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The Relationship between the MMPI Scales of Ego-Strength, Defensiveness, and Obsessive-Compulsiveness and Self, Peer, and Trainer Ratings of Fulfillment of Specified Contract Behavior

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The Relationship Between the MMPI Scales of Ego-Strength,
Defensiveness, and Obsessive-Compulsiveness and
Self, Peer, and Trainer Ratings of
Fulfillment of Specified
Contract Behavior

by

August J. Crivolio

A Thesis Submitted to the Faculty of the Graduate School
of Loyola University of Chicago in Partial
Fulfillment of the Requirements for
the Degree of Master of Arts
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LIFE

August J. Crivolio was born in Chicago on May 16, 1942.

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ABSTRACT

The following hypotheses were tested in this experiment:

(1) A significant positive relationship exists between Barron's ego-strength scale and operationally defined T-group contract behavior. (2) A significant negative relationship exists between defensiveness as measured by the MMPI K scale and operationally defined T-group contract behavior. (3) A significant negative relationship exists between obsessive-compulsiveness as measured by the MMPI Pt scale and operationally defined T-group contract behavior. Twelve contract T-groups in two samples were studied. No support was found for hypothesis 1. Limited support was found for hypothesis 2 in the larger of the two samples. Partial support for a positive as opposed to a negative relationship was found for hypothesis 3 in the larger of the two samples.

The data were also analyzed to test the hypothesis that there would be no significant differences among self, peer, and trainer ratings of operationally defined T-group contract behavior and that there would be no significant differences due to the sex of the person being rated across the three different ratings. The results showed that there was no significant difference across raters due to the sex of the person being rated. Self-ratings were not significantly different from peer-ratings on T-group contract behavior. Self-ratings were significantly higher than trainer-ratings of T-group contract behavior. These results were found in both samples studied in this research.

CHAPTER I: INTRODUCTION

Most of the T-group research has been concerned with an evaluation of the effectiveness of the T-group method for achieving various goals. This has generally been outcome research directed toward the investigation of changes in behavior, feelings, attitudes, etc. as a result of the group experience (Campbell & Dunnette, 1968; Gibb, 1971; House, 1967). Research on the behavior of individuals in the group setting has been summarized by Stock (1964); however, the studies she reviewed were done in the 1950's and left many questions unanswered.

Harrison (1967) has suggested that research be directed toward the study of the process of T-group training as well as the outcome. He encouraged experimenters to investigate what happens in groups that leads to one outcome as opposed to another, instead of just looking at the participants before and after going through a "black box" called training.

Campbell and Dunnette (1968) have also pointed out the need for process research. In particular, they suggested that more measures of individual differences be incorporated in future T-group studies: "Quite simply, the question is for what kinds of people are particular training effects observed (p.99)?" One of the conclusions of their review was that most researchers have the implicit assumption that laboratory training should affect everyone the same way. Because this is unlikely, they suggested that more effort go into studying how individual differences

operate in laboratory training.

Of the many kinds of individual differences that might affect laboratory training, personality is undoubtedly one of the most important. Yet Stock (1964) found that too few researchers had attempted to study the relationship between this variable and behavior in T-groups. It will be the main purpose of this study to examine this relationship between personality and behavior in T-groups.

CHAPTER II: REVIEW OF THE RELATED LITERATURE

Some speculations about how personality variables might be affecting the process of laboratory training could be made on the basis of the results of studies which have been done to investigate the relationship between personality variables and sociometric choice in T-groups. Rosenberg (1951) found that the more compulsive, competitive, and energetic members of a group tended to be chosen less often and showed less capacity for personal relations. Lieberman (1958b) reported that people choose those who do not present a threat to their preferred mode of operating, at least early in the group's history. Bennis and Peabody (1962) also discovered that members of a group choose people who have a similar personality orientation and reject those who have an opposite orientation.

Lieberman (1958a), in a study of the relationship between the emotional culture of groups and individual change, examined the influence of personality on group interaction processes. He was interested in determining how group composition based on various broadly defined personality variables affects group behavior. Two T-groups were composed on the basis of the Reactions to Group Situations Test (RGST), a sentence completion test. Personality was defined in terms of tendencies to express five different kinds of affect: fight, flight, pairing, dependency, and counterdependency. He found that people changed when their personality style was inappropriate in the group. Lieberman

concluded that what the person is like when he comes to the lab seems to have a good deal to do with the learning that takes place. When the personality characteristics are attuned to the prevailing culture there is not pressure or opportunity to experiment with new behavior.

Mathis (1955) developed a "trainability index" for predicting which participants in T-groups would profit from the experience. The index was derived from performance on the RGST. The flight, pairing, and conflict scales were summed and then divided by the sum of the flight, dependency, and immobilization in time of stress scores. The theory underlying the construction of the index was that conflict would stimulate a person to search for solutions to problems that developed in the group. Moreover, high scores on fight and pairing valencies would insure the aggressiveness to deal with problems and would facilitate the support of others in the group. But high scores on dependency, flight, and immobilization in time of stress would interfere with functioning in the group and would inhibit learning. When Mathis studied the 10 members who got the highest index in a group of 50 T-group participants and compared them to the 10 who had the lowest index, he found that the former profited while the latter did not.

A more direct attempt to relate personality defined in terms of emotional valency to behavior in T-groups was described by Ben-Zeev (1958). He gave the RGST to 16 participants in a

T-group and got each member's emotional valency pattern. He then compared these patterns to behavior expressed during 13 group meetings. His results showed that affective situations elicit participation in ways similar to performance on the RGST, especially for fight and pairing valencies. In general, he found a "significant but low" relationship between measured emotional valency and behavior. The relationship seemed to be greater for some subjects than for others.

Some of the earliest investigations of the relationship between personality and behavior in T-groups were conducted by Jeanne Watson (1952a, 1952b, 1953, 1959). She studied the relationship between measures of psychoanalytic conceptions of personality and various measures of social behavior and social attitudes expressed in T-groups. The results and conclusions of this research have recently been summarized by Jeanne Watson Eisenstadt (1967, 1970).

