The Measurement of Change During a Laboratory Training Experience: Person Perception and Verbal Behavior Patterns.

Penelope Wasson Dralle

Louisiana State University and Agricultural & Mechanical College

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Louisiana State University and Agricultural and Mechanical College, Ph.D., 1969
Social Psychology

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THE MEASUREMENT OF CHANGE DURING A LABORATORY TRAINING EXPERIENCE: PERSON PERCEPTION AND VERBAL BEHAVIOR PATTERNS

A Dissertation

Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Philosophy

in

The Department of Psychology

by

Penelope Wasson Dralle
B.A., Jacksonville University, 1964
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ABSTRACT

The purpose of the present study was to demonstrate that methodological techniques could be developed which would indicate that changes in behavior occurring during a laboratory training experience could be operationally defined and measured. The study investigated behavior occurring at the perceptual and behavioral levels through the use of participant, trainer, and observer reports and responses.

The training group participants, twelve executives of a medium-sized corporation undergoing a 3 and 1/2 day laboratory, provided free-response descriptions of themselves and other group members before and after the laboratory. They completed interval type ratings on each of 20 descriptive items before and after training on themselves and other group members. The 20 descriptive words used for the rating scales were determined by taking the 20 most frequently occurring words or phrases in the participants' free-response descriptions of themselves and others. During the final session participants and trainers ranked the training group members on amount of change shown, amount of
help given to group members, amount of help received from
group members, and amount of defensive (or guarded) be-
havior shown during the group meetings. Two observers in-
dependently recorded the verbal behavior of the group mem-
ers during the T-group sessions.

The speech unit recordings confirmed that independent
observers could reliably report who spoke, to whom they
spoke, and the general content of the message, but could
not agree on the general "affect" or tone of the message.
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training groups is highly interaction orientated or two-way
communication.

It was found that participants showed little agree-
ment in the specific words used to describe themselves and
others. However, several words, "sincere," "capable," and
"competent," obtained in post-training descriptions were
used much more frequently than any other words in the study.
It was suggested that a few words may have been used re-
peatedly during the group but that the key underlying em-
phases of the laboratory were expressed in different ways
and words during the course of the laboratory.
Changes, as assessed by the descriptive ratings, were variable with respect to the individuals and the semantic items rated, but the group as a whole tended to be seen as "more dedicated," "more capable," and "less slow" after training. The member who showed the greatest number of pre vs. post changes was well-known to the group and the person who received the fewest pre vs. post changes was the only "stranger" member of the group.

The trainers, who could be seen as having more homogeneous concepts of the behaviors ranked, showed a higher degree of consistency on their rankings of global behaviors than did the participants. It was established that global behaviors which showed a high degree of consistency were highly related to verbal behavior. Specifically, those subjects who spoke most frequently were seen as having given the most help to group members and as having shown the least defensive behavior. An "investment" concept was postulated to account for the finding that group members felt that a person who changed was one who had received help from the group members.
INTRODUCTION

Possibly no approach in the area of learning has created more vehement controversy and commitment by practitioners as well as participants than sensitivity training. Although this approach was conceived over 20 years ago, there is still an aura of mystery about it (Coghill, 1967). The label "sensitivity training" has been used to cover diverse experiences and techniques both in the popular vernacular and the professional literature. Although there is more consensus in the professional literature, which outlines the essential elements of the approach, even there many other labels have been used to designate the same experience. Laboratory training, human relations laboratories, T-groups, encounter groups, group dynamics training, "Bethel training", executive skills training, and many other terms imply the use of the same basic technique called "sensitivity training."

However inconsistent the terminology, the technique of sensitivity training has enjoyed widespread application. In 1965, Schein and Bennis (1965) estimated that over
50,000 individuals had been exposed to laboratory training. House (1967), in a review of research on the effectiveness of T-groups as a management training device, stated that "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" (p. 1).

That sensitivity training is currently one of the focal interests of social scientists can be seen in the fact that T-groups or encounter groups were chosen as the topic for one of the divisional presidential addresses of the American Psychological Association (Dunnette, 1967), and were the central theme of a current issue of "Psychology Today" (1967), a monthly magazine for professionals and laymen interested in Psychology. Descriptions and comments on the subject are also popular in the general literature media of today. For example, a fictional account of a weekend "sensitivity" type experience, The Lemon Eaters by Jerry Sohl (1967), was published by a major paperback book company. "Look" magazine ran an article by its senior editor on sensitivity training in an aerospace contractor organization (Poppy, 1968).

The technique of sensitivity training has been used
in a wide range of situations. The National Training Laboratories conducts programs for several hundred managers and executives each year (NTL, 1967); a number of consulting firms have made this type of training a standard part of their repertoire (Coghill, 1967). Several university institutes, such as Boston University's Human Relations Center and UCLA's Institute of Industrial Relations, conduct T-groups for business personnel. Many colleges and universities incorporate T-groups as part of the curriculum in business education, public administration, or psychology (Weschler and Reisel, 1959; Mills, 1964). The laboratory method has been used with hospitalized psychiatric patients (Morton, 1965), with groups of citizens representative of an entire community (Klein, 1965), with police officers and Negro militants in several racially troubled cities (Sears, 1968), and with Negro and white children in school systems involved in desegregation (Cottle, 1967). The movement spread from the management training laboratories in the little mountain town of Bethel, Maine, to the more "experimental and experiential" workshops offered to "seekers of personal growth" at Esalen (Murphy, 1967, p. 35). In summary, sensitivity training seems to be one of the current bandwagons of the social sciences and is seen by some
as a cure for everything—from organizational problems of communication to a way of providing "What the world needs now . . . love, sweet love."

Despite its current popularity, the growth and development of sensitivity training has not been without serious criticisms. Much of the controversy has centered on the propriety and effectiveness of the method as a management training device (House, 1967). Probably the most widely publicized debate took place at Cornell University in 1963 between industrial relations professors George S. Odiorne of the University of Michigan and Chris Argyris of Yale University. Odiorne's colorful arguments against sensitivity training included such comments as the following:

Perhaps two weeks together in a submarine would have brought about the same behavior.

For this one (overprotected individual) the lab becomes a great psychological nudist camp in which he bares his pale sensitive soul to the hard-nosed autocratic ruffians in his T-group and gets roundly clobbered.

...I can only suggest to businessmen that they avoid the entire cult (Odiorne, 1963, pp. 9-21).

Argyris' rebuttal can be summed in his remark, "People are being hurt every day. I do not know of any laboratory program that has, or could, hurt people as much as they are being hurt during their everyday work relationships" (Argyris, 1963, p. 31).
Other critics concerned with the usefulness of T-groups as a management training device are McNair (1957), Dubin (1961), Gomberg (1967), and Bass (1967). McNair (1957) criticized the emphasis on human relations and executive development programs on the grounds they weaken the sense of responsibility, promote conformity, subordinate the development of individuals, and convey a one-sided concept of management. Dubin (1961) concluded that some of the basic assumptions of the leadership model accepted in T-group training could lead to serious problems in the form of threat to continuity if practiced by managers in the organizational setting. Gomberg (1967) in an article entitled, "'Titillating Therapy': Management Development's Most Fashionable Toy", stated that the reforming of the business environment through the use of T-groups must be frustrated because it stems from a complete misreading of the nature of the business enterprise, its hierarchical and bureaucratic requirements. Although espousing the use of T-groups in management development programs, Bass (1967) said that T-groups may be necessary, but are not sufficient for organizational development. He argued that unless sufficient teaching for transfer of the positive contributions of T-grouping, such as increased diagnostic skill and
increased self-awareness, was incorporated, the results of the experience may even make for a less effective organization— one paralleling the Spanish anarchist movement. It is easily seen that many of these criticisms involve settling fundamental issues concerning the goals of management development and leadership training programs and are far beyond the question of the value of sensitivity training in itself. The controversy over laboratory training as a management training device is not concerned with effectiveness of the method as an educational technique nor with its effects on individual participant growth, but rather is primarily concerned with the usefulness of the technique in contributing to the effectiveness of the total organization or the functioning of the individual in a specific environmental setting— his company— after he has undergone the sensitivity training experience.

Another issue involved in the controversy focuses on sensitivity training's relationship to psychotherapy. Although group therapy and T-groups have much in common, attempts are made to distinguish between them. Summarizing from Frank (1964), differences can be noted in four areas: (1) The end of therapy is "relieving neurotically caused distress of the members," while the end of a T-group is "improving the functioning of the groups to which the
members will return" (p. 450). (2) Therapy deals with "more pervasive and more central attitudes" which take longer to effect and require more emphasis on unlearning behavior; T-groups deal with the group's own functioning or behaviors manifest in the group situation. (3) The therapist generally allows greater dependence and give more support to group members than does the trainer of a T-group. (4) The focus of therapy is almost always on the attitudes of the individual members, while the focus of a T-group is more often on the group's functioning. Schein and Bennis (1965) pointed out that the differences within the practical applications of psychotherapy and within the applications of laboratory training may be greater than the differences between them. They felt it would be more realistic to view T-groups along a continuum. At one extreme are trainer styles that closely resemble therapy techniques and at the other extreme are styles very dissimilar to group therapy.

Perhaps the major and most poignant controversy concerns the sparsity of research evidence which demonstrates that an individual's behavior is modified as a function of undergoing laboratory training. Many of the early studies and much of the present faith concerning the effectiveness of the technique for changing behavior are based on
anecdotal evidence and examples drawn from idiographic experiences. Ferguson (1959) wrote, "The most impressive current level of proof is to be found in the subjective experience of organizations and managers themselves. . . . The increasing consensus . . . solidly supports growing use of the unstructured group for management development" (p. 70). Klaw in 1961 stated, "For the time being, therefore, the case for laboratory training has to rest mainly on the testimony of people who have undergone it" (p. 158).

Dunnette (1967), in referring to a review of studies related to the behavioral effects of T-group training by Campbell and Dunnette (1968), expressed the view of many social scientists by saying, "Surprisingly, in spite of our disenchantment with the way studies have been done, we have concluded that T-group training probably does induce behavioral changes in the back-home setting, but we have the uncomfortable feeling that the reality of such changes needs to be accepted as an article of faith rather than because of any firm foundation of empirical evidence" (p. 6).

Proponents and critics alike are concerned over the lack of conclusive scientific research that any meaningful, observable behavior changes occur as the result of participation in a T-group. Odiorne (1963) poignantly summarized this view:
In the absence of any research evidence which demonstrates that sensitivity training changes behavior, we are left with nothing but anecdotal evidence and example drawn from experience (p. 20).

Dunnette (1967), also placed this point in clear perspective:

Unfortunately, no matter how compelling such evidence may be to us as human beings, accounts of inspiration and elation are not, in themselves, enough when we view group process training from our positions as behavioral scientists (p. 4).

Maslow (1965) expressed great hopes for the benefits of sensitivity training but simultaneously recognized many complexities and difficulties inherent in the method as a tool for changing individual behavior.

Schein and Bennis (1965) went to the heart of the problem when they pointed out that the inconclusiveness of the evidence did not reflect a lack of concern, but rather reflected the difficulties involved in gathering valid data on changes induced by such training.

A primary problem in gathering valid and reliable data involves a massive confusion of terms. In evaluating research on this technique, it is necessary to know which aspect of training is being studied. When evaluating research in the area, it is vital to differentiate some of the common terminology in use. Three terms are frequently used interchangeably in research and professional literature.
when, in actuality, they have separate meanings. These terms are laboratory training, T-group training, and sensitivity training. (1) Laboratory training is the most generic of the terms and refers to all aspects of training in which people learn about behaviors— their own and other peoples— in a community type situation dedicated to encouraging and supporting experimental learning and behavioral change. In addition to T-groups and sensitivity training experiences, it covers the pervasive experience of the total milieu in which the laboratory takes place. Several other important aspects of laboratory training are the degree of isolation from normal activities, the amount of saturated interpersonal contact among participants and trainers, and the use of simulated situations, such as role playing, lectures, films, buzz groups, inter-group competitions, etc. These experiences are usually designed to provide input information in the form of theory or simulated experience in the application of theory. (2) The second common terminology used is the "T-group" or training group; this is invariably the heart of the laboratory (Bradford, Gibb, and Benne, 1964) and involves a small group consisting of 10 to 15 people learning through experience about the dynamics of group behavior and interaction. (3) The third term used is "sensitivity training", which is that particular part of the T-group which utilizes
the technique of information feedback in order to develop perception and understanding concerning oneself and the effects of new ways of behaving (Coghill, 1967).

Another complication in evaluating research is that the expected and desired outcomes of a laboratory vary depending on such factors as the goals of the laboratory, characteristics of the delegate population, nature of the sponsorship of the laboratory, degree of isolation, the length of training, the training staff, and the training design (Schein and Bennis, 1965).

For example, Bunker (1967), in a critique of an article written by Bass (1967), failed to accept Bass' conclusions because of differences in views and assumptions concerning laboratory training phenomena. Bunker stated he neither shared nor had observed what Bass identified as a generally accepted assumption: that a considerable amount of frustration was essential to the training process. Rather, Bunker felt that intense frustration blocked learning. He also noted that the complete individual freedom which Bass portrayed as typical in T-group training was unfamiliar to him and that in his experience individual behavior was controlled by group sanctions.

Argyris (1967), in expressing concern about the diverse and sometimes contradictory assumptions of laboratory
training and conditions considered significant for growth and learning, expressed the view that while he admired and respected diversity when the method was new, he now felt that the field of laboratory education was entering an era where research was necessary; research was needed so that intelligent choices could be made between the various assumptions for learning in laboratory training. Argyris feared that without adequate research and evaluation of the effects of intervention styles and techniques, further experimentation and diversification would lead to disintegration and confusion within laboratory education. Specifically, he noted the need for research on the impact of trainer intervention styles and various theories of learning on different types of group members and back-home consequences.

