BRIEFER STUDIES AND ANNOTATIONS

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A PROJECTIVE METHOD FOR THE DIAGNOSIS OF GROUP PROPERTIES

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This paper describes an attempt to adapt a projective method, used in the diagnosis of personality, to the study of small groups. The investigation began with the following question: If properties of an individual are revealed in making up stories about TAT pictures (3), will properties of a group be revealed in stories which are made up by the group in the course of a group discussion? The present report deals with the administration and scoring of the test which was developed in exploring this question, and presents some of the preliminary findings. The data reported here—collected at the National Training Laboratory for Group Development—are based on the first five groups studied.[1] The results from this small sample are not intended as more than suggestive. They are presented here to illustrate the types of information the test may be expected to yield and to indicate the types of validation procedures we are employing.

The Ambiguous Group Structure Picture

Following a widely used criterion for the selection of TAT pictures we attempted to construct a picture in which group members could identify their own group as "the hero of the drama". To achieve ambiguity, characters in the picture were posed in contradictory attitudes as well as vague ones. The picture shows seven men grouped around a table. The individual at the head of the table may be seen as interested in the proceedings, the man to his left may be seen as bored. A pair in the foreground may be seen as showing friendliness, while an individual across the table is possibly hostile. The latter

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1. Five training groups of from 12 to 15 members each were tested during 1947 session of the National Training Laboratory in Group Development, held at Bethel, Maine.

may be seen as sitting down or rising from the table, and a person near a blackboard may or may not be leaving the room. The subgroup formations were arranged to indicate the possibilities of cohesiveness versus group disintegration. In order that the picture could be simultaneously viewed by all members of the group to be tested, the photograph was enlarged to the size $2\frac{1}{2}$ feet by $1\frac{1}{2}$ feet.

Administration

The Ambiguous Group Structure picture was administered with modified TAT instructions as a test of group imagination. In the case of the Bethel groups the faculty leader was asked to leave the room to minimize inhibitions upon the members. The picture was propped up in clear view of the group members and the examiner read them the following instructions:

> "In the present situation we are going to see how well you can use your imagination. Here is a picture of a number of people in training at a workshop.[2] We would like the group to make up a dramatic story about what has happened before the scene which you see in the picture, what is going on at the present time, what the people are thinking and feeling, and finally what the outcome will be. This is a group project for which you will have twenty-five minutes. The story is not to be written out, but is to be developed by all of you as a group endeavor. Do you understand? We should like to have a dramatic story as to what happened before the scene you see in the picture, what is going on at the present time, what the people are thinking and feeling, and what the outcome will be."

The examiner then stepped aside. After twenty minutes he said: "That was very good. You have five minutes left. Would you care to summarize?"

The entire group discussion was electrically recorded.

Scoring

Rather than analyzing end-stories alone, as in the individual TAT, it was decided to score the full record of the group discussion. In the first place end-stories are, in practice, attempts by a single individual to summarize the group discussion. These summaries might be quite idiosyncratic. The second reason for using the full record is that, in a projective test of the group, information is obtained which is not so directly given in projective tests of the individual. In the individual TAT, the examiner must infer from the end-stories the covert tendencies in the mind of the subject which have produced this story. In a group discussion, however, more overt communication of members' thoughts and feelings is required. Thus the full record of the group discussion should reveal in a relatively direct way material which must be the object of inference in the individual TAT.

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2. The phrase "in training at the workshop" was used only in the Bethel administration of the test, and has been omitted in working with other groups.

In order to quantify these qualitative records, the material is first divided into units. Every statement in the discussion, regardless of grammatical form, is broken down into as many distinct "protocol" sentences as possible. These are the simplest meaningful sentences, consisting of subject and predicate (or referent and characterization), which can be abstracted from a statement. Protocol sentences have the general form: X is doing ——; X is feeling ——; X is classified as ——; etc. The coding scheme is given in *Table I*. Only those protocol sentences are abstracted from a statement which can be formed by using the categories of *Table I* as subjects and predicates.

