T-GROUP EDUCATION AND LEADERSHIP EFFECTIVENESS: A REVIEW OF THE EMPIRIC LITERATURE AND A CRITICAL EVALUATION

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The Controversy

T-GROUP education has been the subject of more controversy and has commanded more expenditure of managers' time and money and more attention from behavioral scientists and business school faculty members than perhaps any management technique to date. Ever since the early writings on T-Group experiences there has been controversy over both the propriety and effectiveness of using T-Groups as a method of management training.

In 1961, Tannenbaum, Weschler, and Massarik reported the results of several empirical inquiries conducted by the UCLA Human Relations Research Group from 1950 to 1960. The reactions to their report, as with most claims for the value of T-Group training, were highly mixed. Bach, a psychologist (in Tannenbaum *et al.*), stated, "Here is a practical, corrective approach to one of the basic evils in industrial corporate life, the misunderstandings, tensions, and conflicts due to misperceptions and lack of reality orientation" (Tannenbaum, Weschler & Massarik, 1961, p. 396).

Dubin, a sociologist, concluded that sensitivity training can well result in changes in perception which, because of differences between organizational and individual expectations, will result in an organizational pathology in the form of threat to continuity (Tannenbaum *et al.*, 1961).

At a 1963 Cornell University conference on management development, Odiorne (*Business Week*, 1963) severely criticized T-Group training on the grounds that: (1) it is not training—

since the objectives and process have not been well defined, are not yet well understood, and are not within the control of the instructor; (2) it has been known to result in serious mental disturbance for the participants; and (3) it is inconsistent with business and the economic world we live in.

In rebuttal, Argyris (*Business Week*, 1963) said that in the T-Groups conducted by the National Training Laboratories (NTL) there have been only four "nervous breakdowns" among 10,000 students, and "all of these people had previous psychiatric histories." He stated further, "A trainer can only go so far in preventing destructive experience." The important thing is that people in T-Group training "can decide how much they want to pay psychically" for what they are learning. Professor Argyris also denies the charge that T-Group training is psychotherapy, though it does aim to change behavior.

And, in a recent review of a book concerned with T-Group training, *Behind the Executive Mask*, Wayne Kirchner (1965) states:

> Do we really want to rip off the "executive mask," which hides from the individual his true feelings, desires, and knowledge of self? Most people have taken many years to build up this "mask" or to build up their psychological defenses. While it can be very enlightening to find out that nobody loves you and that some people think you have undesirable traits, this can also be a very shocking experience to individuals and not necessarily a beneficial one (p. 212).

In a recent book, Schein and Bennis raise several questions concerning the appropriate use and the dangers involved in the use of T-Groups. In reviewing this book, Shepard (1966) states, "Perhaps it's healthy to keep these concerns explicit; perhaps it's neurotic" (p. 57).

It should be recognized that many proponents of T-Group training, including Professor Argyris, have conducted a substantial amount of research to test their own assumptions and hypotheses. It is to their credit that even though some of this research has resulted in disappointing findings, they have continued to publish their findings, criticize their own efforts, and revise their own procedures and position on the issues.

For purposes of defining "T-Group" education, I shall quote Professor Paul Buchanan (1964C), who states:

> Training approaches meriting the name of laboratory (or T-Group) utilize: (1) a face-to-face, largely unstructured group as a primary vehicle for learning, (2) planned activities involving interaction between individuals and/or between groups, (3) systematic and frequent feedback and analysis of information regarding what happened in the here-and-now and what effect it had, (4) dilemmas or problems for which "old ways" of behaving for most of the participants do not provide effective courses of action (and thus for which innovative or "search" behavior is required), and (5) generalization, or reformulation of concepts and values based upon the analysis of direct experiences.

This, then, is Buchanan's explanation of what constitutes "T-Group" education. It will serve as the working definition for this paper.

Confusing Evidence

There is a substantial amount of post-training testimony, casual observation, and recall concerning both the process and the effect of T-Group education. Unfortunately this information is contradictory and confusing.

The National Training Laboratories has conducted a considerable amount of post-training survey research for purposes of determining the reaction of participants to the training both at the completion of T-Group programs and after the trainees have returned to the job. Such post-training opinions have revealed much enthusiasm and some disappointment over the T-Group experiences (Bradford, 1953). Although in the minority, some post-training responses have revealed skepticism, disappointment, and, in some cases, even resentment for having been subjected to unpleasant experiences.

Klaw (1965) states that although the majority report they have been changed for the better, some people return from laboratory training liking themselves less and not knowing what to do about it. He cites a post training survey of more than 100 graduates of a laboratory sponsored by Western Training Laboratories, an affiliate of the National Training Laboratories, that revealed that one graduate in 10 felt pretty much this way. He quotes one man as saying the training had left him "in a very disturbed state. . . . I seemed to have lost all the positive aspects of my self-concept. I realized that I had built up concepts about myself that were untenable. But I had not gained anything to replace them."

One post-training opinion survey revealed that two-thirds of the participants viewed the T-Group program as slightly more helpful than useless and one-third viewed the program as helpful. Participants saw themselves changing in seven or eight measurements of behavior. Approximately half the changes were positive and half of the changes negative (Foundation for Research on Human Behavior, 1960).

Significance of the Controversy

One might ask whether a single training technique is worth so much controversy. There are three important reasons why this controversy is a significant one for both students and practitioners in the field of management.

First, a tremendous fund of resources is currently being allocated to T-Group education. Several graduate schools of business include at least one course in T-Group education as a required part of both their regular graduate programs and their advanced management programs for practicing executives. As of 1962, Miles (1962) reported that 4,000 people have attended T-Group training programs sponsored by the National Training Laboratories, that approximately 900 persons attend NTL labs each year, and that several large organizations sponsor their own laboratories in the United States and in as many as eleven other nations. The American Management Association recently inaugurated and is now conducting T-Groups on a rather large scale.

A second reason concerns the alleged psychological damage to participants. Although there is little scientific evidence of such damage reported in the literature, there are anecdotal reports of psychological disturbances. Such reports are not well documented, but there is reason to believe this damage is possible as a result of the properties of the T-Groups and the anxiety deliberately induced as part of the T-Group experience. This second reason will be discussed in more detail later.

The third reason the controversy is significant is that it raises important ethical questions. Opponents of the T-Group movement argue that the validity of the method has not been demonstrated, that possible damages could be severe, and that it is therefore unethical to offer T-Groups on a commercial

basis and to make claims that they will result in greater awareness of oneself, greater sensitivity to the needs of others, and, in general, improved human relations and management practices. The opponents further argue that T-Groups are a form of manipulation that may result in serious psychological damage to participants and are based on a methodology that is an invasion of personal privacy and not properly within the province of employer-employee relations, consulting firms, or business schools.

In an attempt to clarify the issues and evaluate the evidence pertinent to the controversy it is necessary to consider (1) what happens to the participants throughout the T-Group experience and (2) what effect T-Group training has on the participants' personalities, perceptions, attitudes, and job behavior.