The evaluation of research is further complicated by the diversity of measures or criteria used by different investigators. Martin's (1957) distinction between internal and external measures of training was adopted by Campbell and Dunnette (1968) in their review of the effectiveness of laboratory training for managerial development. Internal criteria, as applied to laboratory training by Campbell and Dunnette, were measures linked directly to the content and processes of the training program but which had no direct
linkage to actual job behavior or the goals of an organization or institution. External criteria were those measures linked directly to job behavior after a participant left the laboratory. When conceptualized in this manner, laboratory training could be examined in terms of its pragmatic value for introducing specific changes in individuals and organizations, or a more basic question could be asked concerning what, if anything, happened to a participant during the course of a sensitivity training laboratory. Campbell and Dunnette (1968) felt that the entire field suffered from a lack of research attention but noted that, though results with internal criteria were more numerous, they were even less conclusive than the results with external criteria.

Despite the difficulties involved in conducting and evaluating research on the effects of laboratory training, a number of studies have been done (Schein and Bennis, 1965). Two recently published, quite inclusive, reviews are those of House (1967) and Stock (1964). Campbell and Dunnette (1968) also have completed a very comprehensive review which has been submitted for publication.¹ Durham and Gibb (1960) compiled an annotated bibliography of research carried out

¹The author is very grateful to the reviewers for making a prepublication mimeographed copy of the review available to her.
by the National Training Laboratories for the period from 1947-1960. Each of these reviews had a somewhat different emphasis, varying in the articles reviewed and the conclusions reached. Stock's review contained 52 references and reported research on group growth and development, group composition, members' descriptions of their T-groups, studies related to trainer role, individual behavior in the group, members' perception as related to sociometric choice, and the impact of groups on individual learning and change. In her conclusion, Stock labeled the research as unevenly concentrated and not fully developed in application or methodology, and she emphasized the need for continued and expanded research as a response to the new applications and modifications of the T-group. House's review contained 50 references and concentrated on studies related to events throughout the training and studies concerned with T-group effects on participants' personalities, perceptions, attitudes, and job behavior. His summary remarks were cast in terms of the effectiveness of laboratory training in an organizational framework. He concluded that the method is a potentially powerful instrument for inducing anxiety and more considerate employee-oriented leader behavior but expressed the opinion that the change may be either beneficial or detrimental to both the organization and the individual
involved. Campbell and Dunnette's (1968) review contained 88 references and emphasized studies centered around the effectiveness of T-group experiences in managerial training and development. Their review—which organized studies under external criteria, internal criteria, and studies related to individual differences and T-group technology—was the most comprehensive and the most academically, methodologically, and theoretically oriented. In summary, they stated that the utility of laboratory training for organizations had been neither confirmed nor disconfirmed and that considerable research was needed on both internal criteria, external criteria, and the relationships between changes in internal and external criteria.

In evaluating the existing body of research, the general consensus among reviewers is that the results are inconclusive, unequally distributed over the key issues, and frequently appear contradictory (Argyris, 1967; Campbell and Dunnette, 1968; House, 1967; Miles, 1960; Schein and Bennis, 1965). Probably the major reason for the inconclusive results reported in these reviews is due to weaknesses in research methodology. One general research problem encountered is that the processes and outcomes of laboratory training are extremely diverse and interact with certain laboratory design characteristics (Schein and
Bennis, 1965). Another problem is that the types of behavior changes which can occur as a function of training are numerous and are difficult to assess (Campbell and Dunnette, 1968; Schein and Bennis, 1965). Finally, the complexity of expected effects increases the possibility of ignoring some of the relevant variables and of using instruments which are not sufficiently discriminative to report those events which do occur (Bennis et al., 1957; Kernan, 1963).

In summary, laboratory training is an extremely popular educational technique which is presently being expanded in its applications. It is the focus of a great deal of controversy centering on its effectiveness as a management training device, its relation to psychotherapy, and its foundations in empirical evidence. As with psychotherapy and other educational methods, the amount of research is relatively small in contrast with the amount of application (Miles, 1960). Much of the difficulty in conducting and evaluating research on laboratory training can be traced to (1) a confusion in terminology, (2) interaction of design characteristics with objectives and outcomes, (3) the diversity of basic learning assumptions held by educators and trainers and the continued technological experimentation, and (4) the types of measures and criteria used by
researchers investigating laboratory training.

A major concern in any training, educational, or treatment effort is to determine what impact, if any, the method has on the people who undergo it (McGeehee and Thayer, 1961; Rickard, 1962; Schein and Bennis, 1965; Tannenbaum, Weschler, and Massarik, 1961). It was with some of the important methodological difficulties encountered in assessing the impact of laboratory training on behavior that the present paper was concerned.

This study deals with processes and outcomes during the laboratory training experience. The importance of focusing on internal criteria—behavior during the group—stems from several sources. A primary reason for focusing on internal measures is that the studies using internal criteria or measures linked directly to the content and processes of laboratory training are the most inconclusive (Campbell and Dunnette, 1968). Secondly, it is frequently assumed that changes, such as modifications in perception, should occur during the laboratory experience if more overt behavioral changes and/or external, job related changes are to occur (Burke and Bennis, 1961). Third, there is a real need to study the "in situ" complexities of the interactions of specific laboratory design conditions and their effects on group members (Stock, 1964; Schein and Bennis, 1965;
Campbell and Dunnette, 1968). Finally, instruments which can identify and quantify acutely the relevant changes and processes of a laboratory experience must be developed (Bennis et al., 1957; Kernan, 1963).

More descriptive and quantifiable information is needed on several key variables of laboratory training which have developed out of the new applications and modifications of the method (Stock, 1964). A particularly important variable is related to the composition of the delegate population; two major classifications of group populations are "stranger" groups, in which the members have no prior knowledge of each other and do not interact outside of the laboratory group, and "family" groups, in which people who work in the same organization undergo training as a unit. Most research has been conducted on "stranger" groups since this is the original type of group used and the one most frequently run by the National Training Laboratories where a large percentage of the body of research has been collected (Stock, 1964; Shepard, 1964). With "stranger" groups it is extremely difficult to determine whether the processes and changes that occur are the results of the interactions this group would normally produce in becoming acquainted with each other or whether the
processes and changes are a function of the specific, specialized activities involved in undergoing the laboratory training experience. The importance of running "family" groups is due to the assumption that the solutions reached in "family" groups are more acceptable and relevant to the organizational setting (Schein and Bennis, 1965), and that they are a solution to the difficulty that lone individuals, who have participated in a "stranger" group, experience in applying their learning back on the job (Shepard, 1964).

Another research design weakness frequently encountered in laboratory training research is that reported behavioral change is limited to one level of behavior and/or is measured on one predetermined dimension or variable (Stock and Thelen, 1958; Burke and Bennis, 1961; Campbell and Dunnette, 1968). A major assumption of this study was that changes which occurred would manifest themselves at different behavioral levels and that these changes could be identified and related by using behavior measures of process and of pre-post differences. The plan of this study was to investigate and quantify behavior manifest at several levels using different instruments designed to quantify the behavior and to limit experimenter bias in determining the types of changes studied. Verbal behavior, an aspect of group process data, was collected by objectively recording
and categorizing aspects of directly manifest behavior during the T-group. Perceptions of self and others were studied by utilizing participant responses on before and after free-response descriptions and descriptive rating scales. More indirect global behaviors were evaluated by collecting quantifiable judgments of participants and trainers.

The use of free-response descriptions as a basis for the rating scales instead of using a standardized check list was felt to be of particular importance. Vidulich stressed the importance in research on person perception of utilizing a vocabulary that was relevant to the subject population. He felt that much of the inconclusive evidence in the field of person perception and "stereotyping" research was due to the imposition of structure by the experimenters' choice of descriptive words used in these studies. Thus, the use of free-response descriptions should have increased the probability that the descriptive words or dimensions studied were relevant to the subject population and also that the changes in person perception, if any, which did occur were not an artifact of the experimenters' choice of semantic labels or descriptive words.

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An evaluation and assessment of methodological problems encountered in research on laboratory training was suggestive of the several variables and techniques which were the concern of the present study. Laboratory characteristics included the use of a "family" group undergoing a three and one-half day modified version of an NTL executive development laboratory in an isolated setting. Methodological techniques were focused on collecting and quantifying objective measures of participants' verbal behavior during the group meetings, measures of self and others before and after the laboratory, and evaluative global measures of participants' behavior in the final session.
PROCEDURE

Laboratory Design

The laboratory met for three and one-half days and consisted of lecture theory sessions, demonstrations of group process phenomena, and T-group sessions. Each day was divided into four time blocks. The first time block was from 8:00 a.m. to 12:00 noon. This block contained an hour lecture, a thirty minute demonstration and approximately a two and one-half hour T-group session in that order. The second time block was from 1:30 to 5:30 p.m. and contained a lecture, a demonstration, and an approximately two and one-half hour T-group session. The third time block, from 7:30 p.m. until 10:00 p.m., was designated for the third daily T-group session. The fourth time block, from 10:00 p.m. until 12:00 midnight, was a social period with required attendance by all participants and staff. Participants and staff ate all meals together in the lodge dining room at tables reserved for them alone. The scheduled activities, living arrangements, and isolation from family and business organization were directed toward increasing interpersonal contact among participants and trainers and establishing a
social island" during the training period.

Subjects

Twelve executives of a medium-sized multi-plant corporation, who were participating in a broader organizational development program, were selected from the total executive population of the corporation. The twelve subjects, at an organizational level which required them to formulate plans and policies affecting corporate plans, policies, philosophies and strategies, were participants in the laboratory training experience conducted as part of the organizational development effort. The entire program was under the guidance of an outside psychological consulting firm. While participation in the program was on a voluntary basis, there did exist informal organizational pressure to participate.

Subjects were selected by representatives of the personnel department, line management, and the consulting firm. The criteria used were as follows:

1. All members were approximately on the same organizational level.

2. No person was included who had a known previous history of emotional instability. This point was checked with line supervisors, the company medical department, and the diagnostic data of the outside psychological consulting firm.
The participants were selected from among the four plants of the company and most had close personal knowledge of each other based on years of interpersonal contact during the regular organizational activities.

Subjects received a memorandum stating the mechanical details of the laboratory (dates, time, accommodations, travel arrangements, meals, etc). The laboratory was held at a resort ski lodge approximately 300 miles from the home office of the company. The professional staff for the laboratory consisted of three doctoral level psychologists, two masters level psychologists, and the experimenter (a masters level psychologist completing work on the doctorate). The participants and staff assembled at the lodge the evening before the laboratory began; contact between the subjects and the staff was kept to a minimum on the evening before the program began.

Training Room Arrangement

The training program was conducted in two meeting rooms. One was a general conference room where lectures and demonstration exercises were held; the second was a smaller room where the T-group sessions were held. The general conference room was a large room with seventeen chairs arranged in a semicircle facing a blackboard. The T-group room contained fifteen chairs arranged in a circle (12 chairs for the
participants and 3 chairs for the trainers), and two chairs outside and on opposite sides of this circle for the observers. The chairs in the circle were identified by numbers. For facilitating identification of chair numbers, the first chair to the right of a small wall partition was considered chair number 1 and the seventh chair, counting clockwise from the partition, was designated by a seven printed on a card tacked on the wall above it. Both rooms were carpeted and draped to minimize disturbances and irrelevant visual cues. Ash trays were provided but no tables, desks, or facilities for note taking were in the rooms. All walls were barren of visual material such as pictures, signs, etc.

Observer Techniques

During the T-group sessions two observers independently recorded on lined pads using predetermined speech categories the flow of the discussions with regard to (1) who was speaking, (2) to whom he was speaking, and (3) a rough classification of the substantive content of his comment. The evening before the first T-group meeting the two observers met with Trainer C who instructed them in the observational categories to be used. The categories were defined, discussed, demonstrated and practiced until Trainer C felt the observers were qualified to collect reliable data.
Since each chair, prior to the first meeting, was numbered from 1 to 15 and participants were not required to take the same chair for all sessions, the observers recorded their observations with reference to the chair numbers rather than participants' names. The observers recorded the names of each person beside the number of the chair he occupied before each meeting began. The signal for the observers to begin the recording of their observations for a particular session was given by Trainer C removing his glasses.

The unit of speech being observed was defined as a word or a series of consecutive words expressing a single thought or idea spoken by a member of the group. A new unit of speech started when (1) a different person spoke, (2) the speaker paused for 4 seconds or more, or (3) the speaker addressed his comments to a different person from the one to whom he had been speaking.

The recording sheets were lined 12" by 15" legal pads. Four 1" columns were drawn each one representing a general speech classification category and each column was headed by the range of symbols used for coding the data bits appropriate for that category (See Appendix A).

The first bit of data recorded for each unit was the number of the chair in which the person who spoke was sitting. This number represented the person who emitted the unit and
ranged from 1 to 15.

The second bit of data was the referent, or the person to whom the unit was addressed; this bit was recorded in the second column. The referent also was recorded by chair number and the symbol written down was a number from 1 to 15. If the recorder could not determine who the referent was, or, if the unit of speech was directed toward the whole group, the second symbol or data bit was a "G", indicating "the group" as the referent.

Column 3, or the third bit of data, represented a content category. Five predetermined content categories were used. They were defined as follows:

1. "P" - was used when the observer determined that the speech unit concerned the speaker (I as a person).

2. "-P" - was used when the observer determined that the unit concerned the referent (You as a person).

3. "T" - was used when the observer determined that the content of the unit concerned the present T-group members collectively (We as a T-group).

4. "W" - was used when the content of the unit concerned the larger group of the company as a whole, or some aspect of the larger organizational framework (We as a company).

5. "X" or a blank was used when the content did not fit into any of the 4 previous content categories.

The five content categories were considered as hierarchial
so that "P" was considered the first category, "-P" the second, "T" third, "W" fourth, and "X" last. When a speech unit contained elements of more than one category, the raters recorded the content in the first category that was relevant.

The fourth column, or fourth bit of data recorded for each unit, denoted the "tone" of the speech unit. The four "tone", or affect, categories were defined as follows:

1. "?" - was used if the unit was in the form of a question.
2. "!" - was used if the unit was delivered in such a tone as to indicate an exclamatory statement.
3. "+" - was used if the unit was not an exclamatory statement or a question, but a statement of fact that the observer determined as positive in affect.
4. "-" - was used for statements determined by the observer to be negative in tone.
5. Descriptive or neutral units were left blank.