The subject of a protocol sentence may refer to a person behaving as an individual, a subgroup member, or a group member, or it may refer to the group as a whole, to a part of the group, or to some item in the environment (*Table IA*). The categories used for predicates were designed to correspond as far as possible with the variables used in group dynamics theory. It was hoped that by the use of such an *a priori* code, we might be able to link the test with theory, and thereby increase its diagnostic power. Predicates (or characterizations of the referents) are coded under one of the following conceptual headings: valence of members, valence of activities, valence of the group, acceptance or rejection of inductions, group structure. Two residual categories are employed—feelings not related to any of the preceding, and classifications of people or things in the picture (*Table IB*). In addition to statements interpreting the picture, the record of group discussions included statements dealing with operating procedures within the group while working on the assigned problem, as well as a variety of remarks not directly relevant to the task at hand. An empirical code was developed for these two types of material (*Table IC*).[3]

Interpretation

The data obtained consist of frequencies with which the content is coded under the various categories. To use these data in order to arrive at statements about the properties of the group being tested and about the relative strength of these properties, we make two general assumptions.

First we assume that the categories used in describing the pictured group reflect existing properties of the subject group, except for the properties "interpersonal hostility" and "group disruption", discussion of which seemed to be somewhat threatening in the group situation and to appear in disguised form. It is natural to ask why group properties should be reflected in this projective test, rather than personality properties of the individuals

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3. It is obvious that a single statement may contain more than one protocol sentence. For example, the statement—"The man standing up to make a suggestion on how the group should work on the problem is being deliberately snubbed by the two across the table"—is translated into the following units: 1. Member is making a (rejected) induction. 2. The group is working on a task. 3. A subgroup is disliking another member. The number of protocol sentences obtained for the present set of five groups ranged from 175 to 427 sentences per group.

TABLE I *CODING SYSTEM FOR AMBIGUOUS GROUP STRUCTURE PICTURE*

<div align="center">A. Referents</div>

Referent is:	*Code*
Person as individual	1
Person as group member	2
Group as a whole	3
Person as a subgroup member	4
Subgroup, clique	5
Some item in the environment	6

<div align="center">B. "Projective" characterizations</div>

Characterization deals with:	*Code*

Interest (Valence of activity)

1. Neutral interest; no indication whether interest is positive or negative I
2. Positive interest; involvement; attractiveness of activity $I+$
3. Lack of interest; unattractiveness of activity I_1
4. Satiation; boredom; fatigue; former state of interest, now absent I_s

Activity (Locomotion toward a goal)

1. A goal directed act, success or failure not specified A
2. Goal is (was, or will be) achieved $A+$
3. Goal is not achieved; denial that act is goal-directed $A-$

Influence (Exercise of social inductions within the group)

1. Concern with inductions; no outcome indicated P
2. Induction is attempted and *acceptance* of the induction is explicitly indicated $P+$
3. Induction is attempted and is successful, acceptance is not explicitly indicated $P(+)$
4. Induction is attempted and is rejected; also ineffective inductions or failure to make inductions $P-$

Note: It has been found useful to distinguish here inductions by members and inductions by a leader.

Liking (Valence of members)

1. Concern with liking, no indication whether positive or negative; denial that interpersonal hostility exists L
2. Characters are liking or are liked $L+$
3. Characters are not liking or are not liked; rejection; aggression; unpleasant feelings having source in interpersonal relations $L-$

Feelings (Expressions of affect, other than interpersonal)

1. Affect discussed; no indication whether positive or negative F
2. Positive affect $F+$
3. Negative affect $F-$

Group Characteristics

1. Reference to group structure or process G
2. Positive valence of group; locomotion towards group, etc. $G+$
3. Negative valence of group; disruption of group $G-$
4. Withdrawal from group without negative valence $G(-)$
5. Reference to leader role G_l
6. Reference to member role G_m
7. Other role differentiations in the group G_s