The experimental methodology that was used in these studies left much to be desired. Very crude statistical procedures and techniques were employed. And both the personality and behavior variables were nebulously defined and assessed. Although the conclusions of this research must be interpreted cautiously, some of them are relevant to the research that will be described in this paper.

In these studies, personality assessments were based on the Blacky test and the Krout Personal Preference Scale.

Participants were assigned scores on variables such as overt hostility, narcissism, and anxiety. Group behavior was measured by questionnaires and by ratings that were completed by trainers, peers, and the participants. The kinds of behaviors assessed were such things as participation, involvement, sociometric choice, etc.

The participants who did not have any of the conflicts measured by the personality tests were seen as non-defensive, task-oriented individuals with high ego-strength. They were not easily induced to change, and they were not dependent on the group. Since they had little to gain from the group, they tended to reject it. These members seemed to have no special anxieties about themselves; and although they were seen as productive by others, leisure time choice of them was not high.

One of the conflicted types studied in these investigations was the anal type or the obsessive-compulsive personality. These participants were seen as low in verbal participation, and they seemed to be much more cut off from others in the group and much more uncomfortable. They also showed a high need for structure. But probably because they worked hard and because they were inclined to listen rather than talk, they were seen by the trainers as "making use of the lab." Moreover, trainers, peers, and the anal types themselves agreed that their interest was in learning techniques that were useful in working with groups.

A more rigorously controlled study of personality and behavior in T-groups was done by Blake and Mouton (1956). Using 24 members of 3 T-groups, they chose measures of language skill and ascendancy-submission as personality variables. The group behaviors included participation; peer judgments of who was most influential, protective, aggressive, or withdrawn; and sensitivity to group functions. The results indicated that ascendent subjects are seen by their peers as clashing more with other group members. Moreover, those subjects who were high in both ascendancy and language skill were seen as more active and aggressive. Submissive subjects were seen as avoiding conflict and placing group goals above personal ones; they were also seen as needing direction and support from the trainer. Members high in language skill did better on the sensitivity to group functions measure and were seen as constructive and central members of the group.

Bennis, Burke, Cutter, Harrington, and Hoffman (1957) gave a number of personality tests to 12 members of a T-group. The tests included the Cattell 16 P.F. test, the Edwards Personal Preference Schedule, Harrington's Self-sort test, and Schutz's FIRO. The measures of behavior were descriptions of individuals by others. The results showed that none of the predictions made on the basis of the Cattell or Edwards tests was significant. On the self-sort measures those who described themselves as high in pairing were seen as the most friendly by other group members.

The only significant finding in connection with the FIRO test was that subjects with high inclusion needs (those who want to join groups) were seen by others as low in participation.

Turning now to some of the more recent research, Harrison and Lubin (1965) did a study of learning in T-groups, and it is an important study because of its relevance to the relationship between personality and behavior in T-groups and because of what it suggests about the relationship between behavior in the group and change. Members of the T-groups were divided on the basis of being either highly person-oriented or highly work-oriented as measured by Harrison's Person Description Instrument III. Interpersonal behavior in the group was measured by sociometric questionnaires completed by participants; learning from the group experience was measured by trainer ratings of change. Although the authors do not clearly report how they defined change, they imply that it involved movement toward normative laboratory behavior which included "a readiness to explore the emotional atmosphere of the group, to recognize positive and negative feelings, and to examine interpersonal relationships (p.296)." It was found that the person-oriented members were seen as significantly different in their behavior in the groups when compared to the work-oriented members. The former behaved more expressively and warmly, they were more comfortable, and they felt stronger interpersonal ties within the group. But when learning from the group experience was examined, the results showed that work-

oriented members changed more. These results were explained by suggesting that the person-oriented members were not challenged and that the behavior expected in the group came naturally to them. The work-oriented members, however, experienced "cultural shock," and this pushed them toward change. These results are quite similar to those of Lieberman (1958a).

None of the studies reviewed above consider the relationship between personality and the kinds of process variables that are theoretically considered to be important in a laboratory experience, such as confrontation, self-disclosure, etc. For the most part, these investigations have been concerned with the relationship between personality and change, sociometric choice, participation styles, social behavior, or attitudes. The remaining studies that will be reviewed are alike in that they are more concerned with investigating the relationship between personality and some of the process variables that are considered to be important in T-group theory.

Miles (1965) conducted a study to investigate changes that occurred in 34 subjects as a result of a laboratory experience. Although the research was mainly concerned with change, Miles also studied the relationship between personality variables and training process variables. The personality variables were ego-strength, flexibility, and need affiliation. The training process variables were desire for change, reduction of defensiveness, involvement, and received feedback. The most interesting

finding of this research was that the personality variables did not correlate with change; however, the personality variables were significantly related to the training process variables. And these process variables were the main determinants of learning.

Similar results were found by Steele (1968). He was interested in studying the relationship between personality variables, change, and behavior during the laboratory experience. He gave the Sensation-Intuition scale of the Myers-Briggs Type Indicator to the members of 4 T-groups. He used this to assign the participants scores on their basic mode of "perceiving or becoming aware of the world." The Sensation type is fact and detail oriented with a preference for practicality and thoroughness; the Intuition type utilizes insight, is original, and likes experimentation.

Steele's hypothesis was that subjects who scored high on the Intuitive end of the scale would do better in the laboratory and would learn more than those subjects who were high on the Sensation end of the scale. He used peer ratings on a number of variables, some of them--confrontation, involvement, trying out new behaviors--theoretically important T-group training process variables. The data provided support for the hypothesis that a preference for the Intuitive mode of perception is related to a person's being rated high on the training process variables. However, although the data did indicate a significant relationship

between the Intuitive preferred mode of operating and change, it was too low for predictive power and was interpreted as not giving too much support to the hypothesis concerning the relationship between personality and change.