After reviewing the evidence, I shall draw conclusions pertinent to the effective application of T-Group education and raise several questions that I believe must be considered when trying to determine the appropriateness of T-Groups for specific management development objectives.

Studies Concerned with Events throughout the Training

Studies concerning the T-Group process provide a basis for speculation concerning the psychological effects of T-Groups on the participants.

Stock and Thelan (1958) studied the relationship between group progress and emotionality during group growth. Two observers made independent judgments of a sample of statements made in each meeting by the participants. These observations revealed that work groups passed through four developmental phases. The first phase, an exploratory phase, was primarily concerned with establishment of procedures and goals. Emotional tones displayed varied from quite flat to quite excited.

In the second and third phases, groups experienced intense feeling. High excitement was generated along with personally-oriented activity infused with considerable affect. The authors report, "Affect-laden statements which are not immediately useful to work tasks lead to brief periods of massively expressed

emotionality and loss of work orientation from which the group recovers quickly." Finally, the fourth phase is accompanied by diminished affect and high-level work performance.

Thelan and Dickerman (1949) conducted a content analysis of tape recordings of 15 two-hour training group meetings. Based on this content analysis plus notes from leaders of seven other groups, Thelan drew the following tentative conclusions: In the first phase of training, various members of the group quickly attempted to establish their customary places in a leadership hierarchy, in an attempt to establish the "pecking order" of the group. Next came a period of frustration and conflict aroused by the leader in nullifying the pecking order and the remnants of authoritarian atmosphere in which the concept of pecking order is rooted. This phase is followed by a phase of cohesiveness, friendliness, complacency, and smugness. The fourth and final phase witnesses the development of a sense of purpose and urgency along with a retaining of the group-centeredness and sensitivity evolved in the third phase.

In a similar study, Tannenbaum *et al.* (1961) report content analysis of diary entries made by T-Group participants throughout their training. The authors' analysis revealed that "... emotional response to sensitivity training is quite high, and often is experienced as disturbing."

Bass (1962a) asked 30 supervisors, engineers, and administrators from the same company to complete a mood check list at specified times throughout training. He found that anxiety, egotism, aggression, and depression varied only slightly throughout a T-Group session. However, the introduction of simulated competition had the effect of increasing feelings of aggression among losers, but not of reducing such feelings for winners. It should be pointed out that Bass's experiment was conducted within the framework of a more structured T-Group approach than those reported above.

Although these studies lack rigor in some respects and when viewed individually are suspect, when they are viewed collectively there appears to be substantial consistency among them. These studies suggest that people frequently experience high levels of anxiety in the T-Group during the middle of the process, and at the same time feel unsettled and uncomfortable

about their own opinions and the comments made to them by others. As the T-Group experience continues, this anxiety recedes. If we were to chart this on a conceptual graph, the pattern of the data would be that the anxiety rises during the middle of the T-Group and then declines again.

This is not surprising, and T-Group proponents would neither disclaim this anxiety nor state that it is undesirable. For example, Burke and Bennis (1961), in a review, consider it a part of the theoretical basis of T-Group training:

> The usual factors we associate with organization life are conspicuously absent at the outset of the T-Group.... It is hoped that this ambiguous and *anxiety-producing situation* will create an atmosphere in which individuals can identify and consciously diagnose the interpersonal and group problems which emerge, as well as gain deeper understanding of their own reactions toward authority figures, colleagues, needs for control, intimacy, belonging, etc. (Italics mine)

Studies Concerned with T-Group Effects

Studies concerned with the effects of T-Groups can be divided into those concerned with changes in participant characteristics and those concerned with changes in behavior on the job. Participant characteristics have been generally measured by participant responses to questionnaires and tests, whereas behavior has been measured by the observations of others who work closely with the participant in the actual job situation.

Effects on Participant Characteristics

Kernan (1963) conducted a well-designed, controlled experiment to test personality changes induced by T-Groups and obtained rather contradictory and confusing results. Employing two experimental and two control groups consisting of 23 persons each, he found no mean changes in responses to measures of authoritarian attitudes, opinions toward the use of different leadership styles, or changes in Thematic Apperception Tests of tolerance, toughness, friendliness, interpersonal problems, dominance, or nurturance. He found that trained subjects changed their responses to a measure of Machiavellianism (tendency to manipulate people) and a measure of verbal reactiveness, but their responses seemed to be influenced largely by

the conditions under which they completed the questionnaires. Those who completed the questionnaire under actual job conditions increased in Machiavellianism and decreased in verbal reactiveness significantly more than in trained groups, whereas those who completed the questionnaire off the job showed changes in the opposite direction on these scores. Kernan concludes that his findings may be due to the fact that such personal changes may not result from short periods of training and that either differences in trainers or test conditions influenced responses.

Bass (1962b) studied the effects of T-Group training on the perceptions of trainees. To measure perceptual effects, Bass queried each participant who saw parts of the movie, *Twelve Angry Men*, by the use of the incomplete sentence technique. For example, each participant responded to such questions as: "The reason that the architect (Henry Fonda) went to the drinking fountain was that _____" or "The old man changed his vote because _____."

The responses of ten randomly-selected subjects, drawn from the 36 available, were content-analyzed and a sensitivity score obtained. Subsequently, members from three different sensitivity laboratories were given the same test. However, only one group of the three samples was given the test prior to training. From his results, Bass concluded that:

> Performance on the test is significantly increased as a result of the management training laboratory. The scores match opinions of peers and staff psychologists' appraisals... the inference being that management training laboratories do increase participant's sensitivity.

Argyris (1962) evaluated T-Group training in one organization for its impact on perception and written responses of those who participated in the training. Argyris used before and after questionnaire measurements of 7 control subjects and 11 experimental (T-Group) subjects. A second measurement of the effects of the training on the trained group was derived from the rational and interpersonal disagreements that each group experienced.

Argyris concluded (with some reservations concerning the methods, controls, long-term effects, and applicability) that the training had met previously established objectives in vary-

ing degrees. However, due to the limitations of his sample size and to the fact that no tests of significance of differences were applied to the data, his conclusion appears somewhat risky.

As part of the same study, Argyris collected data based on interviews with subordinates of the experimental group. These subordinates responded positively to the interview questions and gave strong testimony that the T-Group method had induced change. However, no control was provided to minimize interviewer or interviewee bias. Argyris noted that his function as both T-Group trainer and examiner may have influenced subordinates' responses toward a more positive expression.

Harrison (1962) conducted a follow-up evaluation of the Argyris T-Group study by asking members of the organization to fill out questionnaires describing other persons in the organization. Respondents described T-Group members and other members of the organization who did not have T-Group training. Respondents were instructed to select 10 persons with a wide variety of personal characteristics who were well known to themselves. One control group and two experimental groups participated. The first experimental group consisted of 11 managers, and the second of 8. Members of one of the experimental groups described each other both before and after training. The other experimental group members described persons other than those who participated with them in the training program.

