpose. Without exception the subjects understood the consequences of selecting Red or Black, and were able, in most instances, to verbalize at the end of the game their reasons for playing as they did.

Before attempting any analysis of the relationship of the personality measures to performance in the game, we might consider, descriptively, how the subjects actually played the game. Out of a total of 118 subjects (59 pairs) who played the game, only four pairs developed a stable Black-Black strategy. Red was by far the most frequent selection (Red was selected 64 percent of the time) despite the fact that in the long run, joint monetary return is maximized by selecting Black. The subjects undoubtedly understood what they were doing since many of them stated at the end of the game that they "tried to beat" the other person. The one consistent interpretation of this behavior is to attribute it to the subject's desire to maximize the difference between his payoff and that of the other player. A subject who selected
Black had no way of making more than the other subject \((8,8)\) whereas he could have received less \((1,10)\). A subject who selected Red could never receive less than the other person \((2,2)\) and he might receive more \((10,1)\). Thus, the subjects almost uniformly played the game competitively in order to win more, or avoid winning less than the other person. This competitive set with which the subjects played was so determinative of performance, that many subjects persisted in the selection of Red despite the repeated occurrence of two-cent payoffs to each. The subjects apparently were content to receive two cents repeatedly because this payoff is a "standoff," i.e., neither subject makes less than the other. These results very clearly cast doubt on the predictive utility of normative game theories which attempt to predict what people ought to do. Such theories evaluate the utility of a non-zero sum game in terms of maximizing monetary return. The concept of "rational man" who makes decisions on the basis of purely economic considerations seems inadequate to explain the performance we observed in a two-person non-zero sum non-cooperative game. On the other hand, the players may be viewed as "rational" if we define rationality in terms of subjective utility, i.e., the subject's purpose or goal is to maximize the difference between payoffs. The present findings argue for the necessity of including psycho-social variables in formal game theory if such theories are to have predictive utility.
As noted above, the relationships obtained in the study between the psychological variables and performance in the game are difficult to interpret without ambiguity. The extent of a person's belief in internal or external control was related significantly to performance in the game when the subjects were unmatched on the I-E variable. The nature of this relationship is consistent with the basic definition of I-E control. Persons who perceive the world as orderly and predictable (Internal control) did attempt to cooperate in the game more often than persons who view the world as chaotic and governed by the chance occurrence of events. In addition, a person who frequently selects Black must have "faith" in the other person, i.e., he must trust him to push Black. The results are also consistent on this point: internally controlled subjects are significantly more trusting of others than externally controlled subjects. Subjects with low scores on projection also attempted to cooperate significantly more often than subjects with high projection scores.

It was expected that matching the subjects for I-E scores would result in even more dramatic differences in game performance between internally and externally controlled subjects. Contrary to what was expected, I-E control was not related to game performance in the second sample where the subjects played as matched pairs. The results for the conformity variable were similar. No differences were obtained between conformists and nonconformists when they played as
matched pairs; significant differences were obtained when the subjects were unmatched for conformity scores. Apparently, matching the subjects makes a difference, although the present data do not enable us to understand how the factor of "matching" operates to negate the differences obtained when the subjects play unmatched.

Additional research presently being carried out indicates that conformity is related to performance in a non-zero sum game. In this study, the Barron Independence of Judgment Scale was used to measure conformity. The results indicate that independent subjects (unmatched for independence scores) select Red significantly more often than yielders, a finding which supports that reported in this study. The finding that conformists make fewer Red selections than nonconformists is contrary to our original hypothesis. These results are understandable, however, if we recall that the repeated selection of Red is equivalent to playing the game competitively, i.e., aggressively attempting to beat the other person. If we view the conformist as inhibited (13), submissive (20), and therefore unwilling to alienate others by behaving in an aggressive, competitive manner, than the finding that conformists try to cooperate seems explicable. Some additional support for this view is provided by the fact that dependent subjects (ISB measure) select Red less often than non-dependent subjects.
Over-all, the present findings do not provide any support from Fromm's conception of the nonconformist as a cooperative individual. On the contrary, the nonconformists were not only noncooperative in the game, but also are achievement or competitively oriented in general as indicated by the significant negative relationship obtained between n-Ach and conformity. While these results are interpreted as providing support for the view that conformists and nonconformists do behave differently in situations where group pressure is not a relevant variable, it seems equally clear that additional research is necessary to clarify the relationship between conformity, I-E control and performance in a non-zero-sum game.
CHAPTER VI

SUMMARY AND CONCLUSIONS

This study had two purposes. First, an attempt was made to obtain data relevant to several hypotheses which sought to relate conformity-nonconformity to the personality variables of need achievement, social trust, internal-external control and personal value orientations. Second, the behavior of conformists and nonconformists was investigated in a situation where group pressure was not a relevant variable. A simulated group situation based on a modification of the "Asch technique" served as the measure of conformity. A two-person non-zero sum non-cooperative game which permitted the development of either conflict or cooperation in the context of making decisions among alternatives whose outcomes were fully known to the participants served as the behavioral situation which did not involve group pressure.