Finally, Swan (1970) measured personality integration by the total score on the Tennessee Self-Concept Scale. He predicted that the extent of personality integration would be related to a group member's offering the therapeutic behavior of accurate empathy, unconditional positive regard, congruence, and a willingness to be known to the members of the group. These variables were measured by the Therapeutic Perception Test. Significant positive relations were found for each of the therapeutic variables except willingness to be known. That is, members high in personality integration were seen as engaging in these kinds of therapeutic behavior in the group.

The present research is related to the last group of studies reviewed in the sense that the relationship between personality and behavior in T-groups was studied. A methodological improvement in this study was that the behavior expected in the group was clearly defined and included only what Egan (1970) calls "the core interactions" that are the essence of the group experience. These interactions are described below:

- (1) Taking an active part in the group rather than just observing passively
- (2) Trying new forms of behavior and expression

(3) Being open and self-disclosing

(4) Expressing feelings openly and honestly rather than just talking about ideas

(5) Speaking directly to particular individuals rather than to people in general

(6) Making what is said relevant to the hear and now

(7) Confronting others and inviting them to self-examination

(8) Responding growthfully and positively to criticism or confrontation rather than being defensive or resentful about it

(9) Giving support and acceptance to others

(10) Allowing the real self to be seen as opposed to the artificial or put-on self

T-group behavior in this study is operationally defined as the above behavior measured by the rating scale which is in Appendix A.

A decision had to be made about which personality variables to study and how to measure them. The investigator has always been interested in the Minnesota Multiphasic Personality Inventory (MMPI) as an instrument for the assessment of personality. And Fiske (1971) has suggested that MMPI scores may be used as "the basis for judgmental inferences of trait strength (p.69)." But the MMPI had the disadvantage of requiring a long time for a subject to complete the entire test. In order not to

overburden subjects, it was decided to ask them to take only three of the MMPI scales. Therefore, the following three scales were chosen for study in this investigation: Barron's ego-strength scale, the defensiveness scale (K), and the obsessive-compulsive scale (Pt). These three scales were chosen because these personality traits were thought to be important in determining how people respond in T-groups.

Barron (1956) originally developed the ego-strength scale of the MMPI as an instrument for predicting response to psychotherapy. High scores on this scale are gotten by answering the items in the same direction as Barron's criterion group of "improved" psychotherapy patients. However, on the basis of its content and its correlation with other measures of personality adjustment, Barron suggested that "a somewhat broader psychological interpretation be placed upon it, making it useful as an assessment device in any situation where some estimate of adaptability and personal resourcefulness is wanted. It appears to measure the various aspects of effective personal functioning which are usually subsumed under the term 'ego-strength' (p.226)!"

The items included in this scale along with their scored direction are listed in Appendix B. Items may be divided by content into the following categories:

(1) Physical functioning and physiological stability.

The high scorer in this category reports himself to be in good physical health and indicates an absence of somatic complaints.

(2) Psychasthenia and seclusiveness. The high scorer on these items reports that he does not keep to himself. Instead, he talks about how he is feeling and about what is bothering him. He does not quietly obsess and worry about matters of concern to him.

(3) Attitudes toward religion. Here the high scorer does not report rigid, dogmatic beliefs nor does he subscribe to fundamentalist religious beliefs.

(4) Moral posture. High scorers in this category report that they are permissive in their moral standards as opposed to holding rigid, prudish standards of morality.

(5) Sense of reality. The high scorer on these items reports a clear perception of reality.

(6) Personal adequacy, ability to cope. High scores in this area reflect a forcefulness and resiliency in coping with stress and problems. Moreover, they reflect the ability to work effectively and harmoniously with others.

(7) Phobias, infantile anxieties. High scorers in this category report few fears and phobias.

Ego-strength in this study was operationally defined as answering items on Barron's ego-strength scale of the MMPI in the scored direction.

The person who is high in ego-strength as measured by Barron's MMPI scale should be able to actively engage in the T-group behavior operationally defined in this study. To take

an active part in the group, to be self-disclosing, and to openly express ideas and feelings requires that a person be willing to talk about the positive and negative aspects of himself instead of just sitting quietly and keeping to himself. In addition, a lack of rigidity and a permissive acceptance of the values and beliefs of others should contribute to a person's ability to give support and acceptance to others. The accurate perception of others and of what is happening in the group should lead to more effective confrontation. Feelings of personal adequacy and security should facilitate taking the risks involved in trying out new behaviors and should make it somewhat easier to respond growthfully to criticism without the need for resentment and defensiveness. Being secure about himself, the person high in ego-strength as measured by Barron's scale should be able to reveal his real self rather than an artificial, put-on self. Therefore, it was predicted that there would be a significant positive relationship between ego-strength as measured by Barron's scale and T-group behavior as operationally defined in this study.

The defensiveness (K) scale of the MMPI was developed as "a measure of test taking attitude appearing either as personal defensiveness or as an exhibition of personal defects and troubles (Dahlstrom & Welsh, p.50.)." High scores on this scale are gotten by subjects who answer the items in the direction of the criterion group that was judged to be defensive in the MMPI

standardization sample.

Appendix C lists the items that appear in this scale along with their scored direction. From an examination of these items, it can be seen that the person who gets a high score on this scale denies personal inadequacies, tendencies toward mental disorder, and any trouble controlling himself. Moreover, high scorers withhold criticism of others. Low scorers are willing to admit that they have difficulties and are able to be open about troubles and weaknesses.

Defensiveness in this study was operationally defined as answering items on the K scale of the MMPI in the direction of the criterion group of subjects judged to be defensive in the MMPI standardization sample.

The person who is low in defensiveness as measured by the K scale of the MMPI should be able to actively engage in the T-group behavior operationally defined in this study. He should be willing to be open about himself which would facilitate his being self-disclosing and his expressing feelings and emotions honestly. Since he probably is not interested in covering up weaknesses and faults, he should respond well to the confrontation of others without being defensive. Not being afraid to show the negative facets of himself, he should not be afraid to display his real self to the group. Uninvested in maintaining his usual ways of responding, he should be free to try out new behavior. Persons high in defensiveness as measured by the K

scale should tend not to confront others since they are reluctant to be critical. Therefore, it was predicted that there would be a significant negative relationship between defensiveness as measured by the MMPI K scale and T-group behavior as operationally defined in this study.