For example, the unit, "I'm mad!", if spoken by the person sitting in chair 5 and directed toward the person sitting in chair 9, would be recorded as "5 9 P !." If the same person had said "I'm mad at you!" to the person in chair 9, the content category would still be "P" rather than "-P" because of the predetermined hierarchy. The unit, "Your subordinates are afraid to make suggestions," if spoken by the person in chair 6 and directed to the person
in chair 8, would be recorded as " 6 8 W (blank)." If the person sitting in chair 4 addressed the group by saying "This is a great group.," the coding would be " 4 G T +."

Thus, to summarize, each session was coded with regard to the number of different units of speech emitted. For each unit the following four bits of information were coded: (1) the speaker; (2) the referent; (3) the general content; and (4) the general tone of the unit if the tone seemed to fit one of the categories.

Survey Instruments

Several weeks prior to the training laboratory program, Trainers B and C and the experimenter constructed three survey instruments—pre and post free-response descriptive forms, pre and post descriptive rating scales, and post group behavior ranking scales—to be used for collecting data during the laboratory. The first instrument consisted of forms 8 and 1/2" by 6", used for collecting free-response descriptive words and phrases. In the upper left corner was a space for the responding participant's name. Printed below this were the names of the two participants he was to describe on that form; each name was followed by four numbered spaces for writing in descriptive adjective responses.
Since each sheet contained the names of two people to be described, there were six separate forms for each participant to complete (See Appendix B).

The second instrument constructed was an interval-type rating sheet. The rating blank contained a place for the rater's name, the name of the person to be rated, rating instructions, and 20 six-interval "descriptive to nondescriptive" scales (See Appendix C). No descriptive words or phrases were printed on the form at this time; these were written in during the first meeting and were obtained from the free-responses given by the participants on the scale described above.

The third instrument consisted of four different behavior ranking scales. The four behaviors that every participant was required to rank each participant on were (1) amount of change shown during the laboratory, (2) amount of help given to group members, (3) amount of help received from the group, and (4) amount of guarded (or defensive) behavior shown during the group meetings. Each of the four ranking forms contained a statement describing the behavior to be ranked, instructions for performing the rankings, twelve numbered spaces for filling in the names of each person according to the rank given him, and a list of the twelve group members' names in alphabetical order placed to
the side for reference (See Appendices D, E, F, and G). The rankings were made by the ratee alternately selecting the person who most demonstrated the behavior in question, then the person who least demonstrated the behavior, etc., until he had completed a ranking of all participants (including himself) according to the degree they had demonstrated the behavior described.

**Presentation of Research Program to Subjects**

The program began at 8:00 a.m. on the first morning of the laboratory with a brief introduction by the trainers. At this time, subjects were informed that concurrent with the regular laboratory work they would be asked to participate in research being done on laboratory training methodology, techniques, and affectiveness. The necessity and importance of this type research was discussed; subjects were assured that their contributions to this research would be kept confidential and would be used for research purposes only. Immediately following this introduction and discussion, subjects completed the forms for pre-group free-response descriptive phrases.

**Pre-group Free-Response Descriptive Forms**

Free-response descriptions by each subject about himself and every other member of the group were collected
in the following manner. Copies of the first of the six
free-response prepared sheets were distributed (See Ap­
pendix B). Subjects were instructed by Trainer C to fill
in their names in the appropriate space and to give two
positive and two negative descriptive words or phrases about
each person whose name appeared on the sheet. The subjects
were required to respond as quickly as possible. As soon as
a subject completed his responses on two people he was given
another sheet with two additional names and he responded as
before. This procedure was repeated until all subjects had
responded in this manner concerning himself and all other
participants.

Pre-group Descriptive Rating Scales

Using the free-response descriptive words and phrases
collected in the first step, a count was made to determine
the 10 most frequently occurring positive words or phrases
and the 10 most frequently occurring negative words or phras­
es. While the word frequency count was being made, the sub­
jects were instructed on the purposes of the laboratory by
Trainer A. When the frequency count was completed, a list
was compiled containing in random order the twenty high
frequency words or phrases which were then used as semantic
labels for the descriptive rating scales. The prepared in­
terval rating sheets were distributed and subjects rated
themselves and every other group member on the degree to which each of the twenty items described each individual (See Appendix C). The ratings were taken after the trainer's introduction to the purposes and techniques of the laboratory but before the initial T-group session.

Post-group Free Response Descriptive Forms

After the completion of the formal aspects of the laboratory training experience, the subjects convened in the general conference room to complete the post-group forms. At this time subjects again gave two free-response positive descriptive words or phrases and two free-response negative descriptive words or phrases about himself and every other member of the group using the free-response descriptive forms (See Appendix B).

Post-group Descriptive Rating Scales

The descriptive rating sheets with the twenty items used in the pre-group descriptive rating scales typed in were readministered. Each subject again rated himself and each group member on the degree to which each of the twenty high frequency descriptive words or phrases obtained from the pre-group free-response descriptions characterized each individual (See Appendix C).
Post-group Behavior Rankings

The four behavior ranking scales were given to each member of the group. Subjects were instructed to rank all the members of the group, including themselves, from highest to lowest on each of the behaviors described on the four ranking sheets using the alternate ranking procedure. As a subject completed a ranking on one behavior the ranking sheet was collected. Thus, the four rankings were done consecutively but independently, for no reference to any completed ranking was possible. All subjects completed the rankings of the described behaviors in the same order. That is, they first ranked the members on amount of change shown during the period of the T-group; next, they ranked members on amount of help given to group members; third, they ranked amount of guarded (or defensive) behavior shown; finally, they ranked amount of help received from the group (See Appendices D, E, F, and G).

After dismissal of the participants, the three trainers independently performed the behavior rankings using the same procedure.
RESULTS

Prior to presenting the data, it might be useful to restate the purpose of this study and to outline the types of data collected. The purpose of this study was to demonstrate that methodological techniques could be developed which could be used to quantify process and participant change data during a laboratory training experience. Instruments designed to quantify verbal behavior during the T-groups, pre and post descriptions of self and others, and post-group global behavior evaluations were constructed to investigate the assumption that behavior changes would manifest themselves at different behavior levels and that these change measures could be related. Following from the stated goals of this study, the results from each of the instruments were first presented separately and then the data determined by combining results from two instruments were presented. In this results chapter the data was presented as follows: (1) speech unit measures; (2) free-response descriptive words and phrases; (3) pre and post descriptive ratings; (4) post-group behavior rankings;
(5) relation between frequency of speech and behavior rankings; (6) relation between frequency of speech and descriptive ratings; and (7) relation between descriptive rating scales and behavior rankings.

Speech Units

For each of the two observers, who sat outside the circle and coded speech in the group, the number of units of speech (who spoke, to whom he spoke, content of the message, and tone of the message) were converted to frequency data for each session. These data are shown in Appendix H.

The interobserver correlations (determined by Pearson Product Moment Correlations) on the number of times a person spoke and to whom he spoke for each of the eight sessions are reported in Table 1. Correlations approaching 1.00 indicate that the number of times a participant spoke to a specific other participant in relation to the frequency each other participant spoke to a specific "other" recorded by one observer for a given session was in accord with the data recorded by the second observer for that session. The correlations for the eight sessions increased from .76 in session one to .97 in session six. These results suggest that observers can be trained to record reliably how often
**TABLE 1**

INTEROBSERVER CORRELATIONS ON SPEECH UNITS  
*(WHO SPOKE AND TO WHOM HE SPOKE)*

FOR EACH OF THE EIGHT T-GROUP SESSIONS

<table>
<thead>
<tr>
<th>SESSIONS</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.76</td>
</tr>
<tr>
<td>2</td>
<td>.80</td>
</tr>
<tr>
<td>3</td>
<td>.85</td>
</tr>
<tr>
<td>4</td>
<td>.84</td>
</tr>
<tr>
<td>5</td>
<td>.92</td>
</tr>
<tr>
<td>6</td>
<td>.97</td>
</tr>
<tr>
<td>7</td>
<td>.94</td>
</tr>
<tr>
<td>8</td>
<td>.70</td>
</tr>
</tbody>
</table>
a person speaks and to whom he speaks, and that reliability increases with practice. The drop in reliability in session eight to .70 can probably be attributed to factors inherent in the particular, unique design characteristics of this laboratory. Several factors which could have effected the reliability of the recording of verbal behavior in the final session, are the shorter length of time in session eight, the change in direction of the laboratory toward back home orientation, the development of incidental participant euphoria toward the program, and the development of observer fatigue and emotional involvement with resultant loss of objectivity.

The interobserver reliability of content was determined by counting the number of units assigned to each of the content categories (P, -P, T, and W) by an observer in a given session and computing a correlation between the two observers' results. These correlations, reported in Table 2, range from a low of -.46 in session one to a high of .99 in session five. Some of the correlations are quite high; the overall sequence shows a striking improvement in observer skill, which was probably a function of practice. The results support the notion that one can obtain reliable reports of broad classifications of speech unit content in a training session. The correlations of content also showed
TABLE 2

INTEROBSERVER CORRELATIONS ON CONTENT UNITS FOR EACH OF THE EIGHT T-GROUP SESSIONS

<table>
<thead>
<tr>
<th>SESSION</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-.46</td>
</tr>
<tr>
<td>2</td>
<td>.75</td>
</tr>
<tr>
<td>3</td>
<td>.93</td>
</tr>
<tr>
<td>4</td>
<td>.79</td>
</tr>
<tr>
<td>5</td>
<td>.99</td>
</tr>
<tr>
<td>6</td>
<td>.95</td>
</tr>
<tr>
<td>7</td>
<td>.93</td>
</tr>
<tr>
<td>8</td>
<td>.78</td>
</tr>
</tbody>
</table>
a drop (.78) in the final session.

The interobserver reliability of affect was determined by adding the number of speech units assigned to the ?, I, -, and - categories by an observer in a given session and computing a correlation for the two observers. These results are reported in Table 3. The correlations ranged from -.53 in session one to .66 in session seven; however, these were the extremes and most of the correlations clustered around zero. Zero correlations indicate the absence of a relation between one observer's coding of affect units with the second observer's record and indicate it was not possible to obtain agreement on observations of training group tone using this technique.

The recorded frequency of speech units, content units, and tone units summed for each rater for each session are shown in Table 4. The number of units reported for each category shows a decrement in observations recorded from the total speech units to the content to the affect. For example, in session seven Observer X totaled 912 speech units for both the "spoke" and the "spoke to" categories, 802 units for the content category, and 250 units for the affect category; Observer Y, for the same session, totaled 701 units in both the "spoke" and the "spoke to" columns,
TABLE 3

INTEROBSERVER CORRELATIONS ON "AFFECT" UNITS FOR EACH OF THE EIGHT T-GROUP SESSIONS

<table>
<thead>
<tr>
<th>SESSION</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-0.53</td>
</tr>
<tr>
<td>2</td>
<td>-0.19</td>
</tr>
<tr>
<td>3</td>
<td>-0.16</td>
</tr>
<tr>
<td>4</td>
<td>0.27</td>
</tr>
<tr>
<td>5</td>
<td>0.09</td>
</tr>
<tr>
<td>6</td>
<td>0.22</td>
</tr>
<tr>
<td>7</td>
<td>0.66</td>
</tr>
<tr>
<td>8</td>
<td>-0.07</td>
</tr>
</tbody>
</table>
TABLE 4

TOTAL UNITS IN EACH SPEECH CLASSIFICATION FOR EACH OF THE EIGHT SESSIONS AS RECORDED BY OBSERVER X AND OBSERVER Y

<table>
<thead>
<tr>
<th>Sessions</th>
<th>Observer X</th>
<th>Observer Y</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Speech Units*</td>
<td>Content</td>
</tr>
<tr>
<td>1</td>
<td>298</td>
<td>243</td>
</tr>
<tr>
<td>2</td>
<td>545</td>
<td>484</td>
</tr>
<tr>
<td>3</td>
<td>567</td>
<td>446</td>
</tr>
<tr>
<td>4</td>
<td>509</td>
<td>433</td>
</tr>
<tr>
<td>5</td>
<td>815</td>
<td>726</td>
</tr>
<tr>
<td>6</td>
<td>554</td>
<td>514</td>
</tr>
<tr>
<td>7</td>
<td>912</td>
<td>802</td>
</tr>
<tr>
<td>8</td>
<td>185</td>
<td>174</td>
</tr>
</tbody>
</table>

*Since the same number of units were recorded for the speaker category and the referrent category, they were listed only once under the heading "speech units."
681 units in the content column, and 88 units in the affect column. The decrease in units coded for content and affect is a very consistent result; it holds true for both observers for each of the eight sessions.

The mean number of times a subject spoke was summed across the eight sessions. The summed frequency of reported speech was then ranked with the subject who spoke most over all eight sessions receiving the rank of 1 and the subject who spoke least receiving the rank of 12. The mean number of times a subject spoke and the rank he received are reported in Table 5. The same procedure was used to determine participant rank order for the number of times a participant was spoken to. These results are reported in Table 6.

To determine the relation between the recorded frequency of speech emitted and speech directed toward each participant, a correlation was computed between the summed mean number of times a subject spoke and the summed mean number of times he was spoken to during each session. This correlation (.90) indicates that the subjects who talked the most were most frequently addressed by other group members and that the verbal behavior during the group was interaction oriented rather than one-way communication.
TABLE 5

MEAN NUMBER OF TIMES A SUBJECT "SPOKE" ACROSS ALL THE GROUP SESSIONS AND HIS ASSIGNED RANK*

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>MEAN</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>188</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>309</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>364</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>158.5</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>152.2</td>
<td>11</td>
</tr>
<tr>
<td>6</td>
<td>256</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>91</td>
<td>12</td>
</tr>
<tr>
<td>8</td>
<td>253</td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td>259</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>224.5</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>219.5</td>
<td>7</td>
</tr>
<tr>
<td>12</td>
<td>185.5</td>
<td>9</td>
</tr>
</tbody>
</table>

*The highest frequency was assigned the rank of 1, the second highest was ranked 2, etc.
**TABLE 6**

**MEAN NUMBER OF TIMES A SUBJECT WAS SPOKEN TO DURING THE GROUP SESSIONS AND HIS ASSIGNED RANK**

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>MEAN</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>168</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>267</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>353.5</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>171.5</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>134.5</td>
<td>11</td>
</tr>
<tr>
<td>6</td>
<td>311</td>
<td>2</td>
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<tr>
<td>7</td>
<td>101</td>
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<td>8</td>
<td>223.5</td>
<td>7</td>
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<tr>
<td>9</td>
<td>253.5</td>
<td>5</td>
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<tr>
<td>10</td>
<td>297</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>238</td>
<td>6</td>
</tr>
<tr>
<td>12</td>
<td>208</td>
<td>8</td>
</tr>
</tbody>
</table>

*The highest mean frequency was assigned the rank of 1; the second highest was ranked 2, etc.
The percent of speech units having the group as referent ("T") recorded by each of the two observers were plotted for the eight sessions in Figure 1. The pronounced "U" shaped curve illustrated the movement of the direction of interaction from a general, group oriented interaction to a personal, direct interaction and then back to a more nonspecific interaction.