Harrison hypothesized that in every experimental case there would be a significant shift after training toward the use of more interpersonal descriptions. He states:

> This prediction was confirmed for all conditions except that in which the first experimental group described 10 associates who did not participate in the training.... Under this condition there was no increase in the use of interpersonal and emotional descriptions.

Harrison's findings show that the training affected the perceptions of the members toward each other, but not toward people who were not in T-Groups with them.

Burke and Bennis (1961) conducted an analysis of the perceptual transitions of 84 T-Group members incurred during training. To control the effect of variables other than the T-Group training, the sessions were conducted under laboratory

conditions. Pre-post test measurements revealed that statistically significant perceptual changes took place. They write:

> Members of T-Groups, during the course of their training experience, became more satisfied in their perception of self, moved their actual percepts in the direction of their ideal, became, at least by certain measures, more congruent in their perception of others, and came to see others more as the other individuals see themselves. Results lend some support to the claims of human relations practitioners that participation in a training group can be beneficial in re-orienting perceptions of others, and that the training group, and the concept of total laboratory atmosphere, is a powerful medium of change.

Dunnette (1962, p. 285) reports a study conducted by Massarik and Carlson designed to assess the possible personality changes attributed to sensitivity training. Based on a before and after administration of the California Psychological Inventory, Massarik and Carlson found that 48 hours of sensitivity interaction among 70 business students brought about only minor changes in the expected direction of increased spontaneity, and slightly lowered overall use of control.

Using the Gordon Personal Profile as a before and after measure of students' perceptions of themselves and their trainers, Lohmann, Zenger, and Weschler (1959) tested 65 college students over a 16-week period of biweekly sessions in sensitivity training. They hypothesized that students would see themselves as more adequate after the training, but they found no significant differences in group self-adequacy mean scores after the training. They explain this finding as being due to the fact that they were dealing with a group of non-neurotic subjects whose before training self-adequacy was already high.

The results of a study by Haiman (1963) on changes in open-mindedness among college students brought about by participation in group sensitivity training sessions revealed that there was a significant shift in attitude as measured by a composite open-mindedness scale. A total of 425 subjects, who responded to items from Adorno's California F Scale, Rokeach's Dogmatism Scale, and some items contributed by Haiman, participated in a 10-week course at Northwestern University. Haiman found that low scorers on the initial test shifted significantly toward more open-mindedness on the post-test than did high initial scorers. The author cites such

shifts as evidence for the effectiveness of sensitivity training in changing attitudes toward greater open-mindedness and ascribed the results to the fact that high scorers, being already more open-minded at the outset, stood to change little on the variables measured. That is, their change scores were limited by the upper boundary of the scale.

In an attempt to measure participants' perception of the ongoing process of sensitivity training, Lakin and Carson (1964) had four groups participate in 16 meetings each and measured self-report responses to 11 variables. They found that, while there is a clear perception of the phases of development of the group in the minds of the sophisticated practitioner, there are no such clearly seen phases of development among the participants. He concluded that group experience may be no less unique than individual experience. By graphing the pooled self-reports of group members among the four groups, he found he could not predict the perception of even such clear-cut dimensions as cooperativeness or competitiveness.

Stock (in Bradford *et al.*, 1964) reports studies by Glidwell and by Miles, Cohen, and Whidman based on participant responses that reflect desired individual learning. Stock reports that Glidwell found that 71 percent of the members changed their self-perceptions in the direction of greater involvement and greater concern about developing skill and awareness in interpersonal relations. Sixty-seven percent increased their belief that the ability to give service to others is a crucial factor in problem solving and 42 percent gained constructive change concerning the interrelationships between themselves and others in problem-solving behavior.

Miles, Cohen and Whidman (Bradford *et al.*, 1964), in a study designed to evaluate an individual's diagnostic ability and his sensitivity to the feelings and behavior of others and also to group decisions, found that there was some improvement in the variable "sensitivity to feelings." It is not clear from Stock's report whether or not control groups were used or whether the measures of change have been validated against any job-performance measures.

Carron (1964) conducted an experimental field study to de-

termine the effect of T-Group training on the opinions of Research and Development managers toward two kinds of leader behavior. He asked the participants to complete the Leader Opinion Questionnaire before and after training, and he compared the changes in responses to the responses of an untrained control group. The participants were asked to describe, by means of completing Likert-type questions, the amount of consideration and the amount of initiating structure the "ideal leader" exhibits. The consideration dimension measures the degree to which a leader shows concern for the well being of his subordinates, does little things for the group, uses participative decision making and is generally supportive of his subordinates. The initiating structure dimension measures the degree to which the leader plans, organizes, and controls the work of his unit and his subordinates, the degree to which he establishes a structure to guide his subordinates by making known his expectations, letting them know where they stand, and defining responsibilities and procedures. Carron found that a significantly greater number of the trained group changed their opinions concerning ideal leader behavior. The training had the effect of causing them to place higher value on consideration and less value on structure. In other words, his findings suggest that the training emphasized that consideration is desirable and structure is undesirable, and that the participants responded accordingly by changing their opinions concerning what is desirable leader behavior. Although Carron interprets his findings as evidence for desirable change resulting from the training, I would interpret his findings differently. There is substantial evidence to suggest that behavior characterized as high consideration-high structure has frequently been found to be associated with effective and successful leadership for widely different populations (Fleishman & Harris, 1962; Halpin, 1957; Oaklander & Fleishman, 1964; Rush, 1957).

What Carron's data do suggest, when viewed in the light of previous research, is that an opinion change occurred as a result of the T-Group training and that after the training the trainees believed more in the need for one kind of desirable leader behavior, namely consideration, and less in the need for a second kind of behavior, namely structure, which has been

found in previous research to be significantly associated with highly evaluated and successful leadership. As we shall see in a later section, Carron's findings suggest an explanation for some of the undesirable behavioral effects associated with T-Group training.

Effect of T-Groups on Behavior

Several studies have been reported that deal with the effect of T-Group experience on the job behavior of the participants in the actual work situation. As one would expect, the findings are somewhat mixed, but there does appear to be a thread of consistency that runs through them.

Miles (1960) reports a well-controlled experiment designed to evaluate the effects of laboratory training on job performance. To measure performance change, Miles used the Ohio State Leader Description Questionnaire (Stogdill & Coons, 1957), the Group Performance Scale (Pepinsky, Pepinsky, Minor & Robin, 1959), and an open-ended post-training measure of perceived change which Miles developed for this experiment.

No significant performance changes directly attributable to the training were revealed by his before-and-after measurements. However, 73 percent of the experimental group members and 17 percent and 29 percent, respectively, of the matched and random control groups showed change at the .01 level of significance, based on the measure of perceived change. Further, the degree of perceived change correlated significantly ($r = .55$) with ratings by trainers of the amount of learning judged to have taken place for each participant.