The obsessive-compulsive scale of the MMPI was developed to help in the evaluation of the neurotic pattern of the obsessive-compulsive syndrome. High scores on this scale are gotten by subjects who answer the items in the direction of the criterion group that was judged to be obsessive-compulsive in the MMPI standardization sample.

Appendix D lists the items that appear in this scale along with their scored direction. From an examination of these items it can be seen that they deal with such things as low self-confidence, doubts about competence, anxiety and dread, and undue moodiness, sensitivity, and immobilization. The personality characteristics this scale measures include "some forms of abnormal fears, worrying, difficulties in concentrating, guilt feelings, and excessive vacillation in making decisions. Other frequently noted features include excessively high standards on morality or intellectual performance, self-critical or even self-debasing feelings and attitudes, and assumption of rather remote and unemotional aloofness from some personal conflicts (Dahlstrom & Welsh, p.69.)."

Obsessive-compulsiveness in this study was operationally

defined as answering items on the Pt scale of the MMPI in the direction of the criterion group of subjects judged to be obsessive-compulsive in the MMPI standardization sample.

The person who is high in obsessive-compulsiveness as measured by the Pt scale of the MMPI should find it difficult to actively engage in the T-group behavior operationally defined in this study. The high scorer's tendency to be indecisive and to become immobilized would interfere with his taking an active part in the group. Also, the lack of confidence and presence of self-doubt should work against his taking the risks involved in self-disclosure and in trying new ways of behaving and expressing himself. The high scorer's tendency to be unduly sensitive would interfere with his ability to respond growthfully to confrontation. The high standards on morality and intellectual performance associated with high scores might make it difficult to give support and acceptance to others. The high scorer's tendency to assume a remote and unemotional aloofness from personal conflicts would not facilitate his openly and honestly expressing feelings; he should prefer instead to talk about ideas in an intellectual way; and he should have difficulty letting others see the real him. Therefore, it was predicted that there would be a significant negative relationship between obsessive-compulsiveness as measured by the MMPI Pt scale and T-group behavior as operationally defined in this study.

The main focus of this study was the relationship between

personality and behavior in T-groups. However, the groups that were used in this study were contract T-groups and followed the training method outlined by Egan (1970). Because this method has just recently been developed, there is much to learn about the characteristics of this kind of experience. The fact that members of these groups agreed to follow a contract specifying the kinds of behavior that they had to engage in suggested the following question: Will there be significant differences in ratings of a member's success in fulfilling the contract specifying the kinds of behavior expected in the T-group when self-ratings, peer-ratings, and trainer ratings are compared? The hypothesis in this study was that there would be no significant differences determined by who was doing the rating.

CHAPTER III: METHOD

Subjects. Two samples of subjects were used in this experiment. Sample I consisted of students enrolled in an undergraduate course called "Laboratory in Interpersonal Relations," and admission into the course required the permission of the instructor. This sample was composed primarily of students working for an undergraduate degree, although there were some graduate students in the course.

Sample II consisted primarily of subjects who were Roman Catholic priests and nuns. All had chosen to work for graduate degrees in religious education, and one of the requirements of this program was that they participate in a summer workshop which included a laboratory experience.

Table 1 shows some of the subject characteristics of Samples I and II.

Measures. As mentioned above, the personality measures used in this experiment are subscales of the MMPI. The entire MMPI test was not given; Barron's ego-strength scale, the defensiveness scale (K), and the obsessive-compulsive scale (Pt) were the only scales administered. Items from these scales were randomly ordered to make up the personality inventory that was administered to subjects. Dahlstrom and Welsh (1960) review the findings of research workers who have removed scales for special uses, and they report that the removal of the scales seems to make no difference in the kinds of results obtained.

TABLE 1
Subject Characteristics

Characteristic	Sample I	Sample II
Number of Ss	34	78
Number of males	19	39
Number of females	15	39
Age range of Ss	18-62	21-58
Mean age of Ss	27	33
Median age of Ss	23	31

Dahlstrom and Welsh (1960) also report that although the effect on the responses to the MMPI items produced by their appearing in a different matrix has not been systematically studied, the research that has been done suggests that the general response patterns do not seem to be significantly changed.

Subjects in this study agreed to fulfill a contract specifying the T-group behavior as defined in this study. A rating scale was developed to measure how well each subject fulfilled this contract. The items on the rating scale are shown in Appendix A. This scale has only face validity.

Procedure. Prior to any T-group experience, each participant was given the three personality measures described above. All subjects were told that the results of these tests would be seen only by a research team.

The group experience that both samples had was under the general supervision of a psychologist who specializes in group work; all of the group trainers worked under his supervision. All subjects in both samples were required to read a book on the laboratory experience written by this psychologist (Egan, 1970). This book explains the contract and defines the kind of behavior specified by the contract. In addition, all subjects were exposed to three didactic lectures which explained the contract and which prepared them for the group experience.

Then the subjects in each sample were divided into groups. In Sample I, there were 4 groups with an average of 9 members in each group. Two of these groups had male trainers and two had female trainers. Each of these groups had approximately the same number of males and females.

Sample II consisted of 8 groups with an average of 10 members in each group. Six of the groups had male trainers and 2 of the groups had female trainers. Each of these groups had approximately the same number of males and females.

The subjects in Sample I met for a total of 35 hours over an 8 week period; the subjects in Sample II met for a total of 50 hours over a 2 week period.

At the end of the laboratory experience, each person was given a packet of rating sheets. Each subject rated himself and every member of his group on contract behavior. In addition, each trainer rated every member of his group. All subjects were

assured that no one would see their ratings except the research team.

Scores on Barron's ego-strength scale, the defensiveness scale, and the obsessive-compulsive scale were derived by computing raw scores from answers to the test items and then converting these into T-scores. Self-ratings and trainer-ratings of fulfillment of contract behavior were derived by summing over the 10 items on the rating scale. The 'peer' rating of each member was arrived at by adding the ratings of all the members in the group except for the trainer and computing a mean which was the score assigned.