The percentages of speech units in each of the content categories using the mean of the observers were plotted for the eight sessions in Figure 2. The marked difference between the "P" and "-P" units and the "T" and "W" units may be partially accounted for by the hierarchy used in recording the content units. Specifically, if a unit contained elements of "P" or "-P" as well as "T" or "W," it would have been recorded as "P" or "-P," not "T" or "W."

Free-Response Descriptive Phrases

All of the positive and negative free-response descriptive phrases given during the opening session and the final session were alphabetized and tallied to identify the most frequently occurring descriptive words and phrases. The words and phrases and the number of times they were used are reported in Appendices I, J, K, and L. These data indicate wide differences in descriptive terminology and in
FIG. 1  PERCENTAGE OF SPEECH UNITS DIRECTED TOWARD THE GROUP
FIG. 2 PERCENTAGE OF SPEECH UNITS IN EACH OF THE FOUR CONTENT CATEGORIES FOR THE EIGHT GROUP SESSIONS
agreement between participants concerning descriptions of self and others. The large number of different words used by participants are shown in the following results:

<table>
<thead>
<tr>
<th># of Different Pre-group</th>
<th>Post-group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive words</td>
<td>171</td>
</tr>
<tr>
<td>Negative words</td>
<td>223</td>
</tr>
</tbody>
</table>

If no phrases had been repeated, each category would have contained 288 words or phrases. While the frequency changes are not large, there is a reduction in the number of different words used in the post-group free-response descriptions. The reduction is greater for positive words than for negative words even after taking into account the smaller number of different positive words used in the initial free-response descriptions.

The twenty most frequently occurring words used as semantic labels for the descriptive rating scales and the number of times they were used by the participants are shown in Table 7. A comparison of Appendices I and J with Table 7 indicates that the word "understanding" should have been omitted from the high frequency list and the word "cold" included. The errors came to light only after the data were reanalyzed under less stressful circumstances. The original frequency count and rating sheets were made during the short interval of time (approximately thirty minutes) used by Trainer A to explain the purposes of the laboratory. It would
TABLE 7

TWENTY MOST FREQUENTLY OCCURRING WORDS OR PHRASES AND THE NUMBER OF TIMES THEY WERE USED

<table>
<thead>
<tr>
<th>POSITIVE</th>
<th>F</th>
<th>NEGATIVE</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friendly</td>
<td>8</td>
<td>Quiet</td>
<td>9</td>
</tr>
<tr>
<td>Hard Working</td>
<td>8</td>
<td>Heavy</td>
<td>6</td>
</tr>
<tr>
<td>Capable</td>
<td>7</td>
<td>Insecure</td>
<td>4</td>
</tr>
<tr>
<td>Dependable</td>
<td>6</td>
<td>Insincere</td>
<td>4</td>
</tr>
<tr>
<td>Good Appearance</td>
<td>6</td>
<td>Set in Ways</td>
<td>4</td>
</tr>
<tr>
<td>Good Thinker</td>
<td>6</td>
<td>Slow</td>
<td>4</td>
</tr>
<tr>
<td>Self Confident</td>
<td>6</td>
<td>Boisterous</td>
<td>3</td>
</tr>
<tr>
<td>Dedicated</td>
<td>5</td>
<td>Impulsive</td>
<td>3</td>
</tr>
<tr>
<td>Sense of Humor</td>
<td>5</td>
<td>Preoccupied</td>
<td>3</td>
</tr>
<tr>
<td>Understanding</td>
<td>3</td>
<td>Too Happy-go-lucky</td>
<td>3</td>
</tr>
</tbody>
</table>
appear that "too quiet" with a frequency of 5 should have been included in the list also, but it was omitted because "quiet", with a frequency of 9, was included.

The number of different words used to describe each participant before and after training are given in Table 8. A t-test was used to determine if a difference existed between the number of words used to describe a person before session one and the number of words used to describe a person after session eight; the computed t value of 2.03 with 22 degrees of freedom was not significant at the .05 level of confidence. However, an inspection of Table 8 indicates that in only one instance were more different words used to describe a participant after training than before training.

The words used to describe each participant before and after training are given in Appendix M.

Descriptive Rating Scales

The group ratings of each participant on each item were analyzed using t-tests for correlated means to determine if there were differences between pre-group and post-group ratings; the results of the t-tests are given in Appendix N. Of the 240 tests, fifty were significant at the .05 or greater level of confidence; that is, differences of the magnitude found would not be expected to occur by
### TABLE 8

**NUMBER OF DIFFERENT WORDS USED TO DESCRIBE EACH SUBJECT BEFORE AND AFTER THE TRAINING EXPERIENCE**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Pre-Group</th>
<th>Post-Group</th>
<th>DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>46</td>
<td>46</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>43</td>
<td>38</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>44</td>
<td>44</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>46</td>
<td>41</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>44</td>
<td>42</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>47</td>
<td>46</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>44</td>
<td>41</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>45</td>
<td>43</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>46</td>
<td>46</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>45</td>
<td>47</td>
<td>-2</td>
</tr>
<tr>
<td>11</td>
<td>44</td>
<td>42</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>47</td>
<td>44</td>
<td>3</td>
</tr>
</tbody>
</table>
chance more than five times or less in a hundred times. A plot of the significant t-tests for each participant and each item is given in Figure 3. These data suggest that pre vs. post rating scales based on free-response descriptive words and phrases constitute one valid method of identifying the reporting perceived changes in individual group members.

Every participant showed at least one significant change on the twenty items; the number of significant changes per participant between pre and post ratings ranged from one to eleven with three participants showing three, three participants showing four, and three showing five significant changes each. One participant had recently been hired by the company and, thus, was the only true stranger in the group. He received the smallest number of significant pre versus post changes—one.

For each of the twenty items analyzed, the number of significant changes ranged from zero to seven with a mode of two. The group as a whole was seen as "more dedicated," "more capable," and "less slow" after training than before training.

Another result of the pre vs. post analyses of the descriptive ratings was the number of items that became more positive; that is, the negative phrases were rated as less
<table>
<thead>
<tr>
<th>ITEMS</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLOW</td>
<td></td>
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</tr>
<tr>
<td>SELF CONFIDENT</td>
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<td>GOOD APPEAR-</td>
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<td>ANCE</td>
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<td>HEAVY</td>
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<td>TOO QUIET</td>
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<tr>
<td>DEPENDABLE</td>
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<tr>
<td>GOOD THINKER</td>
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<td>INSINCERE</td>
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<tr>
<td>SET IN WAYS</td>
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<td>**</td>
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<tr>
<td>HARD WORKING</td>
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<tr>
<td>FRIENDLY</td>
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<td>BOISTEROUS</td>
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<tr>
<td>UNDERSTANDING</td>
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<tr>
<td>PREOCCUPIED</td>
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<tr>
<td>SENSE OF HUMOR</td>
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<td>TOO HAPPY-GO-</td>
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<tr>
<td>LUCKY</td>
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<td>INSECURE</td>
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<tr>
<td>DEDICATED</td>
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<tr>
<td>IMPULSIVE</td>
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</tr>
</tbody>
</table>

Figure 3. Significant differences between pre-group and post-group ratings for subject and item.

**t-test value significant at .01 level of confidence

* t-test value significant at .05 level of confidence
descriptive and the positive phrases were rated as more descriptive. In coding the data, negative words rated as extremely descriptive and positive words rated as extremely nondescriptive were scored "1" so that a higher score on the post-group ratings would suggest a more positive, or "better," rating. Of the 240 items by individual tests, 140 or 58% were rated more positively, 89 or 37% were rated more negatively, and 11 or 5% showed no change on the post-group ratings; of the 50 significant changes, 37 or 74% were toward a more positive rating and 13 or 26% were less positively rated.

A persual of Figure 3 indicates that no general pattern of significant changes occurred. The participants appeared to have rated individual people and individual items and not to have used response set in assigning numbers.

An analysis of the twelve participants' perceptions of themselves vs. "others" perceptions on each of the twenty items was made for pre-group and post-group descriptive rating scales using t-tests. The results of these analyses are reported in Table 9. Prior to training, 5 of the twenty items were significant; after training three of the items were significantly different. Though the number of significantly different items was smaller after training and a


**TABLE 9**

**t-TEST VALUES BETWEEN SELF AND GROUP RATINGS ON THE DESCRIPTIVE RATINGS BY ITEM BEFORE AND AFTER THE TRAINING EXPERIENCE**

<table>
<thead>
<tr>
<th>Items</th>
<th>Pre-Group</th>
<th>Post-Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  slow</td>
<td>1.88</td>
<td>1.51</td>
</tr>
<tr>
<td>2  self confident</td>
<td>-0.01</td>
<td>1.29</td>
</tr>
<tr>
<td>3  good appearance</td>
<td>-0.64</td>
<td>-0.34</td>
</tr>
<tr>
<td>4  heavy</td>
<td>-1.00</td>
<td>-0.87</td>
</tr>
<tr>
<td>5  too quiet</td>
<td>1.59</td>
<td>1.14</td>
</tr>
<tr>
<td>6  dependable</td>
<td>2.92**</td>
<td>2.17*</td>
</tr>
<tr>
<td>7  good thinker</td>
<td>2.31*</td>
<td>0.84</td>
</tr>
<tr>
<td>8  insincere</td>
<td>1.78</td>
<td>-0.21</td>
</tr>
<tr>
<td>9  set in ways</td>
<td>-0.16</td>
<td>0.54</td>
</tr>
<tr>
<td>10 hard working</td>
<td>2.33*</td>
<td>1.09</td>
</tr>
<tr>
<td>11 friendly</td>
<td>0.98</td>
<td>0.99</td>
</tr>
<tr>
<td>12 boisterous</td>
<td>-0.63</td>
<td>-0.86</td>
</tr>
<tr>
<td>13 capable</td>
<td>1.51</td>
<td>1.15</td>
</tr>
<tr>
<td>14 understanding</td>
<td>2.62*</td>
<td>2.86*</td>
</tr>
<tr>
<td>15 preoccupied</td>
<td>-1.24</td>
<td>0.58</td>
</tr>
<tr>
<td>16 sense of humor</td>
<td>1.10</td>
<td>0.39</td>
</tr>
<tr>
<td>17 too happy-go-lucky</td>
<td>0.58</td>
<td>2.19*</td>
</tr>
<tr>
<td>18 insecure</td>
<td>0.48</td>
<td>0.43</td>
</tr>
<tr>
<td>19 dedicated</td>
<td>2.93*</td>
<td>1.88</td>
</tr>
<tr>
<td>20 impulsive</td>
<td>-0.00</td>
<td>-1.74</td>
</tr>
</tbody>
</table>

**Significant at the .01 level of confidence**

*Significant at the .05 level of confidence*
tendency toward more agreement between description of self and description by others after training than before training was indicated, the change was not great enough to suggest that the behavioral concept of "congruency" between self and others' perception of self could be effectively measured by use of rating scales for this group. However, it is interesting to note that all of the significant differences between self ratings and ratings by others were positive, which suggests that where there were differences between self and other ratings subjects tended to rate themselves more positively, or "better", than the other members rated them.

**Behavior Rankings**

The ranks assigned each participant on each of the four behavior ranking scales by participants were summed for each of the four scales. The pooled ranks are also reported in Table 10.

The ranks assigned each participant on each of the four scales by participants and by trainers were correlated using Spearman Rank Order Correlations (Ferguson, 1966). The intercorrelation matrices are shown in Appendices O, P, Q, and R. The mean correlations for participants, for trainers, and for trainers vs. participants for each of the four scales
### TABLE 10
POOLED RANKS FOR SUBJECTS ON THE FOUR BEHAVIOR RANKINGS BY PARTICIPANTS AND BY TRAINERS

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Amount of Change (Peers)</th>
<th>Help Given (Peers)</th>
<th>Help Received (Peers)</th>
<th>Defensiveness (Peers)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>6.5</td>
<td>4</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>9</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>6</td>
<td>2</td>
<td>2</td>
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<tr>
<td>4</td>
<td>2.5</td>
<td>7</td>
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<tr>
<td>5</td>
<td>1</td>
<td>3</td>
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<td>8</td>
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<tr>
<td>6</td>
<td>2.5</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>7</td>
<td>11</td>
<td>10.5</td>
<td>11</td>
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<tr>
<td>8</td>
<td>8</td>
<td>2</td>
<td>5</td>
<td>3</td>
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<tr>
<td>9</td>
<td>10</td>
<td>10.5</td>
<td>9</td>
<td>9</td>
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<tr>
<td>10</td>
<td>6.5</td>
<td>5</td>
<td>7</td>
<td>4.5</td>
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<tr>
<td>11</td>
<td>9</td>
<td>8</td>
<td>4</td>
<td>4.5</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

Rank of 1 was given the subject who showed most of the behavior.
are given in Table 11. The highest overall correlations (.62, .84, .71, and .66) were for the scale "amount of help given." The correlations for the three other behavior scales are .31 and above except for the trainers vs. participants correlation (.27) for the scale "amount of defensive behavior shown." These results would indicate that consistency concerning participant behavior can be obtained by use of the alternate rank procedure.