Classifications in the picture

1. Descriptive classifications (e.g., "person is at head of table")   C$_d$
2. Interpretative classifications (e.g., "person is a visiting scholar")   C

C. Procedure and non-story items

Procedural items

1. Proposing, assessing, or undertaking some group action   1-1
2. Expressed concern with defining the assigned task   1-2
3. Discussion of the temporal sequence to be used in constructing the story   1-3

Remarks about the test

1. Discussion of the photograph; of what's "really" there; of the purpose of the test;
   of policy in answering, etc.   2-1
2. Aggressive or disparaging remarks about the picture; complaining about or
   ridiculing the task   2-2

Reference to own experience (including the present situation of the group)

1. With respect to procedure
   a. Personal experience outside the subject group   3-a-1
   b. Personal experience as a member of the subject group   3-a-2
   c. Common experience shared as a group   3-a-3
   d. Common experience, but not shared as a group   3-a-4
2. With respect to interpretation
   a. Personal experience outside the subject group   3-b-1
   b. Personal experience as a member of the subject group   3-b-2
   c. Common experience shared as a group   3-b-3
   d. Common experience, but not shared as a group   3-b-4

Jokes; personal out-of-field remarks

Remarks about fellow members, friendly quality   4-1
Remarks about fellow members, aggressive quality   4-2
Matter of fact remarks   4-3

Explicit statements of agreement or disagreement with statements by other members

Agree with interpretative statement   5-1
Disagree with interpretative statement   5-2
Agree with procedural statement   5-3
Disagree with procedural statement   5-4

contributing to the story.[4] Experience with the test suggests three possible
reasons: (*a*) tendencies for individual perception to be influenced by the
group situation in which the test is being administered; (*b*) tendencies for
an individual to report only those of his perceptions which are based on
experiences shared with other members, and which are therefore likely to
be accepted by them in the group discussion; (*c*) tendencies by other
members to reject idiosyncratic material and to admit into the discussion only
content which they too perceive, the "least common denominator" in this
respect being content based on common experiences in the present group.

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4. In an unpublished study the Ambiguous Group Structure picture was administered to individual
subjects as part of the TAT series. Later the same picture was administered to the same subjects as a group
test. No relationships could be discerned between the protocols of the two tests.

The second assumption relates to the strength of the group properties which are measured. We measure the strength of a given group property by the frequency of items in the corresponding category. In contrast to the individual TAT, where the subject may quickly develop a more or less general conception of the story he will tell, the groups we have tested tend to build stories in step-by-step fashion, with attempts made to reach agreement about parts of the story before new parts are suggested. This results in frequent summaries intended to ensure common understanding about points already agreed upon, so that as members continue to develop the story they are better able to make their contributions from common points of reference. The effect of this process is that interpretations which are accepted by the group tend to be more frequently repeated than interpretations which are not accepted.

Validation

We have attempted to validate the test by two procedures. First we examined other research data collected on the same groups for use as independent criteria of the properties supposedly measured by the present test, and compared the rank orders of the five groups according to criteria and test measures.[5] Since many of the variables measured by the test had no counterparts in independent measures of the groups, we approached validation from a second angle, namely, determining whether the *relationships* among group properties revealed by the test agreed with relationships predicted by theory. For this purpose we set out in advance a series of hypotheses stating expected relationships between pairs of test variables, whether measured in terms of projective material or in terms of the group's procedure in making up the story. To test agreement or disagreement with hypotheses, the rank order of the five groups on one variable was compared with their rank order on the second variable.