The validity of Miles' perceived change scores might be questioned since other before-and-after measures revealed no change, and since the Ohio State Leadership Scales have previously been demonstrated to be sufficiently sensitive to detect changes in human relations behavior (Fleishman, Harris & Burtt, 1955). However, Bunker (1965) conducted a similar evaluation of T-Group effects and collected data which lend credence to the post-training perceived change measure used by Miles. To check the validity of the perceived change ques-

tionnaire, Bunker asked several raters to describe each participant. He reports:

> Two-thirds of the experimental subjects as compared with one-third of the controls had one or more specific observations of change confirmed by concurrence among the reports of two or more describers. The occurrence of describer agreement with this frequency for both groups of subjects indicates that a good portion of the subjects' change reports are objective. The difference in proportion of agreements between the two groups supports an interpretation of the data . . . as more substantive than artifactual. . . . Verified changes occur more frequently for experimental subjects than expected, even when the expectation is based upon the total number of changes mentioned for all subjects in each group. These data permit us to place some confidence in the pooled observations of the several observers for each subject, and further indicate that the verified-change score is an even more powerful discriminator between experimentals and controls than the total change scores.

Using the perceived change measures described above as his criteria for on-the-job effects of T-Group training, Bunker (1965) found: (1) A significantly greater proportion of experimental subjects than controls were in the middle and top thirds of the distribution of change scores ($p < .001$). This finding was replicated by tests of subsamples of the same data. (2) On-the-job effects of training are significantly correlated with participant learning scores, based on ratings by peers in the learning group of the amount of behavior change evidenced over the 2-week training period. It will be recalled that Miles found a similar correlation. Bunker concludes that "these data permit an interpretation adding support to the proposition that individual learning outcomes from laboratory education are transferable to other environments and relationships" and that "most of the covariance is attributable to those in the upper third of the distribution scores based on ratings of adaptive change in the laboratory." (1965, p. 11.)

Underwood (1965) reports a field experiment in which the effects of T-Group training were measured in terms of positive and negative changes in personal, interpersonal, and nonpersonal behavior as reported by work associates of the trainees. The training consisted of a 15-session program conducted at the rate of one 2-hour session per week. The experimental subjects were 15 supervisors drawn from several departments and organizational levels in an engineering and manufacturing

plant in the electronics field. The control group consisted of 15 subjects who were matched with the experimentals by department, supervisory level, age, and sex. Observers were instructed to report anonymously, to the experimenter, any changes they observed in the subject's characteristic behavioral pattern. They were not informed about the training or other aspects of the study design. The observation period covered the 15 weeks of the course and extended 15 weeks beyond the end of the course.

Although no statistical tests of significance were applied to the findings, there appeared to be large and meaningful differences in the observations of the two groups. Of the total of 15 subjects in each group, 9 in the experimental group were observed to have changed one or more times as compared with 7 who were so observed in the control group. However, the frequency of incidents reported for the experimental group was 25 as compared with 11 for the control group, a ratio of 2.3 to 1. The observers coded each change according to whether it resulted in more or less effective supervision. Fifteen of the experimental observations were said to increase supervisory effectiveness of the subjects, seven decreased their effectiveness, and three had no influence on effectiveness as compared with the control observations of eight increases, two decreases, and one no influence observation. The author reports, "The experimental subjects were reported to show decreased effectiveness in the personal category in a substantial number of reports. Analysis of these changes reveals a heavy emotional loading in the nature of change. It is speculated that these subjects were venting emotion to a greater degree than usual and to the observers, operating in a culture which devalues such expression, this behavior yielded a negative evaluation." These findings appear especially relevant to the question of T-Group effects on leadership behavior. One might speculate that the direction of change depends on factors associated with the trainee, the observer of the trainees, or the situation in which the trainee supervises. While not in themselves conclusive these findings clearly suggest that T-Group training is a powerful force with the potential for either desirable or undesirable effects.

Boyd and Elliss (in Buchanan, 1964c) evaluated the relative effectiveness of a 2-week T-Group demonstration and lecture program as compared to a 2-week course in administration built around case discussions and lectures. The assessment was made in terms of changes in the participants reported in interviews by the supervisor, two peers, and two subordinates of each participant. These interviews were conducted 6 weeks and again 6 months after completion of the courses. The laboratory subjects consisted of 42 people who attended three different T-Group programs. The administration course subjects consisted of 10 men selected to match as nearly as possible the participants in the laboratory group. In addition, 12 men, roughly equivalent to the laboratory participants in terms of age, length of service, education and kind of position, but who had not attended either of the courses, served as a control group. Observations of each person were checked for inconsistency between interviewees.

Buchanan reports that, consistent with expectations, the observers of the non-trained managers reported the least number of positive changes followed by the observers of the administration course participants. The greatest number of changes reported was by the observers of the participants of the laboratory course. Differences in number of observed positive changes on the part of the laboratory participants, as compared with the non-trained group and the administration course participants, were both significant beyond the 5% level of confidence. More laboratory participants were observed to have made undesirable changes than members of either the non-trained group or the administration course, consistent with findings reported by Underwood above.

The researchers categorized what the participants said they had learned and concluded that laboratory learning is characterized by learning about group behavior such as the loss of the contributions to the group experienced through failure to listen, the effect of pressure in creating resistance, and how unstated purposes often impede group work. They state that although learning about other people occurred in both groups, the laboratory resulted in more direct learning by experience as against conventional training, which tends to an intellectual

learning about the subject. The observers also reported a greater variety of changes on the part of laboratory participants—an average of 11 per class in the three laboratories, as compared with four and five, respectively, for the participants in the two administrations seminars.

Argyris (1965a) reports a study in which he developed and tested a set of categories to measure the interpersonal competence of participants of group efforts, and then measured the effects of a T-Group program in terms of interpersonal competence. To develop the measure of interpersonal competence, two graduate students and Argyris audited tapes of problem-solving meetings, T-Groups, decision-making groups, and case study groups, and assigned scores to behavior units. A unit consisted of a single individual's verbal contribution to the group on a specific topic within a specific category of rating. Inter-rater reliability was .86, .70, and .80 for the different studies. The total number of behavior units scored was 4,958.

The hypothesis was advanced that the higher the plus scores, the greater the interpersonal competence. To test this hypothesis, the behavior of 51 members of four T-Groups was scored. Minuses were subtracted from plus signs to arrive at an overall competence score. Each individual was ranked by score relative to all other individuals in his T-Group. These scores and rankings were not divulged to the staff or to the executives. Two staff members and the observer were asked at the end of the program to rank each individual in their group. These rankings were used as criteria to test the validity of the competence scores. Scores were then compared with rankings. Agreement between scores and rankings was significant at the .05 level of confidence, thus suggesting validity of the scores. To evaluate the T-Group, 21 participants evaluated their experience in terms of their satisfaction with the T-Group. There was agreement between expressed satisfaction and interpersonal competence scores for 17 of the 21 respondents. The data thus suggest that the men's perceived degree of *learning and satisfaction with the laboratory experience* correlated highly with the quantitative scores. This suggests that people high in interpersonal competence, as measured by this index, are more likely to be pleased with T-Group experience.