The relation between the pooled rank order of participants for a specific behavior ranking compared to the rank order on every other behavior scale was determined using Spearman Rank Order Correlations. The correlations, reported in Table 12, show that there was a strong negative relation (-.87 for participants and -.51 for trainers) between the behavior rankings of "amount of help given" and "amount of defensive behavior shown." This result suggests that subjects who were seen as having given more help to other group members tended to be the ones who were seen as having shown the least defensive behavior during the group. The high positive relation (.67 for participants) between the behavior rankings of "amount of change shown" and "amount of help received" indicates that subjects who were seen as having changed most also tended to be the ones who were seen by
### TABLE 11

**MEAN RHO CORRELATIONS FOR THE FOUR BEHAVIOR RANKINGS**

<table>
<thead>
<tr>
<th>Behavior Ranking Scale</th>
<th>Amount of Change</th>
<th>Help Given</th>
<th>Help Received</th>
<th>Defensiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N = 66</td>
<td>.31</td>
<td>.62*</td>
<td>.31</td>
<td>.59*</td>
</tr>
<tr>
<td><strong>Trainers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N = 3</td>
<td>.80**</td>
<td>.84**</td>
<td>.65*</td>
<td>.58*</td>
</tr>
<tr>
<td><strong>Participants X Trainers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N = 36</td>
<td>.42</td>
<td>.71**</td>
<td>.37</td>
<td>.27</td>
</tr>
<tr>
<td><strong>Total Correlations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.38</td>
<td>.66*</td>
<td>.35</td>
<td>.49</td>
</tr>
</tbody>
</table>

*The intercorrelations were converted to scores; the means were computed and were restated as correlations.  

** Significant at the .01 level of confidence  
* Significant at the .05 level of confidence
TABLE 12

RHO'S AMONG BEHAVIOR RANKING SCALES

<table>
<thead>
<tr>
<th>Behavior Scales</th>
<th>Correlations (Participants)</th>
<th>Correlations (Trainers)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help Given</td>
<td>.46</td>
<td>.71**</td>
</tr>
<tr>
<td>Change X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help Received</td>
<td>.67*</td>
<td>.88**</td>
</tr>
<tr>
<td>Change X</td>
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<td></td>
</tr>
<tr>
<td>Defensiveness</td>
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<td>-.43</td>
</tr>
<tr>
<td>Help Given X</td>
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<td></td>
</tr>
<tr>
<td>Help Received</td>
<td>.38</td>
<td>.78**</td>
</tr>
<tr>
<td>Help Received X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defensiveness</td>
<td>-.87**</td>
<td>-.51*</td>
</tr>
<tr>
<td>Help Received X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defensiveness</td>
<td>-.16</td>
<td>-.69*</td>
</tr>
</tbody>
</table>

* Significant at the .05 level

** Significant at the .01 level
participants as having received most help from the group members.

Relation Between Frequency of Speech and Behavior Rankings

The relation between the recorded frequency of speech during the group and the ranks assigned the participants on the four post-group behavior scales was investigated by computing a correlation between the pooled ranks of participants on each of the four behavior ranking scales and the rank received by each subject based on the total frequency of speech units reported for him during the eight sessions. These results are reported in Table 13. They range from a high positive correlation of .72 to a negative correlation of -.55.

There were essentially no consistent relations between rankings on amount of change shown during the laboratory and amount of help received from group members with frequency of speech. However, the magnitude of the relation (.72 for participants and .67 for trainers) between frequency of speech and help given to group members supports the idea that the more talkative participants were seen as having given the most help to group members. The negative relation (-.55 for participants and -.33 for trainers) lends
**TABLE 13**

RHO CORRELATIONS BETWEEN MEAN NUMBER OF TIMES A PERSON SPOKE AND HIS RANK ON THE FOUR BEHAVIOR RANKING SCALES

<table>
<thead>
<tr>
<th>BEHAVIOR SCALE</th>
<th>PARTICIPANTS</th>
<th>TRAINERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANGE X</td>
<td>.12</td>
<td>.12</td>
</tr>
<tr>
<td>SPOKE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HELP GIVEN X</td>
<td>.72**</td>
<td>.67*</td>
</tr>
<tr>
<td># SPOKE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HELP RECEIVED X</td>
<td>.16</td>
<td>.19</td>
</tr>
<tr>
<td># SPOKE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEFENSIVENESS X</td>
<td>-.55*</td>
<td>-.33</td>
</tr>
<tr>
<td># SPOKE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the .01 level of confidence

* Significant at the .05 level of confidence
support to the interpretation that the more talkative participants were seen as having shown the least amount of defensive behavior.

Relation Between Frequency of Speech and Number of Significant Changes on Pre vs. Post Descriptive Rating Scales

The relations between the recorded frequency of speaking and the recorded frequency of being spoken to during the group with the number of significant pre vs. post changes on the descriptive rating scales were determined by computing correlations. The two correlations were -.56 between frequency of speech and number of significant pre vs. post changes and -.51 between number of times spoken to and significant pre vs. post changes on the descriptive ratings.

These results indicate that the participants who talked most and who were spoken to most often were generally rated the same after training as they were rated before training on the descriptive ratings.

Relation Between Number of Significant Changes on Pre vs. Post Descriptive Rating Scales and Behavior Rankings

To assess the relation between the participant rank orders on the four post-group behavior rankings and the number of significant pre vs. post changes on the descriptive ratings scales, it was necessary to convert the number of
significant changes on the descriptive ratings to ranks and compute a correlation corrected for tied ranks (Ferguson, 1966). The correlations ascertained are reported in Table 14 and ranged from .52 to .06 to -.49. The only significant correlations (-.60) was between the behavior ranking of "help given to group members" for trainer rankings and the number of significant descriptive rating changes. This result indicates that a person who was seen as having given considerable help to group members by the trainers was not rated differently by participants on the pre vs. post descriptive rating items.
TABLE 14

CORRELATIONS BETWEEN NUMBER OF SIGNIFICANT CHANGES IN THE DESCRIPTIVE RATINGS AND THE FOUR BEHAVIOR RANKING SCALES

<table>
<thead>
<tr>
<th></th>
<th>PARTICIPANTS RANKING</th>
<th>TRAINERS RANKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANGES X</td>
<td></td>
<td></td>
</tr>
<tr>
<td># SIGN. CHANGES</td>
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<td>-.45</td>
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<tr>
<td>HELP GIVEN X</td>
<td></td>
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<tr>
<td># SIGN. CHANGES</td>
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<td>-.60</td>
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<td>HELP RECEIVED X</td>
<td></td>
<td></td>
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<td># SIGN. CHANGES</td>
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<td></td>
<td></td>
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<tr>
<td># SIGN. CHANGES</td>
<td>.40</td>
<td>.52</td>
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</table>
DISCUSSION

The purposes of this study were to demonstrate that methodological techniques could be developed which would indicate that changes in behavior occurring during a laboratory training experience could be operationally defined and measured and to investigate, using these techniques, the immediate effects of a training experience on perceptions and behavior of individual participants.

A major assumption of this study was that changes which occurred would manifest themselves at different behavioral levels and that these changes could be identified and related by using behavior measures designed to focus on verbal behavior, pre-post perceptions, and post-group evaluations. The discussion will initially focus on the four measuring techniques separately. The final section will be a discussion on the results of combining the techniques used in the study.

Speech Units

Several studies, committed to investigating group process and development, have used some rating system to measure
participation patterns and/or type of interaction. One study (Thelen, 1954) used a modification of Bion's "work-emotionality" rating system. The ratings of work, emotionality, and number of contributions were performed by two observers who met after the group and prepared one "official" record based on their individual reports. A reliability study was carried out by having four teams produce such "official" reports for a 20 minute segment of a group meeting. The average team-to-team intercorrelation for "work" was .90, for number of "contributions" was .83, and for "emotionality" was .60.

Another procedure (Argyris, 1965), using categories related to a theoretical framework of competency, had observers rate taped segments of group meetings. Percentages of agreement among observers in three studies were 86 percent, 70 percent, and 80 percent.

The present study produced interobserver reliabilities that were, in general, similar to those found in previous studies; the present reliabilities were based on data collected by two observers independently recording the verbal behavior as it occurred during the whole period of the group meetings. The average interobserver reliability for units of speech for each group member, in terms of who spoke and to whom he spoke, was higher than that of similar studies.
The interobserver reliability on content categories was similar to that reported in the above studies. However, the tone or "affect" interobserver reliabilities were much lower than any of the reliabilities reported. The lower interobserver reliabilities for "affect" can be related to the definitions of the "affect" category classifications. "Positive," "negative," "question," and "exclamation" are broad, general terms that tend to encourage subjective, evaluative judgements. In contrast, the coding of the speaker and the referent of a unit would be a more objective procedure of a relatively specific nature. The "position" of the "affect" column as the last unit recorded could have contributed to the lower correlations between observers by reducing the number of units recorded in the category.

Another explanation for the smaller number of units in the "affect" category, unrelated to a "position" effect, would be that few speech units have sufficient tone to be rated. The consistently lower frequency of units recorded in the content, and in the affect categories may derive from the inherent nature of language. The categories essentially determined the speaker, the referent, the content, and the affect of each speech unit. All speech units, as defined in this study, must have a "speaker"; the subject population
and the situation insured that the unit would be directed toward someone or the group. Although the content classifications were extremely broad, inclusive, and relevant to the population and the situation, not all speech units would necessarily be related to one of the content classifications (the self, the person being addressed, the present group, or the external work environment) recorded in this study. The extremely small number of units recorded as "positive," "negative," "questions," or "exclamatory" can readily be seen as logically related to the nature of language; for example, informational comments, a large part of most communications, would not be relevant to the classification of affect or tone as defined in this study.

A basic tenent of laboratory training is that it brings about improvements or changes in skills of social interaction (McGregor, 1960). The high correlation between number of times a subject spoke and the number of times he was addressed supports the premise that verbal behavior in a laboratory group is highly orientated toward interaction among members. This two-way interaction is in contrast to the dominancy-submission pattern of verbal behavior occurring in the structured authority-obedience model of most learning situations.
The "U" shaped curve of speech demonstrates the pattern of speech from initial high group referent, to low group referent, and back to high group referent in the final meeting. This pattern is compatible with the idea that developmental stages occur in laboratory training groups. Several studies, analyzing segments of group behavior at different times throughout a laboratory, report the presence of phases in group development. Stock and Thelen (1958), Thelen and Dickerman (1949) report an initial exploratory phase in which group concerns center around establishment of procedures and goals or attempts to establish their customary places in a leadership hierarchy, followed by a phase of high emotionality, cohesiveness and friendliness which leads into a phase of high-level work performance. The final session is frequently described as being dominated by a parting "glow" (Burke and Bennis, 1961) and high feelings of having done well with understanding and warmth for group members (Klein, 1968). Similar developmental stages can be inferred from the verbal behavior data of this study. The relatively more frequent group-referents in the initial sessions can be seen as attempts at establishing structure and goals for the group. The conversation during the middle sessions was generally more "here and now" directed and was most frequently about the speaker himself or the person to whom he was
speaking. The increase in group-referents in the final session can be interpreted as mutual expressions of warm feeling toward the group as a whole. These inferences of group process are further supported by the percentage of speech units in each content category. In the initial session comments about the self, the person addressed, the group members as a unit, and the company environment are almost equally frequent. In the middle sessions, comments about the group as a unit and the company are rare. The final session shows a rather large increase in speech about the group as a unit and about personal feelings but not as much about the company. The composition of the content in the final session supports the conclusion that there is a parting glow among members toward the group as an entity.

Gibb (1958) stated that there are four essential conditions at the heart of the T-group experience:

(The climate) must permit intrapersonal and interpersonal exposure of ideas and feelings, valid feedback to the individual as to the adequacy of his ideas and feelings, a supportive atmosphere which permits the individual to look at these educational and affective inadequacies, and provisional and exploratory behavior directed toward personal familiarity with new ideas, attitudes and feelings (Gibb, 1958).

Using these conditions as a framework the percentages of speech units in each content category can be interpreted as illustrating the relation between verbal behavior and group
development. After the initial session there is a high percentage of talking about oneself which can be viewed as an opportunity for exposure of feelings and ideas. Session three shows an increase in talking about the person one is speaking to; this can be equated with an initial attempt at feedback. The increase of personal emissions in session four can be seen as additional input of personal information and a regrouping to allow the development of more supportiveness and risk-taking. The increase in speech units about the person spoken to in sessions 5, 6, and 7 can be viewed as reflecting high-level feedback orientation and can be seen as exploratory attempts at new types of supportive behaviors. Thus, these results tend to illustrate Gibb's descriptive requirements of the essential elements of a T-group.

Free-Response Descriptive Phrases

Several studies of person perception have employed the technique of free-response descriptions in lieu of the more generally used ratings based on vocabulary or semantic labels selected by the investigator (Oswalt, 1962; Vielhauer, 1962). Vidulich has argued that free-response techniques are of primary importance in the investigation of person perception. He has said that free-response techniques are

---

essential for collecting data on the idiographic concepts subjects use in describing and perceiving themselves and others and has stressed the necessity of allowing the subject to use words that are meaningful and familiar. The present study demonstrates that even in a homogenous group, wide differences of terminology exist in the members' descriptions of the same "other." This finding supports the premise that investigations of person perceptions should take into account widely variant dimensions and specific vocabulary used in self and other cognition. Evidently when people experience others in a relatively unstructured and naturalistic way, they do not confine themselves to a few well-defined dimensions. The language they use generally consists of fairly common conversational words and short phrases. Also the results confirm the wide variety of ways that one specific "other" can be perceived by the members of a group.

The possibility that the greater skill and accuracy of interpersonal perceptions ascribed to members of T-groups after training represents "merely the acquisition of a new vocabulary" has been voiced by Campbell and Dunnette (1968, p. 47). Although there was a trend toward more agreement in the descriptive words reported overall as well as in regard to a specific subject, the decrease in number of different words after training was not large
or statistically significant. This result would seem to indicate that the participants did not acquire a vocabulary of interpersonal words. However, three positive post-group words, "sincere," "capable," and "competent," were used much more frequently than any negative or before-group words. It is possible that these words were introduced and reinforced during the group meetings and constitute a rudimentary vocabulary of interpersonal terms. A probable explanation for these results is that a few specific words were used repeatedly during the laboratory experience but that the several underlying emphases of the laboratory were probably expressed in many different ways and words during the course of the laboratory.