Pearson Product-Moment coefficients of correlation were computed on the data. A correlation matrix was gotten for the data from Sample I, and a second correlation matrix was gotten for the data from Sample II. In order to determine whether the correlations were significantly different from 0, a table of minimum correlation values for significance at the .01 and .05 levels was used (Guilford, 1965, p.581). A total of 18 correlation coefficients were computed. At the .05 level of confidence, approximately 1 of these correlations would be expected to be significantly different from 0 on a chance basis. Therefore, it was decided that more than 1 out of the 18 correlations would have to be significantly different from 0 in order for the results to be considered statistically significant.

In order to test the hypothesis that there would be no

significant differences among self, peer, and trainer ratings and in order to determine whether the sex of the person being rated would make a significant difference, a 3×2 analysis of variance repeated measures design was used (Edwards, 1967).

It should be mentioned why Samples I and II were considered separate samples and not treated as groups to be included in the ANOVA. One reason was that the samples were considered to be different in subject characteristics such as age, education, occupation, etc. The samples were also different not only in the total number of hours of training but also in how this training was distributed over time. Because of all these differences between the two samples, it would be difficult to interpret a significant main effect due to sample. Therefore, the two samples were considered separately, and the study was considered a replication within itself.

CHAPTER IV: RESULTS

Personality scores were not available from one subject in Sample I because he was a friend of both members of the research team, and he was asked not to take the personality measure. One subject in Sample II did not take the personality measure because he was absent on the day the test was given; by the time it was discovered that he did not take the personality test, he had already completed training. No rating sheets were turned in by three subjects in Sample II. Since little is known about the characteristics of subjects who would not turn in these kinds of rating sheets, it is difficult to even speculate about the possible bias that was introduced into the results by this missing data.

When doing the analysis of variance, it was found that there were unequal numbers of males and females. It was also discovered that there was no accurate computer program available to do the ANOVA for unequal n's. Since only 3 males in Sample I and 2 males in Sample II would have to be eliminated to equalize the n's, it was decided to randomly eliminate them. This procedure was justified on the basis of Edward's (1968, p.263) recommendation of this solution to the problem of unequal n's. His only caution is to not eliminate a relatively large number of observations. Furthermore, by equalizing n's, the sample more clearly reflected the proportion of males and females that exists in the population.

A total of 18 correlations between the MMPI personality scales and ratings of contract behavior fulfillment were found. Of these, 4 were significantly different from 0. At the .05 level of confidence, only one would be expected to be significantly different from 0 on a chance basis. Therefore, the 4 correlations that are significantly different from 0 will be considered to not have occurred by chance.

Table 2 shows the correlations between Barron's ego-strength scale and ratings of fulfillment of contract behavior. From an inspection of Table 2, it can be seen that all correlations between the ego-strength scale and ratings of contract behavior were nonsignificant.

Table 3 shows the correlations between the MMPI defensiveness scale and ratings of fulfillment of contract behavior. From an inspection of Table 3, it can be seen that there were

TABLE 2

Correlations Between Barron's Ego-Strength Scale and Ratings of Contract Behavior

Sample	Rating		
	Self	Peer	Trainer
I (N=30)	-.22	-.14	-.08
II (N=72)	-.18	-.19	-.19

Note: None of these correlations are significantly different from 0 at the .05 level.

TABLE 3

Correlations Between the MMPI Defensiveness Scale and Ratings of Contract Behavior

Sample	Rating		
	Self	Peer	Trainer
I (N=30)	-.24	-.08	.13
II (N=72)	-.20	-.38*	-.43*

* $p < .01$ (Different from 0)

significant negative correlations between the defensiveness scale and peer-ratings and between the defensiveness scale and trainer-ratings in Sample II ($p < .01$; $df=70$).

TABLE 4

Correlations Between the MMPI Obsessive-Compulsive Scale and Ratings of Contract Behavior

Sample	Rating		
	Self	Peer	Trainer
I (N=30)	.13	.28	.19
II (N=72)	.15	.25*	.24*

* $p < .05$ (Different from 0)

Table 4 shows the correlations between the MMPI obsessive-compulsive scale and ratings of fulfillment of contract behavior. From an inspection of Table 4, it can be seen that there were significant positive correlations between the obsessive-compulsiveness scale and peer-ratings and between the obsessive-compulsiveness scale and trainer-ratings in Sample II ($p < .05$; $df = 70$).

Table 5 shows the mean self, peer, and trainer ratings of fulfillment of contract behavior for males and females in Sample I. From an inspection of Table 5, it can be seen that the means for both rows are ordered in the same way: The highest rating is the self-rating; the peer-rating is lower than the self-rating; and the trainer-rating is the lowest of the three ratings.

Table 6 shows a summary of the analysis of variance for Sample I. There was a significant main effect due to raters ($p < .001$; $df=2$). There was no significant main effect due to sex.

In order to test specific pairs of means for the significant differences indicated by the significant main effect due to raters, the Scheffé method for testing the difference between any two means was used (outlined by Edwards, 1967, Pp. 265-267). On the basis of this test, the mean of the self-ratings was not significantly different from the mean of the peer-ratings; however, the mean of the self-ratings was

TABLE 5

Means of Self, Peer, and Trainer Ratings--Sample I

Sex	Rating		
	Self	Peer	Trainer
Males	75.7	74.5	64.7
Females	77.5	70.6	58.1

TABLE 6

Analysis of Variance for Ratings--Sample I

Source	df	MS	F
Sex	1	187.49	.85
Subjects x Sex	28	219.29	
Raters	2	1855.07	30.98*
Sex x Raters	2	137.63	2.29
Ss x Sex x Raters	56	59.87	

* $p < .001$

TABLE 7

Means of Self, Other, and Trainer Ratings--Sample II

Sex	Rating		
	Self	Peer	Trainer
Males	76.4	70.9	65.2
Females	75.5	73.9	64.6

significantly different from the mean of the trainer-ratings ($p < .01$); and the mean of the peer-ratings was significantly different from the mean of the trainer-ratings ($p < .01$).