Competence scores were also computed throughout the T-Group sessions to describe individual learning while in process. Individual learning curves were not smooth. Low learners had higher negative scores and were less able to correct defensive behavior although they could do so. Moderate learners were able to correct defensive behavior, but not as much as they were able to increase their plus behavior. High learners tended to have more ability to be open, help others, and to experiment. They seemed to contribute more to the group rather than merely learning from it.

Argyris (1965b) also used this measure of interpersonal competence to evaluate the effects of five semi-structured T-Group meetings on the behavior of a board of directors. Category scores for the first three sessions were compared to the last two sessions of the change program, and they revealed significant increases in five dimensions of interpersonal competence. Seven board meetings were then analyzed after the change sessions. These meetings were conducted throughout the 14-month period following the change programs. The first five were held within six months after the change sessions. Significant changes in "concern for others' feelings and ideas," "openness," and "helping others" were positive. Antagonism scores decreased. In-balance (similar to cognitive dissonance scores) also decreased. Comparison of scores for board meetings immediately before the change session with two meetings conducted 8 and 12 months after the change session indicated significant desirable changes in behavior. Finally, a comparison of two pre-change program board meetings with one meeting 14 months after the program replicated these findings.

One of the most striking results of the above studies (at least to me) is the lack of contradiction among the findings. All six studies revealed what appear to be important positive effects of T-Group training. Two of the studies report negative effects as well. These findings take on special significance when one considers the rigor with which the studies were conducted. All of the studies employed control groups to discount the effects of factors other than the T-Group experience. All of the evidence is based on observations of the behavior of the participants in the actual job situations. No reliance is placed

on participant response; rather, evidence is collected from those having frequent contact with the participant in his normal work activities. The source of the evidence is especially important because of the possibility of bias resulting from self descriptions of participants.

In addition to the above studies, which appear to meet the conventional requirements of social science research, there are several additional studies or reports of experience that warrant inclusion here because they suggest some explanations for the findings of the above studies.

Argyris (1962) conducted an experimental evaluation of the effect of nine T-Group meetings followed by four "organizational diagnostic sessions" in which the group addressed itself to the diagnosis of problems that would have required meetings under ordinary conditions. The opinions and expressed feelings of 10 experimental subjects were compared with those of seven controls who did not attend the program. The two groups were roughly matched at the outset for (1) the values that they held regarding effective human relationships, (2) the degree of perceived conformity in the organization, and (3) the degree of interpersonal competence scores. Interpersonal competence scores were derived from content analysis of tape recordings of ten meetings. The scores reflected the percentage of times that a subject perceived his influence attempts in the meeting to be successful.

To evaluate the effects of the program, Argyris employed a combination of his own observations and interviews with the subjects and their subordinates and questionnaires administered to the subjects.

Argyris reports observing several incidents throughout the meetings that reflected changes in attitudes, perceptions, and behavior of the experimental group members. He also reports that members of the control group observed changes in behavior but that a "wearing off" phenomenon was observed by them after the first several weeks after the laboratory. During the program, interviews with five experimental members arose spontaneously. In all cases, the members reported positive experiences. Argyris draws the following conclusions based on

his interviews and observations throughout the laboratory program.

> The learnings developed by the experimental group surpassed ours, as well as the executives' expectations. They reported, and we observed, within the experimental group increases in such qualities as openness, trust, confidence, and decreases in conformity, management by detail, crises, fear, and conflict. However, we found that initially the experimental group faced important difficulties in communicating their newly learned values to, and using them with, the control group and others who had not participated in the laboratory. The experimental group turned more to changing policies and practices to influence the subordinates rather than through interpersonal relationships. This seemed to have a positive effect. The subordinates perceived these changes as proof that the *superiors were in earnest.*
>
> It should not be interpreted that the executives were able to utilize their values as frequently as they wished. There were many factors preventing them from doing so. Not the least were the continuing use of the "old" values by corporate headquarters, the resulting crises, as well as the confusion and lack of skill on the part of the subordinates to understand and work within the framework of the new values. Also, many routines are more effectively carried out by using the traditional values. I estimate that during the everyday activities the executives were able to use their "new" values from 25 to 50 per cent of the time. However, when they used the "old" values, they were aware of their true impact. The unintended quality of the impact was greatly decreased. Consequently, the executives had to take on responsibility for the "negative" outcomes (Argyris, 1962, pp. 279, 280).

In the evaluation of the program conducted by Argyris, Harrison (in Argyris, 1962) also measured changes in the perceptions of the trainees toward persons who did not attend the T-Group program with them. He found that, although the participants changed their perceptions of each other, the same group failed to show a significant change in its way of seeing colleagues who did not attend the program. Furthermore, they reported great difficulty and frustration in extending new ways of responding to others who did not participate in the training.

Thus, Harrison's findings fail to demonstrate that any positive effects of the T-Group training were carried beyond the interpersonal relationships created within the trained group itself. One objective of the program was to increase the participants' awareness of interpersonal factors in *general.* The program undertaken for this study appears to have been a disappointment in this respect. Harrison also reports that the

participants incurred some frustration in attempting to apply new behavior on the job.

Clark and Culbert (1965) conducted a study to determine in what kind of persons and under what conditions behavioral change is most likely to take place as a result of T-Group participation. To measure the effect of T-Group training, two raters analyzed participants' communications with other persons. Attention was paid to the flexibility, openness, and fluidity of the participant. In addition, they obtained measures of the perceptions of T-Group members relevant to other members of the group and the training situation itself. Based on statistical analysis of individual scores, they found that the results of T-Group training varied: (1) four out of 10 participants improved significantly (.01); (2) these four improved in the same way that previous research shows participants in psychotherapy would be expected to change; (3) one member worsened significantly; (4) the mean group score remained unchanged.

Improvement was unrelated either to the participant's perception of the trainer, or his perception of the group. However, a significant positive relationship was obtained between individual change and the number of mutually perceived therapeutic relationships. In other words, those who changed most felt that they were in a supportive social relationship with other members of the group.

Although these findings are based on a very small sample, and no control group, they do suggest some of the possible determinants of change at work in T-Groups.

Buchanan and Brunstetter (1959) conducted an evaluation of an organization development program in which a modified form of T-Group training was the main "input." All of the members in one large department of a company participated in a series of T-Groups, with higher levels attending first. Using as the measure of change a questionnaire filled out by all members of management in the department, and a control department as a means of assessing the extent of improvement not attributable to the program, they found that significantly greater improvement occurred in the working of the trained department. Responses of two-thirds of the trained supervisors were reflected in improvement of their work units. These findings must be treated with some caution because the measure of change is based on responses of the participants of the program rather than independent observers of participant behavior.

Buchanan (1964a, 1964b) and Blansfield (1962) report T-Group programs administered to entire organizational units that resulted in substantial positive changes in delegation of authority, managerial performance, teamwork and effectiveness of the organizational unit. Unfortunately no quantitative assessment of change is reported and control groups were not used.