Descriptive Rating Scales

The descriptive rating scales constructed from the words used by the participants themselves proved to be an easily quantifiable, sufficiently sensitive technique to discriminate changes related to individuals as based on the perceptions by peer group members. Kernan (1963) studying "personality" changes of members of a three day "family" group using standardized personality measures reports no significant changes. He noted as a possible reason for this non-significance, "... the risks of not measuring some of
the variables that may be very susceptible to change, or of ignoring instruments that might provide more discriminating and valid differentiations among those whose behavior changed or did not change" (p. 145). The descriptive rating scales used in the present study evidently took into account valid dimensions since they were seen as pertinent by the participants in their descriptions of self and others. Each of the semantic labels can be interpreted separately which lends breadth to the number of concepts studied and yet assures that they are to some degree relevant to the social dimensions of the group under investigation. Analyzing the changes for each member on each of the separate items takes into account one of the major difficulties in laboratory training research. Stock (1964), in reviewing the impact of the T-group on individual learning and change, mentions that several authors (Miles, 1960; Burke and Bennis, 1961) report percentage gains or changes for the whole group; these group measures encounter such problems as taking into account the individual who is already quite effective when he arrives at the laboratory as well as the direction of changes for the individuals. The descriptive ratings used in the present study can be viewed separately for individuals or for items to show directionality of
change as well as magnitude of change.

In summary, the descriptive rating scales were sufficiently discriminative to measure individual changes along dimensions which were of relevance to the group; they also were sensitive to individual increases or decreases along each of the dimensions studied. The results demonstrated that participants could and did perceive that individuals changed differentially with respect to the variables studied.

Behavior Rankings

The behavior rankings proved to be valuable in reporting evaluative perceptions of the group members on four global scales; the scales were "amount of change shown during the group," "amount of help given to group members," "amount of help received from group members," and "amount of defensive or guarded behavior shown." There was more consistency among the trainers' rankings of group members' behavior; this higher degree of agreement could be attributed to better understanding of the meaning of the four scales because of frequent trainer interactions about group members during the courses of the laboratory, trainer familiarity with the concepts ranked, as well as prior similarity of trainers' professional backgrounds.
The behavior ranking showing the highest agreement overall was the scale "amount of help given"; the scale "amount of defensiveness" was second highest with significant agreement among participants as a group and among trainers as a group, but not between participant and trainer groups. The scales of "amount of change shown" and "help received from group members" show relatively low agreement. The differences in agreement can be attributed to the ambiguity of the behaviors ranked and the extent to which subjective judgements had to be made on behaviors which were not directly or overtly manifest. For example, "amount of help given" was probably related to overt behavior in the group, whereas "help received" could not be assessed in an objective way since a judgement had to be made concerning whether help directed toward a person was received, per se, by that person.

Relation Among Different Measurements

One of the main issues involved in this design was to investigate the ways in which behaviors at various levels of objectivity, subjectivity, evaluativeness, and awareness were related. A problem frequently encountered in group research involves using the perception of subjects by other group members as behavioral measures. In using perceptions
by subjects as behavioral measures one is not sure that
the perceptions accurately reflect behavior; further,
there is uncertainty in regard to which behaviors are
being reflected in the perceptual measures. Relating the
data collected by different techniques contributes to the
understanding of the individual instruments as well as to
the conceptualizations of individual and group change.

The global behavior rankings which showed the most
agreement ("help given" and "defensiveness") were also
more highly related to the more objective measures of
verbal behavior. Specifically, those subjects who spoke
most frequently were seen as having given the most help
to group members and as having shown the least defensive
behavior. Perhaps both the ranking "help given" and the
ranking "defensiveness" were defined in terms of the verbal
behavior of the participants during the group. The fact
that trainers' rankings were not as highly related to
amount of speech may be due to their more sophisticated
psychological definitions of the behavior ranking scales.
The pattern of relating frequency of verbalizations with
the conceptualization of "help given" and "defensiveness"
is further suggested by the strong negative relationship
between these two global rankings of "help given" and
"defensiveness". The lower agreement among participants
on the behavior rankings of "change" and "help received" could be attributed to a lack of establishing a strong relationship between fairly straight-forward patterns of overt behavior with the conceptual definition of these behavioral scales.

The two highly related behavioral scales of "change" and "help received" indicate that the group members perceived that a person who changed was one who had received help from the group members. The relation between "change" and "help given" could be indicative of an "investment" type hypothesize. Further support for an "investment" notion is afforded by the even higher relation between "change" and "help given" by the trainers who had more "invested" than the participants.

Generalizing from the above discussion, it seems that the members of the group interpreted silence as "guardedness" and "non-helpfulness"; further they appeared to feel that people change who are perceived as being receptive to help or advice. This generalization seems to indicate a discrepancy between the psychological belief that a major reason why people talk is to relieve anxiety, and the layman's interpretation of talking behavior as being helpful. Also it contradicts in part the common sense axiom that it is a good thing to keep quiet and appear
intelligent. A person who depends on "not being found out" for his psychological comfort and tries to effect it by not giving out data (silence) will be only partially "covered" because the group members will label him as defensive or guarded. Furthermore, it would seem that a good indication of influence is how much people perceive an individual as having received their advice and help.

**Implications and Suggestions for Future Research**

The present study focuses on a number of areas in which further research is needed to clarify and/or identify important variables in understanding group and individual behavior.

(1) The obvious differences in the semantic labels used by people in describing themselves and others focus on several important issues such as (a) determining the source and evolution of semantic labels used to describe behavior, (b) compiling and classifying the different semantic labels used by various individuals in different groups, (c) estimating the possibility of eliminating the differences so that clarification of behavior descriptions can be obtained, particularly across cultural subgroups.

(2) Observations of verbal behavior in the present study showed an initial high "group-referent," a drop in "group-referent," and a final increase in "group-referent";
the final session was also characterized by a decrease in amount of speech about the person addressed. More research is needed to determine if the nature of the verbal behavior in the final session is the result of (a) a "closure" effect, (b) the laboratory design, or (c) interaction patterns of any group. More data assessing developmental stages of specific groups and more content analysis of verbal behavior in groups is needed to establish the interaction of verbal behavior of participants with the process variables of the group.

(3) The observers in the present study were not able to agree on the general "affect" or tone of the speech units observed. Suggested possibilities for the lack of agreement were that it was the result of (a) the definition of "affect" used in the classifications used in the study, (b) recording this unit as the last category, (c) perceptual differences between observers, or (d) inherent characteristics of language. The design of this study did not allow for a detailed investigation of this problem, but an understanding of it could be of real value in using verbal behavior as a dependent variable in social research.

(4) The high positive relation between frequency of speech and the perception of "helpfulness" and the negative
relation between frequency of speech and the perception of "defensiveness" indicate that the techniques of "listening" and "non-feedback" may have major perceptual connotations for people. A contribution to understanding the effects of non-directive counseling, human relations in organizations, and other related areas could be made, if more were known about how people perceive and interpret non-feedback behavior of leaders and counselors.
SUMMARY

The purpose of this study was to demonstrate that methodological techniques could be developed which would indicate that changes in behavior occurring during a laboratory training experience could be operationally defined and measured. The study investigated behavior occurring at the perceptual and behavioral levels through the use of participant, trainer, and observer reports and responses.

The training group participants, twelve executives of a medium-sized corporation undergoing a 3 and 1/2 day laboratory, provided free-response descriptions of themselves and other group members before and after the laboratory. They completed interval type ratings on each of 20 descriptive items before and after training on themselves and other group members. During the final session participants and trainers ranked the training group members on amount of change shown, amount of help given to group members, amount of help received from group members, and amount of defensive (or guarded) behavior shown during the group meetings. Two observers independently recorded the verbal behavior of the group members during the T-group sessions.
Frequency counts and t-tests for differences between means were used to identify changes in pre vs. post measures of free-response descriptions and adjective rating scales. Correlational techniques were used to assess agreement among participants and trainers on the behavior ranking scales, and between observers on the verbal behavior reports. Correlational techniques were also used to determine the relations among the findings of the several survey techniques employed in data collection.

It was found that participants showed little agreement in the specific words used to describe themselves and others. Changes, as assessed by the descriptive ratings, were variable with respect to the individuals and the semantic items rated, but the group as a whole tended to be seen as "more dedicated," "more capable," and "less slow" after training. The member who showed the greatest number of pre vs. post changes was well-known to the group and the person who received the fewest pre vs. post changes was the only "stranger" member of the group.

The speech unit recordings confirmed that independent observers could reliably report who spoke, to whom they spoke, and the general content of the message, but could not agree on the general "affect" or tone of the message. Further, the verbal behavior records supported the general premise
that groups have developmental stages. It was possible to support the assumption that verbal behavior in training groups is highly interaction orientated or two-way communication.

The trainers, who could be seen as having more homogeneous concepts of the behaviors ranked, showed a higher degree of consistency on their ranking of global behavior than did the participants. It was established that global behaviors which showed a high degree of consistency were highly related to verbal behavior. Specifically, those subjects who spoke most frequently were seen as having given the most help to group members and as having shown the least defensive behavior. An "investment" concept was postulated to account for the finding that group members felt that a person who changed was one who had received help from the group members.

Implications of the present findings and suggestions for further research were discussed.
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APPENDICES
APPENDIX A

SAMPLE OBSERVER RECORDING SHEET FOR CODING

VERBAL BEHAVIOR DURING THE T-GROUP SESSIONS

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APPENDIX B

FORM FOR COLLECTING SUBJECTS' FREE RESPONSE

DESCRIPTIVE PHRASES ABOUT SELF AND OTHER T-GROUP MEMBERS

Your name:__________________________________________

(Name of person to be described)

Positive
1.

2.

Negative
3.

4.

(Name of person to be described)

Positive
1.

2.

Negative
3.

4.
APPENDIX C

PRE-GROUP AND POST-GROUP DESCRIPTIVE RATING SCALES

Name: _______________________

Name of person to be described: ________________________________

Put an X on the interval of the line to show how well, in your opinion, the descriptive phrase above the scale fits the person whose name is at the top. For example, if the phrase fits perfectly put an X in the interval over the term "descriptive"; if it does not fit at all put an X in the interval over "nondescriptive"; you may place your X in any interval between the two extremes. Mark between—not on—the dividing lines.

SLOW

| __________________ ______| nondescriptive
| descriptive

SELF CONFIDENT

| __________________ ______| nondescriptive
| descriptive

GOOD APPEARANCE

| __________________ ______| nondescriptive
| descriptive

HEAVY

| __________________ ______| nondescriptive
| descriptive

TOO QUIET

| __________________ ______| nondescriptive
| descriptive

DEPENDABLE

| __________________ ______| nondescriptive
| descriptive
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APPENDIX D

POST-GROUP BEHAVIOR RANKING FORM FOR AMOUNT OF CHANGE SHOWN DURING THE T-GROUP

Rank each member, including yourself, on amount of change shown during the period of this T-Group. The way you should go about this is first to assign the rank of 1 to the member who has changed most; next give the rank of 12 to the member who, in your opinion, has changed least; then assign the rank of 2 to the member second highest in amount of change; then give the rank of 11 to the member second to last in amount of change, etc. Continue alternating from next top to next bottom until you have ranked all members. Cross out each member's name on the right side of the paper as you use them in the ranking.

Ranks

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12. (Alphabetized

list of 12 participants'

names printed

here)
APPENDIX E

POST-GROUP BEHAVIOR RANKING FORM FOR AMOUNT OF HELP GIVEN TO GROUP MEMBERS

Rank each member, including yourself, on amount of help given to group members during the period of this T-Group. The way you should go about this is first to assign the rank of 1 to the member who gave the most help to the group members; next give the rank of 12 to the member who, in your opinion, gave the least help to the group members; then assign the rank of 2 to the member second highest in amount of help given; then give the rank of 11 to the member second to last in amount of help given, etc. Continue alternating from next top to next bottom until you have ranked all members. Cross out each member's name on the right side of the paper as you use them in the ranking.

Ranks

1. (Alphabetized list of 12 participants' names printed here.)
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
APPENDIX F

POST-GROUP BEHAVIOR RANKING FORM FOR AMOUNT OF HELP RECEIVED FROM THE GROUP

Rank each member, including yourself, on amount of help received from the group during the period of this T-group. The way you should go about this is first to assign the rank of 1 to the member who received the most help from the group; next give the rank of 12 to the member who, in your opinion, received the least help from the group; then assign the rank of 2 to the member second highest in amount of help received; then give the rank of 11 to the member second to last in amount of help received, etc. Continue alternating from next top to next bottom until you have ranked all members. Cross out each member's name on the right side of the paper as you use them in the ranking.

Ranks

1.  (Alphabetized list of 12 participants' names printed here.)
2.
3.
4.
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9.
10.
11.
12.
APPENDIX G

POST-GROUP BEHAVIOR RANKING FORM FOR AMOUNT OF GUARDED (OR DEFENSIVE) BEHAVIOR SHOWN DURING THE T-GROUP

Rank each member, including yourself, on amount of guarded (or defensive) behavior shown during the period of this T-Group. The way you should go about this is first to assign the rank of 1 to the member who showed the most guarded (or defensive) behavior; next give the rank of 12 to the member who, in your opinion, showed the least guarded (or defensive) behavior; then assign the rank of 2 to the member second highest in amount of guarded (or defensive) behavior shown; then give the rank of 11 to the member second to last in amount of guarded (or defensive) behavior shown, etc. Continue alternating from next top to next bottom until you have ranked all members. Cross out each member's name on the right side of the paper as you use them in the ranking.

Ranks

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.