Table 7 shows the mean self, peer, and trainer ratings of fulfillment of contract behavior for males and females in Sample II. From an inspection of Table 7, it can be seen that means for all the rows are ordered in the same way as they were in Sample I. Again, the highest rating is the self-rating; the peer-rating is lower than the self-rating; and the trainer rating is the lowest of the three ratings.

TABLE 8

Analysis of Variance for Ratings--Sample II

Source	df	MS	F
Sex	1	13.15	.044
Subjects x Sex	70	298.86	
Raters	2	2297.63	5.09*
Sex x Raters	2	81.93	.181
Ss x Sex x Raters	140	451.30	

* $p < .01$

Table 8 shows a summary of the analysis of variance for Sample II. As in Sample I, there was a significant main effect due to raters, but the F value is not as significant ($p < .01$; $df=2$). There was no significant main effect due to sex which was also true for Sample I.

The Scheffé method was again used to test specific pairs of means for the significant differences indicated by the significant main effect. As was true for Sample I, there was no significant difference between the mean of the self-ratings and the mean of the peer-ratings. Moreover there was no significant difference between the mean of the peer-ratings and the mean of the trainer-ratings, although this comparison was significant in Sample I. Finally, as was found in Sample I, there was a significant difference between the mean of the self-ratings and

the mean of the trainer-ratings ($p < .01$).

CHAPTER V: DISCUSSION

Since very little research has been done on the relationship between personality and T-group behavior, this investigation was mainly exploratory. When doing this kind of research, it is difficult to consider all of the important variables that may come into play no matter how carefully the research is planned. Frequently it is only when the results are in and some attempt is made to interpret them that questions are asked about theory and method. Therefore, the experimenter who does exploratory research can have little certainty about his findings since a clear picture of the relationships involved will only come from additional, rigorously controlled research.

Mistakes were certainly made in this study which affect the conclusions that can be drawn from its results. The selection of the MMPI scales and the personality traits they measure was not a good choice. The MMPI is essentially a clinical instrument used to assess traits which are psychopathological. Its use in a normal population may have been inappropriate.

The T-group approach is designed for the growth of normals and not as group therapy for abnormals. A better approach in this study would have been to assess the normal personality traits that might contribute to a person's ability to function in a T-group.

A methodological improvement made in this study involved

clearly defining the T-group behaviors rated. An attempt was made to insure that all raters understood exactly what was meant by the T-group behaviors rated. The scale used has face validity; and it has content validity since the items included do sample the behaviors that are considered to be theoretically important in effective T-group training. But additional research will have to be done to establish its criterion validity. That is, it has not been demonstrated that participants who are rated high on this scale do in fact engage in the defined behaviors to a greater extent than those who are rated low. It must also be demonstrated that ratings on this scale are reliable. In addition, further research is needed to clarify how ratings of outside observers compare to the ratings of group participants and how ratings of outside observers relate to personality variables.

This research could have been improved by the addition of a control group. The members of the control group should have read the book explaining the T-group experience, and they should have been exposed to the didactic lectures explaining the experience. However, instead of engaging in T-group behavior, they should have engaged in some task together, like problem solving. Then they should have rated each other on the rating scale, and these ratings should have been correlated with the personality measures. The correlations in both groups could have been compared to see if any significant differences occurred.

Personality variables are only one class of variables that could have affected how members were rated on T-group behavior. The amount of participation of each member was not measured and no doubt had an effect on how members were rated. Also, there was no measurement of how effectively people were able to engage in the kinds of behavior expected in a T-group before they entered the group and of how much they changed as a result of training. Moreover, personality change produced by the group experience was not evaluated.

In view of the methodological weaknesses of this study and the possible contamination caused by uncontrolled variables, the results of this study have to be viewed with considerable caution. In order for the very tentative conclusions of this research to gain support, a considerable amount of more rigorously conducted research will have to be done.

It was hypothesized that there would be a significant positive relationship between ego-strength as measured by Barron's ego-strength scale and T-group behavior as operationally defined in this study. The results showed no significant relationship between these two variables.

This finding does not agree with the results of Eisenstadt (1970). She defined ego-strength in terms of being free from any of the conflicts measured by the Krout Personal Preference Scale and the Blacky test. T-group behavior was measured by ratings and questionnaires. The high ego-strength subjects in

her study were found to reject the group and to avoid becoming dependent on it. The results of this study also differ from the results of Miles (1965). He, too, used Barron's ego-strength scale as a measure of ego-strength, and he found a significant positive relationship between ego-strength and the process variables of involvement, received feedback, and openness, which were measured by ratings.

No comparisons can be made between Eisenstadt's study and the current study because of vast differences in the personality instruments which were used. However, Miles study was somewhat similar to this one in the sense that both used Barron's ego-strength scale for the personality measure. The difference between the two involves the process variables studied and the way they were measured. It is possible that the ego-strength scale may be related to some process variables but not to others. One possible way of testing this would be to relate the ego-strength scale scores in this study only to the items on the rating sheet that deal with feedback (Item 8), openness (Items 3 & 4), and involvement (Item 1).

A second hypothesis of this study was that there would be a significant negative relationship between defensiveness as measured by the MMPI K scale and T-group behavior as operationally defined in this study. The results from Sample II give partial support to this hypothesis. There were significant negative relationships between the defensiveness scale and peer

ratings (-.38) of T-group behavior and between the defensiveness scale and trainer-ratings (-.43) of T-group behavior.

These results give some support to the hypothesis that being able to be open and honest about shortcomings on the defensiveness scale of the MMPI is associated with being seen by peers and trainers as engaging in T-group behaviors as defined in this study.

Because of difference in subject characteristics and in the training experience of each sample, one can only speculate about why significant results were gotten in Sample II but not in Sample I. One possible contribution to the significant results in Sample II may have been its relatively larger size which may have increased the probability of significant results.