On the more negative side, Buchanan (1964c) reports an incident in which the use of T-Groups throughout an organization resulted in rather traumatic effects on an entire department. "... Less than ... 2½ years after the development program was begun the program was discontinued, the head of the department was replaced, and the organization development (training) staff accepted jobs in other companies. Why? So far as could be determined it was because the style of management and the approach to problems which were emerging from the developmental effort came into conflict with that practiced at higher levels of the company (Buchanan, 1964c, pp. 13–14)." And, Schein and Bennis (1965) report three incidents in which participants of T-Groups experienced more tension upon return to the job after T-Group training as a result of increased conflict with the people in their organization who held values and attitudes incompatible with those recently acquired by the T-Group participants. It should be noted that this experience is not unique to T-Group training. Field experiments with other training methods have yielded similar findings (Fleischman, Harris & Burtt, 1955; Sykes, 1962).

Conclusions Based on the Evidence

In the light of the above findings, it appears safe to draw several conclusions regarding the use of T-Groups for the purpose of management or organizational improvement. It has been shown that T-Group training is not only capable of inducing anxiety, but that the anxiety is an intended part of

the training. Such induced anxiety may have the very unrewarding effect of unsettling, upsetting, and frustrating those subjected to it. The method may also have the intended effect of inducing more consideration for subordinates, less dependence on others, less demand for subservience from others, and better communication through more adequate and objective listening.

Several questions may now be raised, pertinent both to the management faced with a need for change, and to the social scientist whose particular skills are requisitioned for the accomplishment of the manager's aims. It behooves both agents of change to consider carefully whether or not T-Group training is the most desirable method, where, and when, such methods can most profitably be utilized in light of current awareness of overall effects.

My questions are grouped into two categories: those concerning effective use of T-Groups, and those concerning ethical issues inherent in the method.

Effective Use of T-Groups

Four questions are cited to guide the manager in determining when T-Group training is appropriate to achieve his specific goals.

1. *Are the changes that T-Group training induces the kind required for more effective leader behavior?*

We have seen that T-Group training can result in better listening, more supportive behavior, more considerate managers, more sensitive people, and less need for dependence. Research indicates that these values are associated with effective managerial performance for certain kinds of organizations and certain kinds of subordinates. There is evidence that these values, however, do not always lead to more effective organizational performance. For example, one might ask: "Should combat sergeants have these characteristics to command effectively in the field?"

We know from a vast amount of evidence that there are situational factors which determine the kind of leaders and followers required. Fundamental to the determination of effective leadership practices are the immediate superior of the

leader, the expectations, attitudes, and abilities of the followers, and the nature of the organization in which the leadership is to be exercised. Studies by the Ohio State Leadership Group (Shartle, 1956) and the University of Michigan Institute of Social Research (Likert, 1961), demonstrate that the behavior patterns taught in T-Groups, such as consideration and sensitivity, only partially determine leadership effectiveness, and these characteristics are by no means universal. Dr. Warren Bennis (1963), a proponent of T-Group training, states the argument this way:

> It is not possible at this point to be certain whether these new organizational values lead to improved performance ... for example, these new change-induction processes emphasized openness rather than secrecy, superior-subordinate collaboration rather than dependency or rebellion, internal rather than external commitment, team leadership rather than a one to one vertical relationship, authentic relationships rather than direction or coercion, and so on. What then happens to status or power? What about those individuals who have a low need for participation and/or a high need for structure and dependence? And, what about those personal needs which seem to be incompatible with these models, such as a high need for power or aggression? In short, what about those needs which can be expressed and best realized in a bureaucratic mechanism? Are these people expected to be changed through some transformation of needs, or are they expected to yield to a concept of human nature incompatible with their own needs?

While T-Group training is a powerful tool for inducing change, the change may be either beneficial or detrimental to both the organization and the individuals involved. If we make a few members of an organization independent and considerate, and they return to an organization which does not reward independent and considerate behavior, what would happen to these people? Will they be more or less effective, satisfied, and accepted?

Generally, the T-Group experience results in more considerate employee-oriented leader behavior. None of the studies reviewed above suggests that T-Groups increase the trainee's use of initiating structure. Although increased consideration may be desirable, it may even be incurred at the cost of decreases in other desired opinions or attitudes toward behavior. For example, Carron's findings revealed that after training, as opposed to before training, managers held the opinion that structured behavior was less desirable (Carron, 1964).

2. *Can the organization tolerate the changes in the individual if the T-Group is successful?*

The T-Group experience has been shown to result in changes in perception and opinions. When such changes are inconsistent with the values and attitudes held by members of the organization, it is likely that the T-Group participant will find himself in role conflict over disagreements between himself and others in the organization with whom he must deal if he is to perform effectively and to remain a satisfied member of the organization. The study by Harrison and the cases reported by Buchanan, Schein, and Bennis all suggest strongly that such conflict is induced occasionally as a result of T-Group training. Again, the findings reported by Carron shed some light on the particular values that are likely to result in conflict. Carron's study revealed that the T-Group program he evaluated resulted in lowering the participant's opinion toward the use of initiating structure. However, the Ohio State Leadership studies (Stogdill & Coons, 1957) have repeatedly shown that superiors evaluate highly those subordinate managers who are high in initiating structure. Thus, one would expect a training effort that devalues structure to result in conflict between the participants and their superiors.

3. *Can the candidate tolerate the anxiety involved in the T-Group process?*

Most T-Group participants are adults, already settled in their ways, who have gone through the adjustment processes involved in adolescence and early adulthood. They have well-established behavior patterns, habits, responses, values, emotional reactions and defense mechanisms—all of which have now become meaningful to them, and which allow them to operate in their own environment.

The T-Group experience is a very soul-searching process. It requires the individual to introspect, to look at his own values and his own emotions, to ask himself whether and why he likes them, and whether he wishes to live the way he has. After a person is established in his way of life, two things must be considered: a) Does he have the general ability to tolerate the anxiety involved in this kind of soul-searching? and b) Is he at this time going through some other stress experience such

as adjusting to the change of life on the part of himself or other members of his family, or meeting difficult financial obligations?

To prevent avoidable emotional disturbances, admission to T-Groups should be based on a careful screening process designed to ensure that participants are able to withstand and profit from the anxiety induced in the T-Group process.

4. *What are the credentials of the T-Group leaders?*

Perhaps this question should be restated. Is the person being considerd for T-Group leader qualified to conduct group emotional learning processes (as opposed to cognitive learning)?

At this point, the soul-searching of both management and social scientist is at its height. Management must accept credentials established by the prevailing professional standard, but within such standards lies a wide latitude of skill and competence. It is for the social scientist called upon to participate in the T-Group training program to determine for himself, within his own individual standard or professional evaluation, whether or not his skills and the use of the particular method are most appropriately employed in a given situation, regardless of the pressure for change or his personal commitment to the T-Group method.

Many of the T-Group properties deal with complex psychological and sociological variables. The T-Group is designed to induce anxieties and to stimulate interpersonal feedback, introspection, and self-evaluation. Although some may claim that the T-Group is not therapeutic, within the latitude of T-Group emphasis are methods which closely approximate methods utilized in overtly therapeutic processes. This being the case, I believe it is imperative that T-Group leaders have psychological training equivalent to that required for professional clinical psychology.