The TAT-fantasy test of McClelland was used to measure the strength of the subject's achievement motivation. A 50 item Likert-type scale consisting of 20 items from the Pa scale of the MMPI and the five items comprising the Projection cluster of the California F-Scale was used to measure the extent of a subject's distrust of other people.
Liverant's I-E scale was used to measure the degree of the subject's belief in **internal or external control** of events and behavior. Internal control was defined as the belief that events are understandable and predictable, and hence one can assume responsibility for one's behavior. External control was defined as the belief that events are unpredictable and that what happens in life is a matter of chance or fate. A ranking procedure was used to determine the importance the subjects attach to the **six value orientations** of Affiliation, Authoritarian Submission, Altruism, Hedonism, Integrity, and Status.

A task not involving group pressure was derived from formal Game Theory to measure overt attempts at **cooperation** in a two-person game. The subjects played the game in pairs. Each member of the pair was required to push a switch toward either Red or Black on each of 30 trials. Money was paid to each subject after each trial according to the following payoff matrix:

\[
\begin{array}{cc}
\text{Yb} & \text{Yr} \\
\text{Xb} & 8,8 & 1,10 \\
\text{Xr} & 10,1 & 2,2 \\
\end{array}
\]

Two criteria served as indices of attempted cooperation: infrequent selection of Red; and the selection of Black by a subject at least five times on the first 10 trials with two of the Black selections occurring successively.
The following hypothesis were proposed:

1. In an "Asch-type" situation, social-trust is significantly related to conforming behavior.

2. In an "Asch-type" situation employing unambiguous task stimuli, the amount of conformity behavior is inversely related to the strength of need Achievement.

3. In an "Asch-type" situation, degree of belief in internal or external control is significantly related to conforming behavior.

4. Nonconformists attach greatest importance to Integrity and Status, whereas conformists attach greatest importance to Affiliation and Authoritarian Submission.

5. Nonconformist subjects playing a non-zero sum game in pairs cooperate significantly more often than pairs of conformist subjects.

The experiment was divided into three parts. Ninety-two subjects participated in Part I where they were administered the TAT-fantasy measure of need Achievement, the Social Trust-Distrust Scale and the six values for ranking. Sixty-eight of these 92 subjects participated in Part II where they filled out the I-E scale and participated one at a time in the conformity situation. In Part III, 42 subjects played the game. Prior to playing the game the subjects were matched on the basis of their conformity scores so that 12 pairs of nonconformists and 9 pairs of conformists played.
The results obtained were interpreted as follows. A significant relationship \( r = -0.32 \) was obtained between conformity scores and scores on need achievement. This was interpreted as reflecting the high need achievers sensitivity to the achievement cues in the conformity situation which in turn led to a desire to be "correct" and hence nonconforming in the situation.

Nonconforming subjects ranked the value of Integrity first or second significantly more often than conforming subjects. A slight tendency was found for nonconformists to rank Authoritarian Submission fifth or sixth more often than conformists. These findings were attributed to the willingness of nonconformists to "stand alone" and be open to criticism. By valuing personal integrity and rejecting submission to authority the nonconformist is able to justify his independence of others.

Low and barely significant correlations were obtained between the conformity scores and total and component scores on the social-trust scale. The direction of the trends indicate that nonconformists tend to be distrusting of other people. It was suggested that the social-trust scale's lack of disguise and hence easy "fakability" may have attenuated the relationship between social-trust and conformity. It was also noted that a simulated group situation prohibits the development of any meaningful relationship with the "other subjects," thus restricting the generality of Asch-type situations in comparison to "real-life" social groups.
No relationship was found between conformity and belief in internal or external control. The influence of other need-satisfaction sequences was suggested as a possible source of this negative finding. Scores on the I-E Scale were significantly correlated (.42) with scores on the social trust scale, indicating that externally controlled subjects are distrustful of others.