A large number of the rank order correlations obtained by both types of validation procedures were significant at or near the ·05 level.[6] In *Table II* the overall results of these validation tests are presented. Of the sixty tests which were run approximately one third (twenty-one) were significant at or near the ·05 level. Of the total of sixty correlations, fifty were in the predicted direction, seven were in the opposite direction and three were zero. It should be pointed out that in the course of developing the present scoring system, we gained experience with some, though not all, of our test and criterion measures. Although, as far as we are aware, the hypotheses tested were developed entirely on independent considerations, these theoretical

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5. The "criteria" data used for the purpose were collected in a research program under the direction of J. R. P. French, Jr.
6. With only five groups, it is necessary to predict the direction of the correlation, and then to have correlations of ± 1·00 for the ·01 level, ± ·90 for the ·05 level, and ± ·80 for the ·07 level. The values are derived from Kendall (2).

predictions may have benefited—to some indeterminate degree—from information obtained from these earlier trial and error attempts.

On the basis of these results we attempted to "freeze" the interpretations, eliminating those which appeared to be clearly untenable, and using only those of the remainder which could be integrated into a coherent theoretical

TABLE II   *CORRELATIONS OBTAINED IN TESTING THE VALIDITY OF INTERPRETATIONS OF TEST SCORES*

	Number of Validity Tests	
Rho	*With Results in Expected Direction*	*With Results Opposite Expected Direction*
1·00	8	–
·90	9	–
·80	4	–
·70	13	1
·60	2	–
·50	6	–
·40	2	1
·30	–	2
·20	2	1
·10	4	2
·00	3	–
Total	53	7

scheme. This procedure left us with twenty-eight hypotheses, eighteen of which were supported at or near the ·05 level. Examples from this final group of hypotheses are presented below to illustrate the manner of interpreting the categories and the types of information which we suggest the test can yield.

AGREEMENT BETWEEN TEST MEASURES
AND CRITERION MEASURES

Lack of Interest in the Group

Let us consider first the characterizations of the picture indicating lack of interest. These are interpreted as revealing more or less momentary absence of interest, applying to a single meeting, in contrast to longer-range fatigue or satiation. In order to compare the levels of lack of interest among the five groups, the frequency with which each group makes such characterizations is adjusted to the frequency of all characterizations made by the group. The five groups are thus ranked according to the score, "percentage of all characterizations that indicate lack of interest". $\frac{I_i}{C}$.

At the end of each meeting members rated their satisfaction with the

meeting on a five point scale, and the mean satisfaction ratings were computed for each group. We hypothesized that if projected lack of interest reflects the actual state of affairs in the group then there should be a negative relationship between rankings on this score and rankings on satisfaction with the meeting. The rank order correlation obtained confirms this hypothesis, *rho* = −1·00.

Exertion of Influence by the Leader

Characterizations indicating attempts to influence members, whether to have them set goals, to undertake particular acts, or to coordinate their activities, were tabulated. We then segregated all items in the story dealing with influence attempts by the leader, irrespective of the outcome of the attempt. To compare groups on the relative volume of inductions they attribute to the leader, we calculated the percentage of all characterizations that describe influence attempts by the leader.

At about the time the test was administered, a sociometric questionnaire was given in which members chose the most "productive" individuals in the workshop as a whole. Groups were ranked according to the percentage of members who rated their own faculty leader in first or second place on this productivity-sociometric. Assuming that the frequency of projections of leader influence attempts reflects members' perceptions of the level of activity of the leader in influencing the group, rankings on this test measure should be positively related to rankings on leader productivity. The obtained *rho* is +1·00.