The issue is one of some concern at this moment, because there are training directors, personnel managers, business consultants, and members of business school faculties, not trained in psychological practice, who nevertheless engage in T-Group training. Are they perhaps getting beyond the area in which they were trained, and might they not evoke anxieties or

problems which they are not capable of recognizing or handling?

Questions Concerning Ethical Issues

The questions raised so far will not be easily answered, and they depend on some knowledge of the candidate, some knowledge of the organization, of the kind of behavior desired in an ideal employee, and the kind and amount of behavioral change the organization can tolerate. Research to date has been sketchy in terms of answers to these questions, but, as investigation continues, quite conclusive answers will eventually emerge.

However, aside from the factual information considered thus far, there is another whole realm of inquiry to be considered; namely, the ethical values implicit in externally inducing changes in an individual's life style. On this matter there is admittedly no one answer and much room for disagreement among reasonable and sincere men.

1. *What responsibility and authority do the manager and the organization have over the personal well-being and privacy of their subordinates?*

What responsibility does the organization have for maintenance of respect for the individual, which conceivably could be jeopardized by methods utilized to bring about desired changes within the organizational structure?

2. *Is it within management's prerogatives to direct an employee to attend a T-Group?*

Many proponents of T-Groups argue that this is not therapy, and many opponents claim that it is. At the very least it must be said that T-Group training involves some of the properties of psychotherapy, namely, induced anxiety, interpersonal feedback, introspection, and self-reevaluation. Should a manager assume the authority to order people to engage in a soul-searching process which involves interpersonal feedback and which requires them to undergo introspection under conditions of induced anxiety?

Insofar as possible, precautions should be taken to prevent those likely to be hurt by this process from entering into it in the first place. Entry should be strictly voluntary since the con-

tent of the discussions often involves personal feelings and at least the possibility of personal problems. May the manager ethically order, or even subtly suggest, that people who work for him and depend on him or the organization for their livelihood engage in this kind of activity? Or must it be strictly voluntary? How is such suggestion or direction different from ordering an employee to undergo treatment from a company-paid psychologist or psychiatrist? Certainly psychological treatment may be warranted, but involvement in such treatment must be left to the individual if it is not to be an invasion of privacy and if it is to be consistent with the values of free choice on which our political and economic systems rest.

3. *If it is not within management's prerogative to order a person to attend T-Group training, then what conditions are necessary to ensure that attendance is made on a strictly voluntary basis?*

One could argue that, if the suggestion to attend comes from someone other than the superior, voluntary attendance would be assured. But should the suggestion come from the personnel manager, who is a representative of management, even when the employee is assured that attendance is strictly on a voluntary basis? Can it be guaranteed that the employee will not interpret such a suggestion as a subtle order? The organization possesses the power to reward and punish its employees and, since the man is dependent upon the organization, there is the risk that he will interpret any such suggestions as subtle coercion. The point is that there may be no qualitative difference between subtle suggestion and subtle coercion from the employee's point of view.

4. *Can organization-wide T-Groups be called voluntary?*

A not uncommon practice among organizations today is to administer T-Group training to entire departments or organizational units. Under these circumstances, no stretch of the imagination can conceive that they are voluntary on the part of the employee subjected to the social pressure to participate. In this instance, not only does the boss set the example by attending himself, but the pressure to conform to the group standard is usually more than an individual is capable of resisting, par-

ticularly when the pressure is reinforced by the system of rewards and punishments utilized by the organization.

5. And, finally, there is the question of extent of responsibility. If an individual is overcome by the anxiety induced in the T-Group, to what extent should the sponsoring organization assume responsibility?

Instances of reported emotional collapse as a result of participation in T-Group training are rare and completely undocumented, but the fact that they are alluded to, and a few instances reported, raises serious ethical questions for the persons responsible for instituting such a method.

Each of the foregoing questions is recommended for serious consideration before any decision is made to utilize the T-Group method of change within an organizational framework.

Recommendations

The above argument offers ample evidence that the T-Group method is a potentially powerful tool for changing behavior which is differentially effective in a wide variety of situations with a wide variety of individuals. In the light of the questions raised above, the following recommendations are offered as precautionary measures designed to ensure maximal protection for the individual while at the same time allowing maximal freedom for induction of needed changes within the organization:

1. Careful study of performance requirements before deciding to use T-Groups, to ensure that changes induced by the effective T-Group are actually required for effective performance and are changes which the organization will support when the individual returns to the job.

2. Careful preselection of participating individuals by means of adequate psychometric instruments to screen out as effectively as is possible any persons for whom this method might prove potentially overwhelming.

3. Careful explanation, to those selected for participation, of the goals and the process of T-Group training in order to allow withdrawal of any individual who prefers not to invest psychically in the program, and to provide a mental framework which will facilitate the learning process of those who attend.

4. Careful selection of the T-Group leader, to ensure that he has adequate training to conduct group emotional learning sessions that deliberately induce anxiety, interpersonal feedback, intrapersonal introspection, and experimentation with new methods of behavior.

5. Continued research to further elaborate the relationships between individual characteristics and conditions of use of T-Groups which will result in greater refinement of the methodology and isolate those situations where the method can most effectively be employed.

6. Provision of reserve precautionary procedures to be instituted in the event that a program, once begun, fails to fulfill the expectations of either the organization or members of the group itself. Such precautions would include alternative methods for accomplishing the desired changes as well as provisions for the safety and well-being of individuals enrolled in an organization-sponsored program of behavioral retraining.

References

ARGYRIS, C. *Interpersonal Competence and Organizational Behavior.* Homewood, Ill.: Richard D. Irwin, 1962.

ARGYRIS, C. "Explorations in Interpersonal Competence—I." *Journal of Applied Behavioral Science,* I (March, 1965), 58–83. (a)

ARGYRIS, C. *Organization and Innovation.* Homewood, Ill.: Richard D. Irwin, 1965. (b)

BASS, B. M. "Mood Changes During a Management Training Laboratory." *Journal of Applied Psychology,* XLVI (1962), 361–364. (a)

BASS, B. M. "Reactions to *Twelve Angry Men* as a Measure of Sensitivity Training." *Journal of Applied Psychology,* XLVI (1962), 120–124. (b)

BENNIS, W. G. "A New Role for Behavioral Sciences: Effecting Organizational Change." *Administrative Science Quarterly,* VIII (June, 1963), 125–165.

BLANSFIELD, M. G. "Depth Analysis of Organizational Life." *California Management Review,* V (1962), 29–42.

BRADFORD, L. P. *Exploration in Human Relations Training.* Washington, D. C.: National Education Association, 1953.

BRADFORD, L. P., GIBB, J. R., AND BENNE, K. D. *T-Group Theory and Laboratory Method.* New York: John Wiley & Sons, 1964.