Non-parametric statistics were used to analyze the relationship of performance in the game to the personality variables. No differences were obtained between conformists and nonconformists in amount of attempted cooperation in the game when the subjects played matched on the conformity variable. Internally controlled subjects, however, attempted to cooperate significantly more often than externally controlled subjects. In addition, subjects with low projection scores attempted to cooperate significantly more often than subjects with high projection scores. An additional 18 subjects were run in the game to test the stability of these findings. A re-analysis of the data based on an N of 60 yielded similar results.

An attempt was then made to extend and replicate the relationship between I-E control and attempted cooperation. A new sample of 120 subjects was obtained. The 120 subjects filled out the I-E Scale. A group of 30 externally controlled subjects was obtained by selecting the subjects with 30 highest I-E scores. A group of 28 internally controlled subjects were then matched on the basis of I-E scores so that
there were 14 pairs of internally controlled subjects and 15 pairs of externally controlled subjects. After playing the game as matched pairs, the subjects participated one at a time in the conformity situation and then filled out Rotter's ISB. The ISB was scored for maladjustment and dependency.

The following hypotheses were formulated for this part of the experiment:

1. Matched pairs of internally controlled subjects attempt to cooperate in a non-zero sum game significantly more often than matched pairs of externally controlled subjects.

2. Conformists and nonconformists differ significantly in amount of attempted cooperation.

3. Maladjustment is not related significantly to performance in the game.

4. Subjects with strong dependency needs attempt to cooperate in a non-zero sum game significantly more often than subjects with weak dependency needs.

The following results were obtained. Matched pairs of internally controlled subjects did not differ in amount of attempted cooperation from matched pairs of externally controlled subjects. Conformists attempted to cooperate significantly more often than nonconformists. Maladjustment was not related to performance in the game. Subjects with strong dependency needs attempted to cooperate more often than subjects with weak dependency needs. Thus, significant
differences between internally and externally controlled subjects were obtained when the subjects played unmatched on I-E control, but not when they played matched on this variable. Similarly, significant differences between conformists and nonconformists were obtained when the subjects played unmatched for conformity scores; no differences between conformists and nonconformists were obtained when the subjects were matched for conformity. Further research is necessary to clarify the effect of "matching" on performance in the game.

Additional research being carried out indicates that conformists (unmatched) attempt to cooperate significantly more often than nonconformists (unmatched). In this new research, Barron's Independence of Judgment Scale was used to measure conformity. This latter finding supports the results of this study and was interpreted as reflecting the conformists inability to act in an aggressive, competitive manner because of strong tendencies toward passivity and submission.

A descriptive analysis of performance in the game without regard to the personality variables indicated that only four out of 59 pairs of subjects developed a stable Black-Black strategy in the game. Many subjects selected Red despite the repeated occurrence of two cent payoffs to each. This behavior was attributed to the subject's desire
to maximize the difference between his payoff and that of the other player, i.e., the subjects played competitively so as to beat the other player. This finding casts doubt on the usual normative assumption that people will play a non-zero sum game so as to maximize monetary return.
APPENDIX A
COLLEGE STUDENT ATTITUDE-OPINION SURVEY

Name _____________________________ Age _______ Date ____________

Major Subject ____________________________________________________

Instructions

Below are a number of statements about various topics. They have been collected from college students and represent a variety of attitudes and opinions. There are no right or wrong answers to this questionnaire; for every statement there are large numbers of people who agree and disagree. Please indicate whether you agree or disagree with each statement as follows:

Circle SA if you strongly agree
Circle A if you agree
Circle D if you disagree
Circle SD if you strongly disagree

Please reach each item carefully and be sure that you indicate the response which most closely corresponds to the way which you personally feel.

SA  A  D  SD  1. I like to read newspaper editorials whether I agree with them or not.

SA  A  D  SD  2. I sometimes think I get a raw deal from life.

SA  A  D  SD  3. Money shouldn't be a person's main consideration in choosing a job.

SA  A  D  SD  4. No one seems to understand me.

SA  A  D  SD  5. I enjoy reading a good book more than watching television.

SA  A  D  SD  6. I am more sensitive than most other people.

SA  A  D  SD  7. I find mathematics easier to study than literature.

SA  A  D  SD  8. Most people are honest chiefly through fear of being caught.

SA  A  D  SD  9. I get more ideas from talking about things than from reading about them.