The final hypothesis regarding the relationship between personality and T-group behavior was that there would be a significant negative relationship between obsessive-compulsiveness as measured by the MMPI Pt scale and T-group behavior as operationally defined in this study. The results of this study gave no support to this hypothesis. In fact, some partial support of the opposite hypothesis was found. The findings indicated that there were significant positive relationships between the two variables for peer (.25) and trainer (.24) ratings. These results suggest that scoring high on the obsessive-compulsive scale of the MMPI is associated with being seen by peers and trainers as engaging in T-group behaviors as

defined in this study. Again, these results were found only in Sample II and may have resulted from the increased probability of significant results in a large sample.

This finding may be related to the results found by Eisenstadt (1970). She measured obsessive-compulsiveness by the Krout Personal Preference Scale and the Blacky test. She found that obsessive-compulsive participants were interested in learning the techniques to use in groups. In retrospect, it could be hypothesized that in the current study persons scoring high on the MMPI obsessive-compulsive scale may have been interested in learning what they considered to be techniques specified and described for interacting in T-groups.

In regard to differences among self, peer, and trainer ratings of engaging in T-group behaviors as operationally defined in this study, the hypothesis proposed was that there would be no significant differences among the means of these ratings and that there would be no significant differences due to the sex of the person being rated across the three different ratings.

On the basis of the results of this research self, peer, and trainer ratings on T-group behavior are not affected by the sex of the person being rated in either Sample I or Sample II. Moreover, there was no significant difference between self-ratings and peer-ratings of T-group behavior in either sample. Participants in these T-groups did not differ from the other members of their groups in terms of how effectively they saw

themselves engaging in T-group behavior as operationally defined in this study. One possible explanation for these results is that participants in T-groups are able to utilize the feedback they get from others in regard to how effectively they are functioning in the group. As a result, their assessment of their own behavior in the group is similar to that of their peers. This is a major goal of T-group training, and these results may be interpreted as suggesting that this goal was achieved in the groups studied in this research.

The proposed hypothesis failed to be supported when self-ratings and trainer ratings of T-group behavior were compared. In both samples, there was a significant difference between the means of these ratings. Participants saw themselves as more effectively engaging in T-group behavior than did the trainers. One possible explanation for these results may be that the trainers may have been more objective or more strict in their ratings; or, they may have had an ideal type in mind when they rated participants.

Finally, in Sample I there was a significant difference between peer-ratings and trainer-ratings, but this was not the case in Sample II. Again, differences in subject characteristics and training experiences in each sample may be used to explain the results but such explanations would be highly speculative.

SUMMARY

No support was found in this research for the hypothesis that there is a significant positive relationship between Barron's ego-strength scale and operationally defined T-group behavior. Although some partial support for a significant relationship between the MMPI defensiveness and obsessive-compulsive personality scales and operationally defined T-group behavior was found, the results were highly qualified. The significant correlations which were found occurred only in the larger sample and not in the other. Moreover, the results were qualified on the basis of the methodological weaknesses of this study. Before any of these results can be considered to be anything more than tentative, more rigorously controlled research will have to be done.

The results also showed that there were no significant differences due to the sex of the person being rated. Also, ratings on T-group behavior by participants were not significantly different from their peers' ratings. However, self-ratings of T-group behavior were significantly higher than trainer-ratings. These results were found in both samples studied in this research.

7. To what extent did you confront others and invite them to self-examination?

1	2	3	4	5	6	7	8	9	10
very little									very much

8. To what extent did you respond growthfully and positively to criticism or confrontation rather than being defensive or resentful about it?

1	2	3	4	5	6	7	8	9	10
very little									very much

9. To what extent did you give support and acceptance to others?

1	2	3	4	5	6	7	8	9	10
very little									very much

10. To what extent were you your real self rather than artificial or put-on?

1	2	3	4	5	6	7	8	9	10
very little									very much

APPENDIX B

Barron's Ego-Strength Scale

The scored direction of response is given in parentheses after each item.

Physical functioning and physiological stability.

During the past few years I have been well most of the time. (T)

I am in just as good physical health as most of my friends. (T)

I have never had a fainting spell. (T)

I feel weak all over much of the time. (F)

My hands have not become clumsy or awkward. (T)

I have a cough most of the time. (F)

I have a good appetite. (T)

I have diarrhea once a month or more. (F)

At times I hear so well it bothers me. (F)

I seldom worry about my health. (T)

My sleep is fitful and disturbed. (F)

Psychasthenia and seclusiveness.

I feel unable to tell anyone all about myself. (F)

I feel sympathetic towards people who tend to hang on to their griefs and troubles. (F)

I brood a great deal. (F)

I frequently find myself worrying about something. (F)

I have met problems so full of possibilities that I have been unable to make up my mind about them. (F)

I get mad easily and then get over it soon. (T)

When I leave home, I do not worry about whether the door is locked and the windows closed. (T)

Sometimes some unimportant thought will run through my mind and bother me for days. (F)

Often I cross the street in order not to meet someone I see. (F)

I dream frequently about things that are best kept to myself. (F)

Attitudes toward religion.

I go to church almost every week. (T)

I pray several times every week. (F)

Christ performed miracles such as changing water into wine. (F)

Everything is turning out just like the prophets of the Bible said it would. (F)

I have had some very unusual religious experiences. (F)

I believe my sins are unpardonable. (F)

Moral Posture.

I would certainly enjoy beating a crook at his own game. (T)

When I get bored, I like to stir up some excitement. (T)

I do many things which I regret afterwards (I regret things more or more often than others seem to). (F)

I can be friendly with people who do things which I consider wrong. (T)

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

I like to flirt. (T)

I am attracted to members of the opposite sex. (T)

I never attend a sexy show if I can avoid it. (F)

I like to talk about sex. (T)

I do not like to see women smoke. (F)

Sometimes I enjoy hurting persons I love. (T)

Sense of reality.