BUCHANAN, P. C. *Organization Development Following Major Retrenchment.* Mimeographed, 1964. (a)

BUCHANAN, P. C. "Evaluating the Effectiveness of Laboratory Training in Industry." New York: Paper read at *the American Management Association* Seminar, February 24–26, 1964. (b)

BUCHANAN, P. C. "Innovative Organizations—A Study in Organization De-

velopment." In *Applying Behavioral Science Research in Industry.* New York: Industrial Relations Counselors, 1964. (c)

BUCHANAN, P. C. AND BRUNSTETTER, P. H. "A Research Approach to Management Development, Part II." *Journal of the American Society of Training Directors,* XIII (1959), 18–27.

BUNKER, D. R. "Individual Applications of Laboratory Training." *Journal of Applied Behavioral Science,* I (April-May-June, 1965), 131–148.

BURKE, H. L. AND BENNIS, W. G. "Changes in Perception of Self and Others During Human Relations Training." *Human Relations,* XIV (1961), 165–182.

Business Week. "Yourself as Others See You." March 16, 1963, 160.

CARRON, T. J. "Human Relations Training and Attitude Change: A Vector Analysis." *Personnel Psychology,* XVII (1964), 403–424.

CLARK, J. V. AND CULBERT, S. A. "Mutually Therapeutic Perception and Self-Awareness in a T-Group." *Journal of Applied Behavioral Science,* I (April-May-June, 1965), 180–194.

DUNNETTE, M. D. "Industrial Psychology." In Farnsworth, P. R. *et al.* (Editors), *Annual Review of Psychology, Volume 13, 1962.* Palo Alto, Calif.: Annual Reviews, Inc., 1962.

FLEISHMAN, E. A., HARRIS, E. F., AND BURTT, H. *Leadership and Supervision in Industry.* Monograph 33, Bureau of Educational Research, The Ohio State University, 1955.

FLEISHMAN, E. A. AND HARRIS, E. F. "Patterns of Leadership Behavior Related to Employee Grievances and Turnover." *Personnel Psychology,* XV (1962), 43–56.

FOUNDATION FOR RESEARCH ON HUMAN BEHAVIOR. *An Action Research Program for Organization Improvement.* Ann Arbor, Michigan, 1960.

HAIMAN, F. S. "Effects of Training in Group Processes on Open-Mindedness." *Journal of Communication,* XIII (1963), 236–245.

HALPIN, A. W. "The Leader Behavior and Effectiveness of Aircraft Commanders." In Stogdill, R. M. and Coons, A. E. (Editors), *Leader Behavior: Its Description and Measurement.* Monograph 88, Bureau of Business Research, The Ohio State University, 1957, 65–68.

HALPIN, A. W. AND WINER, B. J. "A Factorial Study of the Leader Behavior Descriptions." In Stogdill, R. M. and Coons, A. E. (Editors), *Leader Behavior: Its Description and Measurement.* Monograph 88, Bureau of Business Research, The Ohio State University, 1957. 39–51.

HARRISON, R. "Impact of the Laboratory on Perceptions of Others by the Experimental Group." In Argyris, C., *Interpersonal Competence and Organizational Behavior.* Homewood, Ill.: Richard D. Irwin, 1962.

HEMPHILL, J. K. "Leader Behavior Associated with the Administrative Reputations of College Departments." In Stogdill, R. M. and Coons, A. E. (Editors), *Leader Behavior: Its Description and Measurement.* Monograph 88, Bureau of Business Research, The Ohio State University, 1957, 74–85.

HOUSE, R. J. "Manager Development: A Conceptual Model." Mimeographed. New York: The McKinsey Foundation for Management Research, 1966.

KERNAN, J. "Laboratory Human Relations Training—Its Effect on the 'Personality' of Supervisory Engineers." Unpublished Ph.D. thesis, Department of Psychology, New York University, 1963.

KIRCHNER, W. K. Book Review of A. J. Marrow's *Behind the Executive Mask. Personnel Psychology,* XVIII (1965), 211–212.

KLAW, S. "Inside a T-Group." *Think,* November-December, 1965, 31, 26–30.

LAKIN, M. AND CARSON, R. C. "Participant Perception of Group Process in Group Sensitivity Training." *International Journal of Group Psychotherapy,* XIV (1964), 116–120.

LIKERT, R. *New Patterns in Management.* New York: McGraw-Hill, 1961.

LOHMANN, K., ZENGER, J. H., AND WESCHLER, I. R. "Some Perceptual Changes During Sensitivity Training." *Journal of Educational Research,* LIII (1959), 28–31.

MILES, M. B. "Human Relations Training: Processes and Outcomes." *Journal of Counseling Psychology,* VII (1960), 301–306.

MILES, M. B. "Human Relations Training: Current Status." In Weschler, I. R. and Schein, E. H. (Editors), *Issues in Training.* Bethel, Maine: National Training Laboratories of the National Education Association, 1962.

OAKLANDER, H. AND FLEISHMAN, E. A. "Patterns of Leadership in Hospital Settings." *Administrative Science Quarterly,* VIII (March, 1964), 521–532.

PATCHEN, M. "Supervisory Methods and Group Performance Norms." *Administrative Science Quarterly, VII* (December, 1962), 275.

PEPINSKY, H. B. AND PAULINE, MINOR, J. F., AND ROBIN, S. S. "Team Productivity and Contradiction of Management Policy Commitments." *Journal of Applied Psychology,* XLIII (1959), 264–268.

RICE, A. K. *Learning for Leadership.* New York: Humanities Press, Inc., 1964.

RUSH, CARL H., JR. "Leader Behavior and Group Characteristics." In Stogdill, R. M. and Coons, A. E. (Editors), *Leader Behavior: Its Description and Measurement.* Monograph 88, Bureau of Business Research, The Ohio State University, 1957, 69–73.

SCHEIN, E. H. AND BENNIS, W. G. *Personal and Organizational Change through Group Methods: The Laboratory Approach.* New York: John Wiley & Sons, 1965.

SHEPARD, H. Book Review Section, *Personnel Administration,* XXIX (March-April, 1966), 56–57.

SHARTLE, C. L. *Executive Performance and Leadership.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1956.

STOCK, D. AND THELAN, H. A. "Changes in Work and Emotionality During Group Growth." In *Emotional Dynamics and Group Culture.* Washington, *D. C.: National Training Laboratories, 1958.*

STOGDILL, R. M. AND COONS, A. E. (Editors), *Leader Behavior: Its Description and Measurement.* Monograph 88, Bureau of Business Research, The Ohio State University, 1957.

SYKES, A. J. "The Effects of a Supervisory Training Course in Changing Supervisors' Perceptions and Expectations of the Role of Management." *Human Relations,* XV (1962), 227–244.

TANNENBAUM, R., WESCHLER, I. R., AND MASSARIK, F. *Leadership and Organization: A Behavioral Science Approach.* New York: McGraw-Hill Book Co., 1961.

THELAN, H. A. AND DICKERMAN, W. "Stereotypes and Growth of Groups." *Educational Leadership,* February, 1949.

UNDERWOOD, W. J. "Evaluation of Laboratory Method Training." *Journal of the American Society of Training Directors,* XIX (1965), 34–40.