SA  A  D  SD 10. If people had not had it in for me I would have been much more successful.
11. I disapprove of girls who smoke in public.
12. I think nearly anyone would tell a lie to keep out of trouble.
13. I think that everyone should have a hobby of some kind.
14. I am sure I am being talked about.
15. I believe it is more important for a person to like his work than to make a lot of money at it.
16. Most people inwardly dislike putting themselves out to help other people.
17. Life in a small town offers more real satisfactions than life in a large city.
18. I think most people would lie to get ahead.
19. I think the world is much more unsettled now than it was in our grandfather's time.
20. I tend to be on my guard with people who are somewhat more friendly than I had expected.
21. I would rather win than lose in a game.
22. I feel that I have often been punished without cause.
23. I think it is more important to be respected by people than to be liked by them.
24. Even when I am with people I feel lonely much of the time.
25. I believe that the U.S. needs a more conservative foreign policy.
26. Most people would use somewhat unfair means to gain profit or an advantage rather than lose it.
27. I frequently put off until tomorrow what I ought to do today.
28. I know who is responsible for most of my troubles.
Hollywood movies do not seem as good as they used to be.

Nowadays when so many different kinds of people move around and mix so much, a person has to protect himself especially carefully against catching an infection or disease from them.

I believe the government should encourage more young people to make science a career.

Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.

To get ahead in the world one must be willing to gamble on uncertainties.

Nowadays more and more people are prying into matters that should remain personal and private.

People ought to avoid the expression of hostility in face to face situations.

The man who provides temptations by leaving valuable property unprotected is about as much to blame for its theft as the one who steals it.

I like to volunteer my car to take people places even if it is out of my way.

Wars and social troubles may some day be ended by an earthquake or flood that will destroy the whole world.

I like to discuss and evaluate the competence of others.

I have no enemies who really wish to harm me.

I think it is important that people work hard to acquire the social graces.

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.
I like to attempt to persuade people to my political point of view.

My mother or father often made me obey even when I thought that it was unreasonable.

Going on lots of dates is a sign of social maturity.

Most people don't realize how much of our lives are controlled by plots hatched in secret places.

In grade school it is more important to emphasize cooperation rather than academic accomplishment.

Once in a while I think of things too bad to talk about.

I enjoy gambling for small stakes.

I think that I feel more intensely than most people do.
SOCIAL REACTION INVENTORY

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief; obviously there are no right or wrong answers.

TURN TO NEXT PAGE
Your answers to the items on this inventory are to be recorded on a separate answer sheet which is loosely inserted in the booklet. Remove THIS ANSWER SHEET NOW. Print your name and any other information requested by the examiner on the answer sheet, then finish reading these directions. Do not open the booklet until you are told to do so.

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. Find the number of the item on the answer sheet and black-in the space under the letter A or B which you choose as the statement most true.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.

REMEMBER

Select that alternative which you personally believe to be more true.
I more strongly believe that:

1. a) if luck is with me, I can really write a good exam paper.
   
   b) if I am alert, I can usually figure out what is going to be asked on an exam.

2. a) I would be surprised if I discovered that social success is mostly a matter of chance.
   
   b) in our society social recognition has little to do with ability.

3. a) whether or not I have (used to have) a good time on a date depends upon whom I'm lucky enough to be with.
   
   b) a person's attractiveness depends upon how he acts.

4. a) quite often leaders are examples of the fact that it's not skill that counts but the breaks you get.
   
   b) there usually is a direct connection between ability and leadership roles.

5. a) by studying the world situation one can significantly increase their political effectiveness.
   
   b) whether one likes it or not, it is wise to accept the fact that chance plays an awfully large part in world events.

6. a) I think that life is largely a matter of knowing what you want and going after it.
   
   b) life is largely a gamble.

7. a) my failures in school are usually the result of inadequate effort and poor planning, not circumstances.
   
   b) it is hard to understand why one does poorly in certain courses and well in others.

8. a) making a lot of money is largely a matter of getting the right breaks.
   
   b) promotions are earned through hard work and persistence.
I more strongly believe that:

9. a) in my case making friends depends on how hard I work at it, luck has little or nothing to do with it.

b) making friends is a funny business, it is so dependent on the right combination of circumstances.

10. a) some people seem to be born leaders, others seem destined to be followers.

b) leadership is not a matter of fate but must be acquired through effort.

11. a) I feel increasingly helpless in the face of what is happening in the world today.

b) I sometimes feel personally to blame for the sad state of affairs in our government.