Interpersonal Hostility in the Group

Items reporting perceptions of hostility seemed to be somewhat threatening in the group discussion. We assume that if hostility is perceived in the picture the subject may either report it directly, or attempt to disguise the perception by mentioning the topic of interpersonal liking but being noncommittal as to the quality of affect, L. An example of the latter response is "I wonder whether the individuals in the picture like one another." The category, L+, moreover, may indicate a genuine perception of interpersonal liking in the picture, but it sometimes appears to be used as though the individual wished to compensate for having reported an L− item, e.g., "I see lots of bad feeling in the group, but on the other hand some of the people do seem to like each other." If hostility is represented by $[(L-) + (L)]$ and liking is represented by part of the $(L+)$ responses, and if the tendency to use the remaining $(L+)$ responses in a compensatory way is the same for all groups, then the excess of hostility over liking within a group is given by the score:

$$\frac{[(L-) + (L)] - (L+)}{C}$$

A sociometric questionnaire was administered in which individuals indicated their preferred leisure-time companions among all people at the workshop. The degree to which a person liked his fellow group members was measured by taking the ratio of choices made within his own group to his total choices,

$$\frac{\text{Number of in-group leisure-time choices}}{\text{Number of total workshop leisure-time choices}}$$

The measure of internal liking within a group is the mean of these ratios for all members. As predicted, a negative relationship exists between the test measure of excess of hostility over liking and the sociometric measure of internal liking within a group, *rho* = −·90.

AGREEMENT OF RELATIONSHIPS BETWEEN MEASURED VARIABLES AND RELATIONSHIPS PREDICTED BY THEORY

Relationship between "Membership Orientation" and "Group Distractability"

"Membership orientation." This is defined in terms of the degree to which individuals move away from concerns about whether they like one another toward concerns about questions of inter-member influence. This distinction is based on the hypothesis that, where individuals first come together, personality characteristics are of major interest and interpersonal relationships tend to be viewed in terms of liking and disliking. As mutual expectations are established and the group becomes increasingly capable of developing group activities which require that members give attention to the coordination of effort, relationships come to be viewed in terms of reciprocal exertions of influence. The relative emphasis on "membership" versus "personality" orientations, thus defined, is measured by the ratio of projective items dealing with inductions to items dealing with liking, $\frac{\Sigma P}{\Sigma L}$.[7]

"Group distractability." The assigned task of the group in this situation is to create a story around the Ambiguous Group Structure picture. The group may " break out" of the instructions by talking *about* the picture (e.g., whether it is posed or genuine) or about the test situation (usually in a disparaging way). These remarks, produced as a by-product of making up the story, are coded 2–1 or 2–2, and are scored in relation to the total number of projective and non-projective items, N, produced by the group. Thus the score for "group distractability" or non-compliance with instructions is $\frac{\Sigma 2}{N}$.

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7. When the test was administered at the beginning of the workshop ΣL items tended to exceed ΣP items, the median value of $\frac{\Sigma P}{\Sigma L}$ for the five groups being ·70; the reverse was true at the end of the workshop, the median value being 1·72.

As in clinical testing of the individual we interpret high level of non-compliance as indicating a lesser ability to attend to goals (4). Where concern over interpersonal liking or disliking is high (high ΣL) and the content of the story touches on these problems, the desire to avoid this threatening material may lead to more or less momentary abandonment of the task of making up a story. Where attention to problems of intermember coordination is low (low ΣP), failure to stick to the task may be brought about by conflicts of members pulling in different directions. These considerations suggest that group distractability, $\frac{\Sigma_2}{N}$, should be inversely related to degree

of membership orientation, $\frac{\Sigma P}{\Sigma L}$. Confirmation of this hypothesis is obtained

by comparing the rank orders of the groups on these two measures, *rho* = $-\cdot 90$.

Relationship between "Membership Orientation" and "Awareness of Group Structure"

"Membership orientation." We discussed the measurement of this property above.

"Awareness of group structure." Characterizations of the picture in terms of group process or group structure are coded under one of the "G" categories. Level of awareness of group structure is thus given by the score $\frac{\Sigma G}{C}$.

An implication of a higher degree of "membership orientation" is that there will be greater interdependence among members from the standpoint of relationships connected with group functioning. Thus in viewing the picture, the saliency of the group should increase for members in contrast to saliency of individuals. We hypothesize that the level of group awareness (operationally, seeing group process and structure in the picture) is directly related to level of membership orientation. A near-significant rank order

correlation is obtained for groups ranked according to $\frac{\Sigma G}{C}$ scores and $\frac{\Sigma P}{\Sigma L}$

scores, *rho* = $+\cdot 80$.