(Alphabetized list of 12 participants' names printed here.)
### APPENDIX H

**SPEECH UNIT FREQUENCY IN EACH SPEECH CATEGORY, PER SESSION, AS RECORDED BY OBSERVER X AND Y**

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|      |      |      | 243  | 248  | 245.5 |

#### AFFECT

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**Total**

|      |      |      | 100  | 26   | 63    |

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102
## APPENDIX H CONTINUED

### FREQUENCY OF SPEECH UNITS IN EACH CATEGORY BY SESSIONS

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FREQUENCY OF SPEECH UNITS IN EACH CATEGORY BY SESSIONS
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**FREQUENCY OF SPEECH UNITS IN EACH CATEGORY BY SESSIONS**

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- P 408 334 371
- T 41 5 23
- T 19 39 29

**AFFECT**

- P 86 1 43.5
- P 37 53 45
- T 0 1
- T 1 2

**Total**

- P 726 593 659.5
- P 124 57 90.5
## APPENDIX H CONTINUED

### FREQUENCY OF SPEECH UNITS IN EACH CATEGORY BY SESSIONS

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| Total   | 461.5  |
## APPENDIX H CONTINUED

FREQUENCY OF SPEECH UNITS IN EACH CATEGORY BY SESSIONS

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FREQUENCY OF SPEECH UNITS IN EACH CATEGORY BY SESSIONS

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APPENDIX I

ALPHABETIZED LISTING AND FREQUENCY COUNT OF FREE RESPONSE WORDS AND PHRASES USED BY SUBJECTS IN DESCRIBING SELF AND OTHER GROUP MEMBERS:

Pre-Group Positive Words and Phrases

- administers well
- affable 3
- aggressive 4
- agreeable 2
- always pleasant
- ambitious 4
- analytical
- analytical mind
- approachable
- attractive
- bold
- bright
- businesslike appearance
- calm 2
- candid
- capable 7
- careful
- cheerful
- cognitive
- communicates well
- competent 5
- confident
- congenial
- considerate
- conversationalist
- cooperative
- courteous
- decisive 2
- dedicated 5
- deep feelings for others
- deliberate
- demanding 2
- dependable 6
- detailed
- determined 2
- does good job
- does his job well
- easy going 2
- easy to meet
- easy to respect
- enjoys life
- even tempered
- excellent organizer
- extrovert
- extroverted
- fair 2
- fairly intelligent
- fairly likeable
- fairly neat appearance
- fairness
- fast
- fits in well
- forceful
- friendly 8
- friendly with personal friends
- fun to be with
- gentleman
- good advice
- good appearance 6
- good at job
APPENDIX I CONTINUED

good boss
go good conversationalist
go good disciplinarian
go good engineer 3
go good first impression
go good impression 2
go good intelligence
go good labor relations man
go good listener 3
go good man
go good natured 2
go good salesman
go good sense of humor
go good talker 2
go good thinker 6
go good company rep.
happy go lucky
hard worker 3
hard working 8
helpful
honest
imagination
impression
innovates 2
inspires confidence
intelligent 5
knowledgeable 2
laughs a lot
likeable 4
likeable guy
likeable person
loyal 3
manly
mature
mean looking
neat 4
neat looking
nice fellow 2

nice guy 3
nice guy outside work
no nonsense
one of best workers I know
open
outgoing 5
perceptive 2
personable 2
personal warmth
personality
persuasive 2
pipe smoker
pleasant 3
pleasant appearing 2
poised
positive 2
quick on up take
quiet
quiet appearing
religious and family oriented
respected by subordinates
self assured
self centered
self confident 6
self drive 2
sense of humor 5
shares with others
sharp 3
sharp mind
sincere 2
slow plodding thinker
small 2
small in size
smart 3
smart fellow
smooth 2
social graces
solid
speaks well
straight thinker
strong ability
strong church supporter
strong leader
strong man
strong voice
supposed to be a comer
supposed to know his line
of work well
tactful
teacher
technically astute
thinker 2
thorough 2
thoughtful
tremendous warmth
typical PR personality

understanding 3

very ambitious
very aware of employer needs
very cooperative in my dealings
very intelligent
very likeable
very mature
very quiet
very sharp
very sincere
very smooth

warm
warm feelings for subordinates
warm personality
well dressed
well mannered
well organized 2
wide experience
APPENDIX J

ALPHABETIZED LISTING AND FREQUENCY COUNT OF FREE RESPONSE WORDS AND PHRASES USED BY SUBJECTS IN DESCRIBING SELF AND OTHER GROUP MEMBERS:

Pre-Group Negative Words and Phrases

ability to retain
defensive
detail conscious
defense

detail conscious
detailed
does not push enough
does not take a position
doesn't appear very friendly
doesn't appear serious minded
doesn't command respect
doesn't know
doesn't smile too often
dominated unduly by superiors
dominating
domineering
do not 2
drinking
dry sense of humor
easily led
easy
easy going 3
english usage
exaggeration

fat

firm attitudes - not easy to change

from the South

gets angry
glad hander
goes into great detail
good administrator
gray hair
griper
APPENDIX J CONTINUED

happy go lucky negative
hard headed negative attitude
hard nosed nervous
has definite likes and dislikes nervous habits
hasty noisy
heavy 6 nonaggressive
heavy bearded not a doer
high brow not aggressive
hurt when ignored not always sure of what is
impersonal the most important idea on
impulsive 3 his mind
in a hurry not a pusher
inclined to go his own way not completely open
indecisive not completely sincere
inexperienced not easily liked
insecure 4 not forward enough
insincere 4 not imaginative
intelligent in his field not sincere
introvert not too organized
jumps to conclusions not very forceful

kind of quiet opinionated 2
lacking in detailing outspoken
lack of confidence overbearing 3
lack of confidence over cautious
lack of new ideas over confidence
lacks conversation ease over confident
lacks decision making over impressive
lacks depth overly indulgent
lacks experience overly natty
lacks some follow through overly self important
late overly smooth
lost in thought overly sure of himself
loud overpowering
makes decisions too quick overweight 2
misunderstood at times overwhelming

narrow people under him lack
narrow background confidence
narrow view 2 personal bearing
needs ego support pipe smoking
precise poor file system

preoccupied 3
procrastinates
production man
public speaking
pushed by superiors
pushy to point of offense
querulous
quibbling
quick
quick deciding
quiet 9

relaxed
reserved 2
rigid
rough edges
"rules" by committee
ruthless competitor

salesman type
seems to carry a grudge
seems to over emphasize minor
points
self ego
self fortitude
self praising
set in ways 4
sharp
short
shy
sing-song reports
slightly over bearing
sloppy dress
slow 4
slow analyzer
slow manner
slow talking
slow to make decisions
smokes a pipe 2
smokes cigarettes
snores
somewhat aloof
southerner
still learning
studious appearing
talkative 3
talks a lot
talks too loud
talky
that homely look
too big
too conventional
too critical of others
too definite
too easy going 2
too fast
too happy go lucky 3
too heavy
too honest
too impressive
too independent
too large
too likeable
too many details
too overweight
too positive
too quiet 5
too relaxed
too satisfied with self
too serious
too smooth 3
too steady
too sure
too sure of self
too talkative 2
touchy re: work

unavailable
undetermined 2

verbose
very meticulous
very nervous

weak in personnel area
weight 3
white 2
won't listen 2
works too fast
worrier
### APPENDIX K

**ALPHABETIZED LISTING AND FREQUENCY COUNT OF FREE RESPONSE WORDS AND PHRASES USED BY SUBJECTS IN DESCRIBING SELF AND OTHER GROUP MEMBERS:**

#### Post-Group Positive Words and Phrases

<table>
<thead>
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<th>Word/Mention</th>
<th>Frequency</th>
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<td>a careful thinker</td>
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<td>ability</td>
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<td>ability to lead people</td>
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<td>appearance</td>
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<td>assured</td>
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<td>attractive</td>
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<td>attracts comradship</td>
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<td>capable appearance</td>
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<td>capable in profession</td>
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<td>capable in technical field</td>
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<td>charming</td>
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<td>commands respect</td>
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<td>comprehends</td>
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<td>concern for people</td>
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<td>confident</td>
<td>4</td>
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<tr>
<td>consistent</td>
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</table>
gentleman
gets things done
gives credit
good appearance 6
good dresser
good impressive speech
good leader 3
good listener
good looking
good natural leader
good natured
good observations
good observer
good speaker
good thinker 5
guts
guts to stand for what he believes

handsome
hard working 2
helpful 6
highly interested in improving self
honest 8
honest in thought

ideas
impeccable appearance
initial impact
intelligent 7

kind 2
knowledgeable

makes a good appearance
man's man
most sincere

neat
neat appearance
neatness
nice guy

observes well
open mind
outgoing 4

personality
pleasant 3
polished
positive 4
precise
precise speech
projects

qualified
quick acting
really a nice guy
recognizes problems
recognizes weaknesses

self assured
sells well
sharp 2
sharp mentally
sincere 22
sincerity 2
single purposed
smart 3
smooth but solid
smooth talker
solid
solid as a rock
somewhat rigid
speaks well
speech ability
speed
steady
strong 6
strong competency
supporting
sure

takes interest
talented 2
talkative
task master
technical
thorough 3
thorough in profession
trying hard
trys hard to do well
trys to project

under control
understands others

versatile
very cool
very precise
voice

warm 3
will to succeed
willing to stand up and be counted
willingness to learn
works to improve
APPENDIX L

ALPHABETIZED LISTING AND FREQUENCY COUNT OF FREE RESPONSE WORDS AND PHRASES USED BY SUBJECTS IN DESCRIBING SELF AND OTHER GROUP MEMBERS:

Post-Group Negative Words and Phrases

a little loud
da little smooth
afraid
afraid of criticism
almighty
aloof 2
aloof appearance
aloofness
angers easy
anxious 3
argumentative
attempt to mimic Boss
autocratic

boisterous 2

calculating
caucustic
cautious 3
clams up under stress
comes through as insecure
conceited
concerned

debonnaire
defeated
defensive
devious
didn't bounce back
difficult to communicate with
difficult to talk to unless
you know him well
diffident appearing
disorganized
does not project right
doesn't come through as driver
doesn't inspire confidence
doesn't listen
doesn't make friends easily
doesn't sell goals
doesn't want us as friends
double personality
dry sense of humor
easily changed
easily converted
easily moved
easy going
ego centered
egotistical
emotions show too visibly
emulates
excessive confidence
excitable 2
expressionless 2

fat 2
"fat cat"
few get thru
fixed mind
frownful
great stone face
guarded 2

had to conform himself
happy-go-lucky
hard to know
hard headed
heavy 6
hesitant
hides need for support
APPENDIX L CONTINUED

hood
hostile defense
hot tempered

impulsive 3
inability to communicate
inconsiderate
indecisive 3
insecure 7
insecurity
irritating voice

jumps too quickly to conclusions

know it all 2

lack of animation - spontaneity
lack of being involved
lack of confidence
lack of spontaneity
lack of total commitment
lack of trust in other people
lacks basic trust in others
lacks experience
lacks goals
lacks vocal expression
likes what he is doing
limited outlook
loosing ambition
loud

monopolizes

needless
needs direction
needs faith in others
needs more color in ordinary situations
needs recognition
negative
negative attitude

nervous 2
non decisive
no self expression
not animated
not definite enough
not dynamic
not expressive or contributing
not flexible
not giving in nature
not hard worker
not polished
not sure
not task oriented enough
not well organized

only a participator in his known world
opinionated 2
overbearing 2
overconfident
over done
overly concerned
overly concerned with impressions he leaves
overly questioning
overly self concerned
overly thoughtful

play boy
poor communication
prone to nervous actions
pushy

questionable
quiet 4

rambles
rationalizes
reacts too fast
reluctancy to use expression
reserved 4
resists change
rigid
rigid in action and opinion
rigid in job
rushes too much

sarcastic
scared to "death"
self centered
sell oneself - be more forceful
set in ways
sharp
should share more
should lose weight
shows resistance to change
shows too much emotion or anxiety
sloppy
sloppy appearance
slow
slow appearing
slow in decisions
slow mixer until person gets to know him
slow thinker
smug
some rough edges
somewhat academic
speaks too quickly
"stand offish"
stern
stubborn
suspicious
superficial
talks too much
talky
temper
tends to be hard to meet
tense
tension
too aloof
too calculating
too critical
too easy
too heavy
too loud
too many emotions control him too much
too many interests
too much an "engineer"
too much pride
too positive
too quick
too quick analysis
too quiet
too ready to make commitments
too reserved
too retiring
too satisfied - not a real pusher
too smart
too smooth
too stand offish
too sure
too talkative
too verbose
too wordy
trying to cover up
two selves
tyrant

uncertain of self and goals
uncommunicative
under plays
under rates self
under sells self
unstable
unsure
using other people instead of helping

very quiet
very unsure
voice
weak
weight
withdrawn 4
won't get involved
wordy
wouldn't offend

yes man
APPENDIX M

ALPHABETIZED LISTING AND FREQUENCY COUNT OF FREE RESPONSE
WORDS AND PHRASES USED BY SUBJECTS IN DESCRIBING EACH
SPECIFIC GROUP MEMBER

SUBJECT 1

Pre-Group Positive

agreeable
ambitious 2
bright
competent
confident
detailed
does good job
fair
good appearance
good first impression
good listener
good thinker
knowledgeable
neat
pleasant appearing
poised
self centered
smooth
social graces
strong ability
supposed to be a comer
very sharp
well dressed

Pre-Group Negative

aloof
always knows
cold
critical
doesn't appear very
friendly
from the South
goes into great detail
heavy
hurt when ignored
inexperienced
nonaggressive
overbearing
over confidence
over impressive
quiet
set in ways
slow
smokes cigarettes
somewhat aloof
studious appearing
talkative
too smooth
white
(omitted)
APPENDIX M CONTINUED

Post-Group Positive

ambitious
capable
capable in technical field
competent 3
dapper
dedicated
doesn't show tension
follows instructions
friendly
good appearance
good dresser
good looking
handsome
neat pleasant
really a nice guy
smooth but solid
smooth talker
strong competency
supporting
technical
trys to project

Post-Group Negative

a little smooth
anxious
cautious
concerned
debonaire
doesn't make friends
easily
easily changed
few get thru
indecisive
insecure
irritating voice
know it all
lack of confidence
lack of trust in other people
overly concerned with impression he leaves
reserved
somewhat academic
speaks too quickly
too much an "engineer"
too quiet
too smooth
too sure
uncertain of self and goals
weak
### SUBJECT 2