12. a) there's not much use in worrying about things...what will be, will be.

b) when things don't go well I try to figure out what I have done wrong.

13. a) many times the reactions of teachers seem haphazard to me.

b) in my experience I have noticed that there is a usually direct connection between how hard I study and the grades that I get.

14. a) getting ahead in life depends upon knowing what you want and going after it.

b) many times salary tends to be so unrelated to ability that working hard seems pretty futile.

15. a) I might as well choose my friends by flipping a coin.

b) making friends is like making money, one must know how to go about it.
I more strongly believe that:

16. a) by figuring out people, I can often get them to do what I want.
    
b) getting people to do the right thing is a funny business; it is so dependent upon chance circumstances.

17. a) active discussion of politics can ultimately lead to a better world.
    
b) the international situation has become so complex that it is almost impossible to know what is the right course of action to take.

18. a) when I make plans, I am almost certain that I can make them work.
    
b) it is not wise to plan too far ahead because most things turn out to be a matter of good or bad fortune anyhow.

19. a) it is up to the student who doesn't do well to figure out why.
    
b) it is often impossible to predict how well I'm doing in a course.

20. a) to get ahead these days one has to be lucky.
    
b) in the long run respect is given to those who earn it.

21. a) a happy marriage depends to a large extent on the ability of both partners to understand each other.
    
b) finding the right partner in marriage is mostly luck.

22. a) through discussion I can change other people's opinions.
    
b) whether or not a person will do what I want, depends mostly on how he happens to feel at the time.

23. a) political events seem to be beyond the control of most people.
    
b) economic depressions are caused by people engaging in stupid economic behavior.
I more strongly believe that:

24. a) I have usually found that what is going to happen will happen, regardless of my actions.

b) trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

25. a) once a teacher gets down on me there is little I can do to change things.

b) 90 per cent of the time when a teacher criticizes a student it is justified.

26. a) as far as I am concerned becoming a success in our society is a matter of struggle, luck has little or nothing to do with it.

b) getting a good job largely depends upon being in the right place at the right time.

27. a) marriage is largely a gamble.

b) the number of divorces indicates that more and more people are not trying to make their marriages work.

28. a) it is silly to think that one can really change another person's basic attitudes.

b) when I am right I can convince others.

29. a) with enough effort we can wipe out political corruption.

b) it is difficult for people to have much control over the things politicians do in office.

30. a) most people don't realize the extent to which their lives are controlled by accidental happenings.

b) there really is no such thing as "luck."
I more strongly believe that:

31. a) in most cases the student, not the teacher, determines the grade.

   b) it seems many times that the grades one gets in school are more dependent on the instructor's whoms than on what a student can really do.

32. a) getting promoted is really a matter of being a little luckier than the next guy.

   b) in our society a man's future earning power is dependent upon his ability.

33. a) people are lonely because they don't know how to be friendly.

   b) making friends is largely a matter of being lucky enough to meet the right people.

34. a) changing people's opinions is often a hard job, but with enough effort it can be done.

   b) in general other people will do as they please in spite of my efforts to get them to listen to me.

35. a) as far as international affairs are concerned, most of us are the victims of forces we cannot understand, let alone control.

   b) by active participation in political and social affairs the people can control world events.

36. a) people are responsible for their actions, both good and bad.

   b) many people could be described as victims of circumstances beyond their control.

37. a) if one gets the right teacher he can do well, otherwise it is hopeless.

   b) the marks I get in class are completely my own responsibility.
I more strongly believe that:

38. a) popularity depends on knowing how to get people to admire you.
    b) some people are just naturally popular--others aren't.

39. a) some people are just luckier than others when it comes to making friends.
    b) my own choices determine the kind of friends I have.

40. a) I have little influence over the way other people behave.
    b) if one knows how to deal with people they are really quite easily led.

41. a) changing social attitudes is a tremendous undertaking, but every little bit helps.
    b) people being the way they are, some form of racial prejudice is inevitable.

42. a) most people can't really be held responsible for themselves since no one has much choice about where he was born or raised.
    b) people are usually the victims of their own poor planning, not circumstances.

43. a) if one wants to badly enough, he can overcome almost any obstacle in the path of academic success.
    b) some teachers will give you a poor grade no matter how hard you work.

44. a) some people seem born to fail while others seem born for success, no matter what they do.
    b) able people who don't become successful have failed to take advantage of their opportunities.
I more strongly believe that:

45. a) the old saying, "the fault lies in yourself," is particularly true in those instances where people become angry with you.

b) whether or not a person likes me is largely a matter of chance.