I have had very peculiar and strange experiences. (F)

I have strange and peculiar thoughts. (F)

I have had blank spells in which my activities were interrupted and I did not know what was going on around me. (F)

When I am with people, I am bothered by hearing very queer things. (F)

At times I have fits of laughing and crying that I cannot control. (F)

I have had no difficulty in keeping my balance in walking. (T)

Parts of my body often have feelings like burning, tingling, crawling, or like "going to sleep." (F)

My skin seems to be unusually sensitive to touch. (F)

Personal adequacy, ability to cope.

My plans have frequently seemed so full of difficulties that I have had to give them up. (F)

I am easily downed in an argument. (F)

I find it hard to keep my mind on a task or job. (F)

My way of doing things is apt to be misunderstood by others. (F)

I sometimes feel that I am about to go to pieces. (F)

I feel tired a good deal of the time. (F)

If I were an artist, I would like to draw flowers. (F)

If I were an artist, I would like to draw children. (F)

I like collecting flowers or growing house plants. (F)

I like to cook. (F)

When someone says silly or ignorant things about something I know, I try to set him right. (T)

Phobias, infantile anxieties.

I am not afraid of fire. (T)

I am made nervous by certain animals. (F)

Dirt frightens or disgusts me. (F)

I am afraid of finding myself in a closet or small closed place. (F)

I have often been frightened in the middle of the night. (F)

Miscellaneous.

I like science. (T)

I think Lincoln was greater than Washington. (T)

I very much like horseback riding. (F)

The man who had most to do with me when I was a child (such as my father, stepfather, etc.) was very strict with me. (T)

Often one or more members of my family is very nervous. (T)

In my home we have always had the ordinary necessities (such as enough food, clothing, etc.). (T)

APPENDIX C

MMPI Defensiveness (K) Scale

The scored direction of response is given in parentheses after each item.

At periods my mind seems to work more slowly than usual. (F)

I have sometimes felt that difficulties were piling up so high that I could not overcome them. (F)

I have often met people who were supposed to be experts who were no better than I. (F)

I find it hard to set aside a task that I have undertaken, even for a short time. (F)

I like to let people know where I stand on things. (F)

At times I feel like swearing. (F)

At times I am all full of energy. (F)

At times I feel like smashing things. (F)

I have never felt better in my life than I do now. (F)

It takes a lot of argument to convince most people of the truth. (F)

I have periods in which I feel unusually cheerful without any special reason. (F)

I certainly feel useless at times. (F)

Criticism or scolding hurts me terribly. (F)

I think a great many people exaggerate their misfortunes in order to gain the sympathy and help of others. (F)

Often I can't understand why I have been so cross and grouchy. (F)

I get mad easily and then get over it soon. (F)

What others think of me does not bother me. (F)

I have very few quarrels with members of my family. (T)

I am against giving money to beggars. (F)

At times my thoughts have raced ahead faster than I could speak them. (F)

I frequently find myself worrying about something. (F)

I worry over money and business. (F)

It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important. (F)

People often disappoint me. (F)

I often think, "I wish I were a child again." (F)

I find it hard to make talk when I meet new people. (F)

When in a group of people I have trouble thinking of the right things to talk about. (F)

Most people will use somewhat unfair means to gain profit or an advantage rather than to lose it. (F)

It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of things. (F)

I think nearly anyone would tell a lie to keep out of trouble. (F)

APPENDIX D

MMPI Obsessive-Compulsive (Pt) Scale

The scored direction of response is given in parentheses after each item.

I feel anxiety about something or someone almost all the time. (T)

Sometimes I become so excited that I find it hard to get to sleep. (T)

I usually have to stop and think before I act even in trifling matters. (T)

Often I cross the street in order not to meet someone I see. (T)

I have a habit of counting things that are not important such as bulbs on electric signs, and so forth. (T)

I get anxious and upset when I have to make a short trip away from home. (T)

Bad words, often terrible words, come into my mind and I cannot get rid of them. (T)

I am inclined to take things hard. (T)

I almost never dream. (F)

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

I like to study and read about things that I am working at. (F)

I feel weak all over much of the time. (T)

I wake up fresh and rested most mornings. (F)

My daily life is full of things that keep my interested. (F)

I find it hard to keep my mind on a task or job. (T)

I wish I could be as happy as others seem to be. (T)

I am certainly lacking in self-confidence. (T)

I certainly feel useless at times. (T)

I seldom worry about my health. (F)

I seem to be about as capable and smart as most others around me. (F)

Most nights I go to sleep without thoughts or ideas bothering me. (F)

I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going." (T)

I cannot understand what I read as well as I used to. (T)

I am afraid of losing my mind. (T)

My memory seems to be all right. (F)

There seems to be a lump in my throat much of the time. (T)

Most of the time I feel blue. (T)

I have periods of such great restlessness that I cannot sit long in a chair. (T)

I do many things which I regret afterwards (I regret things more or more often than others seem to). (T)

My hardest battles are with myself. (T)

Much of the time I feel as if I have done something wrong or evil. (T)

I frequently find myself worrying about something. (T)

I am more sensitive than most other people. (T)

Even when I am with people I feel lonely much of the time. (T)

At times I have fits of laughing and crying that I cannot control. (T)

Life is a strain for me much of the time. (T)

I have strange and peculiar thoughts. (T)

I have been afraid of things or people that I knew could not hurt me. (T)

I have more trouble concentrating than others seem to have. (T)

Almost every day something happens to frighten me. (T)

Once a week or oftener I become very excited. (T)

In school I found it very hard to talk before the class. (T)

I am easily embarrassed. (T)

I easily become impatient with people. (T)

I forget right away what people say to me. (T)

I have several times given up doing a thing because I thought too little of my ability. (T)

Sometimes some unimportant thought will run through my mind and bother me for days. (T)

I have no dread of going into a room by myself where other people have already gathered and are talking. (F)

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APPROVAL SHEET

This thesis submitted by August J. Crivolio has been read and approved by one member of the Department of Psychology.

The final copies have been examined by the director of the thesis, and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

April 21, 1972
Date

August J. Crivolio
Signature of Advisor