Relationship between "Interpersonal Hostility" and "Group Non-defensiveness"

"Interpersonal hostility." The measurement of this variable in terms of

the ratio, $\frac{[(L-) + (L)] - (L+)}{C}$, was discussed above.

"Group non-defensiveness." In making characterizations of the picture individuals frequently connect these characterizations with some experience of the group. Such references to the experience of the group or of the individual as a group member are coded 3–b–2, –3, or –4. Group non-defensive-

ness is operationally defined in terms of the ease of referring to these experiences in connection with making up the story, and is measured by the ratio,

$$\frac{(3-b-2) + (3-b-3) + (3-b-4)}{C}$$

The effect of interpersonal hostility in producing defensiveness was discussed above. If members of the group are sensitive on this score one means of avoiding these problems, while discussing the picture, is to minimize references to actual group experience. "Group non-defensiveness" or ease of referring to actual group experience is therefore hypothesized to be inversely related to the amount of interpersonal hostility projected. The rank order correlation based on the level of references to experience within the group and on level of hostility confirms this hypothesis, *rho* = −·90.

Relationship between "Interpersonal Hostility" and "Emotional Response to Inductions"

"Interpersonal hostility." We described this measure above.

"Emotional response to inductions." Where inductions are perceived in the picture and are explicitly described as being accepted or rejected, they are coded P+ and P− respectively. These are treated as "emotional" responses in contradistinction to the "matter-of-fact" responses, "P" (induction is attempted with no indication of its outcome) and "P(+)" (induction succeeds with no explicit indication of its acceptance). The tendency to respond emotionally to inductions is measured by the ratio of P+ and P− items to all inductions, ΣP, whether emotional or matter-of-fact.

$$\frac{(P+) + (P-)}{P}$$

We assume that the higher the level of hostility within the group, the less secure the individual will feel that others like him as a person, and the more likely he will be to make each attempted induction a test case of how well he is accepted personally. The expected consequence is that he should become particularly sensitive to the acceptance and rejection of inductions in the group, since these will be seen as providing evidence of personal acceptance or personal rejection. The hypothesis may be formulated as follows: the tendency to respond to social inductions with positive or negative emotionality is directly related to the amount of interpersonal hostility present in the group. Ranking the groups according to the test measures of "emotional response to inductions" and "interpersonal hostility", the obtained correlation confirms the hypothesis, *rho* = +1·00.

Relationship between "Group Productivity" and "Group Cohesiveness"

"Group productivity." The sociometric questionnaire in which members were asked to choose the most "productive" individuals at the workshop

was alluded to above. The ratio,

$$\frac{\text{Number of productivity choices made within own group}}{\text{Number of productivity choices made in the total workshop}}$$

was computed for each member, and the mean of these ratios was computed for all members in a given group. The groups could then be ranked according to how productive they were regarded by their members. Although this measure is derived from a source other than the present test, it is discussed as an example of validation procedure B since it is not used to test "face validity", but is hypothesized to have a "theoretical" relationship to the variable, group cohesiveness.

"Group cohesiveness." Group cohesiveness is used here in the sense employed by Festinger (1) to denote the resultant force acting on members to remain in the group. The attractiveness of the group, or the force toward remaining in it, is measured by the number of items coded G+. (E.g., "This looks like a good group." "This person is just coming into the group.") The forces away from the group are measured by the categories G—, consisting of statements suggesting group disruption, and G (—), consisting of statements that individuals are leaving. The resultant force to remain in the group is expressed by the measure:

$$\frac{(G+) - (G-) + (G(-)}{C}$$

We assume that unlike friendship groups, for example, the forces to remain in a Bethel training group or to leave it are based to a relatively small degree on feelings of liking or disliking individual members. The delegates at Bethel were in attendance to undergo a program of training and would be expected to desire the most effective training possible. Probably reinforcing this desire was the strong emphasis placed upon productivity during the 1947 sessions of the workshop. Thus forces into the group should be based on perceptions of the group's "productivity" and in particular, the training leaders "productivity". Forces away from the group might derive from the perception of an "unproductive" leader or "unproductive" members who interfere with the proper functioning of the group. The hypothesis tested is that the cohesiveness of this type of voluntary training group is directly related to perceptions of group productivity. Correlating rank orders of the groups on the measures of "cohesiveness" and "productivity", respectively, we obtain confirmation of this hypothesis, *rho* = +1·00.

In the validity tests presented above, examples of "face validity"—in terms of correspondence between the test measure of a variable and an independent measure of the same variable—have been presented for several variables. Examples of validity tests, based on the correspondence of relationships between pairs of measured variables and relationships predicted by theory, have also been presented for a number of variables. One may ask whether the variables which we have assumed to be independent are not

themselves related. In the limiting case, if all variables measured have either significant positive or significant negative correlations with each other they could not be said to denote distinct properties of a group but would appear to reflect some common underlying variable. Correlations between pairs of these presumably distinct variables were computed and found to be uniformly non-significant, except for a perfect positive correlation between "inductions by the leader", $\frac{P_1}{C}$, and "membership orientation", $\frac{\Sigma P}{\Sigma L}$. This correlation may be to some degree spurious since P_1 items are included in P, and L items are included in C. A possible alternative interpretation is that in groups whose training leaders make many attempts at influence $\left(\text{high } \frac{P_1}{C}\right)$, members tend to perceive their relationships in terms of mutual influence rather than in terms of interpersonal liking (resulting in high $\frac{\Sigma P.)}{\Sigma L}$ In view of the absence of significant correlations among the remaining variables there is no reason to believe that these variables are not independent, i.e., represent distinct group properties.

The test scores which have been discussed were collected at the end of the Bethel workshop, after the groups had been meeting daily for three weeks. Over this period of time one could observe that marked differences, apparently stable in character, had developed among the five groups. This probably accounts for our rather surprising success in finding significant relationships among variables ordered on group differences although only five groups were studied. Consistent with this view is the fact that tests administered on the first day of the workshop, before stable group differences could have emerged, fail to reveal any of the relatively clear-cut relationships reported above.

SUMMARY AND CONCLUSION

The applicability of a modified TAT technique to the study of group properties was investigated. Group discussion of an ambiguous picture of a group was coded according to categories which correspond in part to constructs used in group dynamics theory. Strength of group properties was measured by the frequency with which content could be coded under the various categories.

Preliminary validation procedures were reported based on (a) the agreement of properties measured by the test with independent measures, e.g., sociometrics, rating scales, (b) the agreement of relationships between measured variables and relationships predicted by theory. Significant or near significant relations with validity criteria were found with respect to many of the test dimensions.

The findings are sufficiently encouraging, we believe, to warrant further exploration of the technique.

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BIOGRAPHICAL NOTE

MURRAY HORWITZ took his undergraduate work at the College of the City of New York specializing in mathematical logic. During the war he worked in Methods Engineering with the General Motors Corporation, later serving in the Navy. In 1946, he resumed graduate study under Kurt Lewin at M.I.T. and was Assistant Study Director at the Research Center for Group Dynamics. Later he worked as Study Director at the Survey Research Center, University of Michigan, where he directed a survey on public attitudes toward mental health. Since receiving his Ph.D. in social psychology at the University of Michigan in 1950, he has been Assistant Professor in the Bureau of Educational Research, University of Illinois. He has engaged in training and research work at several sessions of the National Training Laboratory in Group Development. At present, under an Office of Naval Research grant, he is conducting research dealing with group effects on interpersonal hostility and motivational persistence.

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