46. a) my effectiveness in influencing what others will do depends on how hard I work at it, luck has little or nothing to do with it.

b) I often can't understand how it is possible to get people to do what you want.

47. a) it is only wishful thinking to believe that one can really influence what happens in society at large.

b) people like me can change the course of world affairs if we make ourselves heard.

48. a) what happens to me is my own doing.

b) most of the disappointing things in my life have contained a large element of chance.

49. a) sometimes I feel that I have little to do with the grades I get.

b) in my case the grades I make are the result of my own efforts, luck has little or nothing to do with it.

50. a) if one just follows his own convictions he can get people to respect and admire him.

b) respect and admiration depends to a large extent on the whims of fickle people.

51. a) I sometimes feel that whether or not people like me has little or nothing to do with the way I behave.

b) my ability to predict how others will react enables me to get along better than most people.
I more strongly believe that:

52. a) to a large extent who gets to be a leader depends on the whims of the group.
   b) leadership comes to those who work for it.

53. a) the average citizen can have an influence in government decisions.
    b) this world is run by the few people in power, and there is not much the little guy can do about it.

54. a) a great deal that happens to me is probably a matter of chance.
    b) I am the master of my fate.

55. a) in the case of the well prepared student there is rarely if ever such a thing as an unfair test.
    b) many times exam questions tend to be so unrelated to course work, that studying is really useless.

56. a) gaining recognition in our society is largely a question of being around the right people at the right time.
    b) a person's status is determined by how much he contributes to the group.

57. a) anyone can have good friends if he knows how to interact with people.
    b) being able to get along with people seems to be more a matter of the other person's moods and feelings at the time rather than one's own actions.

58. a) there are many ways to influence people's decisions, but one must be subtle in how he goes about accomplishing this.
    b) I don't really believe that one person can have much influence over another.
I more strongly believe that:

59. a) a major cause of wars is people's apathy concerning political affairs.
   
b) wars are inevitable, in spite of efforts to prevent them.

60. a) in any case getting what I want has little or nothing to do with luck.
   
b) many times we might just as well make our decisions by flipping a coin.

61. a) the marks I get in class are my own responsibility.
   
b) quite often whether or not one passes or fails a course is largely a matter of chance.

62. a) failure to gain the respect of others is usually an indicator of social incompetence.
   
b) it seems many times that the promotions one gets are more dependent on the employer's whims than on what an employee can really do.

63. a) people are lonely because they don't try to be friendly.
   
b) there's not much use in trying to please people, if they like you, they like you.

64. a) I have learned to accept the fact that without the right breaks one cannot be an effective leader.
   
b) able people who do not rise to positions of authority have failed to take advantage of their opportunities.

65. a) it has been mostly luck that we have stayed out of World War III as long as we have.
   
b) our political misfortunes are the result of our own mistakes.
I more strongly believe that:

66. a) much of the time the future seems uncertain to me.
    b) in spite of world catastrophes, etc., my personal life is quite predictable.

67. a) in the present academic system getting good grades has little relationship to real ability.
    b) grades are a good measure of a student's ability to learn.

68. a) it is silly to think that hard work is given its rightful recognition in our society.
    b) sooner or later a person's achievements are recognized.

69. a) no matter how hard you try, some people just don't like you.
    b) failure to have people like you is usually an indicator of ignorance in interpersonal relationships.

70. a) it is only the skilled individual who can get others to see the error of their ways.
    b) the power one person exercises over another is more a matter of the second person's weakness rather than anything the first person does.

71. a) there is nothing inevitable about the course of human affairs, the nature of society is what people like me make it to be.
    b) there's little use in worrying about the outbreak of war, what will be, will be.

72. a) people's misfortunes usually result from the mistakes they make.
    b) sometimes I feel that I don't have enough control over the direction my life is taking.
**I more strongly believe that:**

73. **a)** in the long run a person's academic ability can be accurately judged by the grades he gets.

   **b)** getting good grades seems to be largely a matter of being lucky enough to take the right course at the right time.

74. **a)** in the long run the socially undesirable or inadequate individuals reach their proper level in our society.

   **b)** there's little use in trying very hard since keeping one's job seems more dependent on economic conditions than on one's abilities.

75. **a)** getting along with people is a skill which must be practiced.

   **b)** it is almost impossible to figure out how to please some people.

76. **a)** a good many people in positions of authority are there largely as a matter of luck, rather than due to any special talents which they possess.

   **b)** if I expect people to take my advice, I must worry about how I give it.

77. **a)** most of the time the behavior of politicians is incomprehensible to me.

   **b)** in the long run the people are responsible for bad government on a national as well as on a municipal level.

78. **a)** I don't really believe that a person can be "master of his fate."

   **b)** in my experience I have noticed that there is usually a direct connection between what people do and what they get.
I more strongly believe that:

79. a) getting A grades is really a matter of being a little luckier than the next guy.
    b) it is highly improbable that an intelligent student who really studies hard will consistently fail.

80. a) if one gets the right boss, he can get promoted, otherwise it is hopeless.
    b) the perceptive individual can figure out how to get ahead.

81. a) it is hard to know whether or not a person really likes you.
    b) there is a direct connection between being a nice person and the number of friends one has.

82. a) in my case getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
    b) one must accept the fact that who dominates whom is largely a matter of who was lucky enough to get in the right position first.

83. a) my vote counts.
    b) up till now the communists have been pretty lucky.

84. a) people make their own luck.
    b) I can't understand how it is possible to predict other people's behavior.

85. a) all this talk about teachers being unfair to students is mostly nonsense.
    b) most students don't realize the extent to which their grades are controlled by accidental happenings.
I more strongly believe that:

86. a) for the most part, people who don't get ahead in life can only blame themselves.

b) in this unpredictable world, it's really unwise to work hard for long range promotions.

87. a) if I play my cards right I can get the people I like to like me.

b) many times I feel that I have little control over the way people react to me.

88. a) the difference between a leader and a follower is largely a question of chance.

b) the person who cannot accept responsibility is unable to be a leader.

89. a) somehow all the effort people put in trying to change social prejudices, doesn't seem to get anywhere.

b) in the long run people control the politicians, not vice versa.

90. a) many times I feel that I have little influence over the things that happen to me.

b) it is impossible for me to believe that chance or luck plays an important role in my life.

91. a) for the most part teachers give students what they have earned.

b) taking an objective test is a lot like gambling, if you're lucky you make the right choices.

92. a) popularity is achieved by figuring out what other people expect from you and acting accordingly.

b) popularity is so fickle and unpredictable that you might as well not try for it.
I more strongly believe that:

93. a) it's hard to understand why certain people like you and others don't.

b) when someone doesn't treat me right, I wonder what I did to offend that person.

94. a) it would surprise me to learn that a good many people in positions of authority are there largely as a matter of luck and not because of any special talents they have.

b) luck is an essential ingredient for rising to a position of authority.

95. a) it is silly to expect good things to occur, if one doesn't go out and make them happen.

b) on those days when the odds are against you, it just doesn't pay to try to do much of anything.

96. a) it is up to the person who isn't liked to figure out why.

b) people are so unpredictable, that it is hard to really get to know them.

97. a) there is no use in trying to figure out what makes one person a leader and another a follower, people just have to accept different roles in life.

b) a major characteristic of outstanding people is their ability to influence others.

98. a) in the long run the bad things that happen to us are balanced by the good ones.

b) most misfortunes are the result of lack of ability, or ignorance, or laziness, or all three.

99. a) I can do little to change whether or not people like me.

b) for the most part friendless people are responsible for their lack of friends.
I more strongly believe that:

100. a) it is impossible for me to believe that I have little or nothing to do with my personal destiny.

b) other people's decisions rather than mine are ultimately more important in what happens to me.

101. a) when things are going badly for me, I wait until my luck changes.

b) the really good things in life only come to those who are willing to work for them.
Achievement Imagery

Definition of Achievement Imagery (AI): A subject expresses achievement imagery when he expresses "concern over competition with a standard of excellence." That is, the goal of some individual in the story is to be successful in terms of competition with some standard of excellence. The individual may fail to achieve this goal, but the concern over competition with a standard of excellence still enables one to identify the goal sought as an achievement goal. The following criteria (A, B, C) are used to score for AI.

A. Competition with a standard of excellence: is perhaps most clear when one of the characters is engaged in competitive activity (other than pure aggression), where winning, or doing as well or better than someone else is the primary concern. Often, however, competition with a standard of excellence is evident in the concern of one of the characters with how well a particular task is being done, regardless of how well someone else is doing. Any use of adjectives of degree (good, better, best) will qualify as long as they evaluate the excellence of performance.

Sometimes the desire to win or do as well as or better than others is not explicitly stated, then (1) affective concern over goal attainment, and (2) certain types of
instrumental activity are considered as indicating that the
desire to compete successfully with a standard of excellence
is implicit in the story. Examples of (1) would be: "The
boy wins the essay contest and feels proud." "The boy loses
the contest and becomes bitter." "The boy anticipates the
glory that will be his if he should win." An example of (2)
would be "The boy is working very carefully on his essay."
"The boy is trying to do the job neatly and efficiently."
The latter may not involve any competition with others, but
meeting self-imposed requirements of good performance still
warrants a score for the presence of AI.

B. Unique accomplishment: One of the characters is
involved in accomplishing other than a run-of-the-mill daily
task which will mark him as a personal success. Inventions,
artistic creations, and other extra-ordinary accomplishments
fulfill this criterion. There need be no explicit statement
of concern over the outcome or direct statement that a good
job is wanted when someone is working on a new invention or
is in the process of doing something unique. Here we make
the inference that the individual is competing with a stan-
dard of excellence, and that unless his goal is reached he
will also experience feelings of failure. Examples are:
"The men are doing research. This is the crucial test. They
have invented a new process. This is a real step forward in
science." "The boy is thinking of going into the battle and
accomplishing many heroic deeds."
C. **Long-term involvement:** One of the characters is involved in attainment of a long-term achievement goal. Being a success in life, becoming a machinist, doctor, lawyer, successful businessman, etc., are all examples of career involvement which permit the inference of competition with a standard of excellence unless it is **made explicit that another goal is primary**, e.g., food for the kids, personal security.

When rather routine and limited tasks or performances are shown definitely to be related to long-term achievement interest, AI is scored. Studying for an exam would **not** be scored unless there is evidence of concern over doing well or over the possibility of failure as outlined under criterion A (above), or unless the exam was **explicitly** related to "going on to medical school" or "graduating from college," etc., both being long-term achievement goals.

A story receives a score of one if it contains any AI. It contains AI if it meets any of the requirements stated in either criteria A, B, or C. The maximum score possible for AI is one per story. Ten mentions, or 50 mentions of AI receive a score of one—same as one mention. No mention receives a score of 0.

**Achievement Theme (Ach Th)**

Ach. Thema is scored when the achievement Imagery is elaborated in such a manner that it becomes the central plot or thema of the story. The decision to be made by the scorer
is whether or not the whole story is an elaboration of the achievement behavior sequence. If there is a major counter plot, or if there is any doubt about the achievement imagery being central to the plot, Ach Th is not scored. Example: "Father and son are having a serious talk. They are going into bankruptcy. They are trying to remedy the situation by putting out a greater effort to surpass their competitors. They do get some money, but not enough as they need. The business continues but does not make money as usual until 10 years later."

In this example Ach Th is scored because achievement related activity is central to the plot. A relatively unsuccessful outcome is irrelevant. Example: "The boy is thinking of running away from home. He was just whipped by his parents because he stole something from another boy. This boy is an introvert so he does not show his emotions. He goes to his room and feels angry because he was whipped. He daydreams of going to South Africa where he will get a fortune, and be famous."

This story is not scored Ach Th. Not until the last line is there any evidence of AI. It is scored one for AI though.

A story gets a score of one for Ach Th if it meets the above criteria, 0 if it is absent.
The score for any one story can be either 0, 1, or 2.

0 = no AI, no Ach Th.
1 = AI, no Ach Th.
2 = AI, Ach Th.

Of course, any story that is scored one for Ach Th must be scored one for AI.
APPENDIX D
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BIBLIOGRAPHY


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I, David Marlowe, was born in New York, New York, June 1, 1931. I received my secondary education in the public schools of New York City, and my undergraduate training at the City College of New York, which granted me the Bachelor of Arts degree in 1953. During 1953 and 1954 I served in the U. S. Army. I received the Master of Arts from the City College of New York in 1956, and from N. Y. State, certification as a Clinical School Psychologist. While in residence at City College, I was a Fellow in the Department of Speech during the year 1955-56.

In 1956 I entered The Ohio State University and received the degree Doctor of Philosophy in 1959. During my graduate training at The Ohio State University I held the following positions: Research assistant during 1956; Psychology trainee in the Veterans Administration clinical psychology training program between 1956 and 1958; Assistant Instructor at The Ohio State University during the 1958-59 academic year.