**Pre-Group Positive**
- competent
- cooperative
- dedicated
- deliberate
- dependable
- easy going
- good listener
- good thinker
- hard working
- likeable
- manly
- nice fellow
- one of best workers I know
- personable
- quiet
- quiet appearing
- self drive
- slow plodding thinker
- solid
- thinker
- thorough

**Pre-Group Negative**
- always in hurry
- defensive
- easily led
- easy
- easy going
- good administrator
- heavy
- insecure
- lack of new ideas
- not aggressive
- not very forceful
- overweight
- poor planner
- preoccupied
- pushed by superiors
- self fortitude
- sloppy dress
- slow
- too big
- too easy going
- too likeable
- too steady

(omitted)
### APPENDIX M CONTINUED

<table>
<thead>
<tr>
<th>Post-Group Positive</th>
<th>Post-Group Negative</th>
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<td>analytical</td>
<td>anger easy</td>
</tr>
<tr>
<td>calm</td>
<td>defeated</td>
</tr>
<tr>
<td>capable</td>
<td>difficult to talk to</td>
</tr>
<tr>
<td>competent</td>
<td>unless you know him well</td>
</tr>
<tr>
<td>completely open</td>
<td>doesn't inspire confidence</td>
</tr>
<tr>
<td>consistent</td>
<td>expressionless</td>
</tr>
<tr>
<td>dedicated 2</td>
<td>fat</td>
</tr>
<tr>
<td>dependable</td>
<td>frownful</td>
</tr>
<tr>
<td>good natural leader</td>
<td>heavy 3</td>
</tr>
<tr>
<td>hard working</td>
<td>indecisive</td>
</tr>
<tr>
<td>helpful 2</td>
<td>lack of animations - spontaneity</td>
</tr>
<tr>
<td>kind</td>
<td>lack of total commitment</td>
</tr>
<tr>
<td>sincere 5</td>
<td>needs direction</td>
</tr>
<tr>
<td>solid</td>
<td>not definite enough</td>
</tr>
<tr>
<td>solis as a rock</td>
<td>not polished</td>
</tr>
<tr>
<td>strong</td>
<td>slow 3</td>
</tr>
<tr>
<td>takes interest</td>
<td>slow appearing</td>
</tr>
<tr>
<td>very precise</td>
<td>slow in decisions</td>
</tr>
<tr>
<td></td>
<td>some rough edges</td>
</tr>
<tr>
<td></td>
<td>stubborn</td>
</tr>
<tr>
<td></td>
<td>unsure</td>
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</tbody>
</table>
APPENDIX M CONTINUED

SUBJECT 3

Pre-Group Positive

aggressive
calm
capable 2
cheerful
excellent organizer
friendly 2
good appearance
good engineer
good intelligence
good thinker
hard worker 2
loyal
no-nonsense
positive
self drive
sharp
straight thinker
strong man
technically astute
warm feelings for subordinates
well organized

Pre-Group Negative

a desire not to be led
a little sour
acts older than is
boisterous
brash
broad beamed
bullish
happy-go-lucky
hard headed
heavy
misunderstood at times
over bearing
personal bearing
quibbling
quiet 2
ruthless competitor
seems to carry a grudge
that homely look
too definite
too honest
too independent
too sure of self
worrier
APPENDIX M CONTINUED

Post-Group Positive

ability
aggressive
capable
 capable in profession
competent
concern for people
confident
decisive
directness
dynamic
enthusiasm
gives credit
good thinker
honest
honest in thought
intelligent
recognizes weaknesses
strong
talkative
trying hard
warm

Post-Group Negative

argumentative
boisterous
caustic
easily moved
had to conform himself
hides need for support
hood
impulsive
jumps too quickly to conclusions
lacks basic trust in others
limited outlook
loud
overbearing
overly questioning
sarcastic
set in ways
sharp
shows too much emotion or anxiety
suspicious
temper
too critical
too smart
unsure
(omitted)
SUBJECT 4

Pre-Group Positive

affable
aggressive
agreeable
capable
dedicated 2
dependable
fairness
fits in well
friendly
good appearance
good disciplinarian
good engineer
good thinker
hard working
honest
neat looking
nice guy
pleasant
religulous and family oriented
respected by subordinates
very cooperative in my dealings
very intelligent
very sincere

Pre-Group Negative

ability to retain
always serious look
doesn't command respect
dominated unduly by superiors
easy going
english usage
heavy bearded
introvert
insecure 2
lacks conversation ease
narrow background
not a pusher
not forward enough
not imaginative
over cautious
poor file system
preoccupied
quiet
shy
southerner
too quiet
too sure
weak in personnel area
### Post-Group Positive

- capable
- competent
- competent worker
- comprehends
- dedicated
- dependable 2
- drive
- friendly
- gentleman
- good listener
- hardworking
- honest
- qualified
- recognizes problems
- sincere 3
- sincerity
- somewhat rigid
- steady
- thorough
- thorough in profession
- understands others

### Post-Group Negative

- anxious 2
- difficult to communicate with
- emotion shows too visibly
- excitable
- hesitant
- hostile defense
- insecure
- insecurity
- lacks vocal expression
- nervous
- quiet 3
- slow
- tense
- too quiet 2
- too reserved
- too retiring
- trying to cover up voice
- withdrawn
- wouldn't offend
APPENDIX M CONTINUED

SUBJECT 5

Pre-Group Positive

administers well
attractive
considerate
demanding
dependable 2
does his job well
friendly with personal friends
good appearance
good engineer
good impression
hard working 2
intelligent 2
likeable guy
neat
sense of humor
sharp mind
speaks well
strong church supporter
strong leader
very quiet
well organized

Pre-Group Negative

appears "cold" to employees
curt
doesn't smile too often
dry sense of humor
gripper
impersonal
indecisive
insincere 2
kind of quiet
narrow
negative
negative attitude
people under him lack confidence
preoccupied
production man
querulous
quiet
seems to over emphasize minor points
set in ways
sharp
slow
slow to make decisions
too quiet
APPENDIX M CONTINUED

Post-Group Positive

appearance
 capable
 competent 2
 conscientious
 dedicated
 dependable 2
 earnest
 follows through
 good appearance 2
 good observations
 highly interested in improving
 honest
 intelligent
 open mind
 precise
 precise speech
 sincere 2
 sincerity
 single purposed
 thorough

Post-Group Negative

cautious
 comes through as insecure
 dry sense of humor
 expressionless
 inability to communicate
 insecure
 lack of spontaneity
 negative
 negative attitude
 overly thoughtful
 self questionable
 reserved
 resists change
 slow mixer until person gets to know him
 slow thinker
 suspicious
 tension
 too reserved 2
 under rates self
 unsure
 very unsure
 withdrawn 2
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<td>big</td>
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<td>bold</td>
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<td>good listener</td>
<td>late</td>
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<td>talks too loud</td>
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<td>sharp</td>
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<td>very aware of employer needs</td>
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<td>warm</td>
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<td>warm personality</td>
<td>weight</td>
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<td>clams up under stress</td>
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<td>doesn't listen</td>
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<td>double personality</td>
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<td>fat</td>
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<td>heavy</td>
</tr>
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<td>insecure</td>
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<td>needs faith in others</td>
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<td>not task oriented enough</td>
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<td>positive</td>
<td>rushes too much</td>
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<td>sincere 2</td>
<td>should lose weight</td>
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<td>will to succeed</td>
<td>too quick</td>
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<td>two selves</td>
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<td>tyrant</td>
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</table>
SUBJECT 7

Pre-Group Positive

affable
businesslike appearance
capable
dependable
enjoys life
even tempered
fairly intelligent
gentleman
good appearance
good company Rep.
good talker 2
helpful
intelligent
loyal
neat
nice guy
nice guy outside work
perceptive
small in size
tactful
thorough
very smooth
well mannered

Pre-Group Negative

bookish
cold
condescending
detail conscious
detailed
has definite likes and dislikes
high brow
lack of confidence
narrow view
not easily liked
out spoken
overly indulgent
overly natty
quiet 3
reserved 2
rigid
sing song reports
too serious
too smooth
too talkative
very meticulous
APPENDIX M CONTINUED

Post-Group Positive

assured
bright of mind
capable 3
competent 2
dedicated to task
good appearance
good thinker
guts to stand for what he believes
honest 2
impeccable appearance
intelligent 2
neatness
polished
positive
self assured
sincere 2
strong
very cool

Post-Group Negative

afraid
aloof
aloof appearance
calculating
conceited
defensive
doesn't want us as friends
not giving in nature
opinionated
overbearing
quiet
reserved
rigid 2
scared to "death"
shows resistance to change "stand offish"
stubborn
suspicious
too reserved
too wordy
uncommunicative
very quiet
wordy
APPENDIX M CONTINUED

SUBJECT 8

Pre-Group Positive

calm
capable
communicates well
determined
easy to respect
fair
fairly neat appearance
forceful
good impression
good natured
interesting
knowledgeable
likeable person
mature
mean looking
nice fellow
open
pipe smoker
self assured
self confident
sincere
small
supposed to know his line of work
well
thinker (and analyzer)

Pre-Group Negative

actor
braggart
cold
cold control
does not take a position
doesn't know
insecure
needs ego support
pipe smoking
precise
"rules" by committee
smokes a pipe 2
snores
still learning
talks a lot
talky
too conventional
too quiet 3
too talkative
verbose
very nervous
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SUBJECT 9

Pre-Group Positive

affable
congenial
curteous
easy going
fairly likeable
friendly
good advice
good conversationalist
good labor relations man
good thinker
impressive
innovates
intelligent
neat
nice guy
self confident 2
sense of humor
small
smooth
thoughtful
understanding
very ambitious
very mature

Pre-Group Negative

ability weak
argumentative
cold
conservative
do not
gray hair
hard nosed
impulsive
insincere
lacking in detailing
nervous habits
not always sure of
what is the most
important idea on
his mind
overly sure of himself
pushy to point of
offense
salesman type
slow analyzer
slow manner
slow talking
talkative
too relaxed
undetermined
won't listen
works too fast
(omitted)
APPENDIX M CONTINUED

Post-Group Positive

assured
calm
capable 2
competent
control of his expressions
coolness underfire
courageous
decisive
dedicated
deep thinker
effective
good thinker
Guts
ideas
kind
knowledgeable
neat appearance
nice guy
positive
sincere 2
talented
under control

Post-Group Negative

cautious
devious
diffident appearing
does not project
   right
easy going
guarded
hard to know
loosing ambition
needs more color
   in ordinary
   situations
not dynamic
not expressive or
countibuting
not flexible
not sure
rambles
reluctancy to use
expression
reserved
sell oneself - be
   more forceful
should share more
slow thinker
too much pride
too reserved
too verbose
under plays
under sells self
APPENDIX M CONTINUED

SUBJECT 10

Pre-Group Positive
aggressive
approachable
careful
competent 2
dedicated 2
demanding
extrovert
friendly
hard working
hard worker
inspires confidence
laughs a lot
likeable
personal warmth
persuasive
pleasant appearing
self confident
sense of humor
sharp
sincere
smart
understanding

Pre-Group Negative
Country
does not push enough
doesn't appear serious minded
do not
gets angry
glad hander
inclined to go his own way
jumps to conclusions
lacks experience
loud
makes decisions too quick
narrow view
not completely sincere
over confident
public speaking quiet
rough edges
self ego
self praising
short
slightly over bearing
too happy-go-lucky 2
undetermined
APPENDIX M CONTINUED

Post-Group Positive

ability
ambitious
analytical
capable
commands respect
competent
confident
darn good engineer
dedicated
direct and tough
effective
friendship
gets things done
good leader
good thinker
intelligent
positive
sincere
speed
strong 2
talented
thorough
willing to stand up and be counted

Post-Group Negative

didn't bounce back
ego centered
excessive confidence
fixed mind
guarded
hard headed
impulsive
inconsiderate
insecure
know it all
lacks experience
needs recognition
over confident
poor communication
reacts too fast
rigid in action and opinion
set in ways
stern
temper
too aloof
too loud
too quick analysis
too smart
using other people instead of helping
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APPENDIX M CONTINUED

Post-Group Positive

ability to lead people
ambitious
capable
confident
dedicated
deply interested
drive
forceful
friendly
good speaker
helpful 2
honest
most sincere
observes well
outgoing
projects
sincere 4
trys hard to do well
warm
willingness to learn

Post-Group Negative

disorganized 2
doesn't sell goals
happy go lucky
indecisive
insecure 2
nervous
nondecisive
not hard worker
not well organized
overly self concerned
playboy
prone to nervous actions
rationalizes
sloppy appearance
too easy
too many interests
too ready to make commitments
too verbose
unstable
unsure
weight
yes man
APPENDIX M CONTINUED

SUBJECT 12

Pre-Group Positive

analytical mind

candid

competent

conversationalist

decisive

determined

extroverted

fast

fun to be with

good at job

good salesman

good thinker

hard working

likeable

loyal

outgoing

personable

pleasant

quick on uptake

self confident

sense of humor

smart

smart fellow

wide experience

Pre-Group Negative

ambition

big

boisterous

causal

domineering

firm attitudes - not easy to change

heavy

impulsive

intelligent in his field

lacks depth

noisy

opinionated  2

overly self important

quick

set in ways

slow

too critical of others

too fast

too impressive

too large

too satisfied with self

weight

won't listen
APPENDIX M CONTINUED

Post-Group Positive

aggressive
ambitious
attracts conradeship
capable
capable appearance
decisive 2
good impressive speech
good leader
good observer
intelligent 2
makes a good appearance
outgoing
pleasant
quick acting
sells well
sharp 2
sharp - mentally
sincere
smart
speech ability
voice

Post-Group Negative

almighty
aloof
aloofness
autocratic
doesn't come through
as driver
"fat cat"
heavy 2
hot tempered
impulsive
lack of being involved
lacks goals
likes what he is doing
no self expression
not animated
only a participator in
his known world
rigid
stubborn
too heavy
too quiet
too satisfied - not
a real pusher
tyrant
withdrawn
won't get involved
## APPENDIX N

**t-TEST VALUES FOR PRE-POST DESCRIPTIVE RATING SCALES**

**BY SUBJECT AND ITEM**

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## APPENDIX O
### INTERCORRELATION MATRIX FOR BEHAVIOR RANKING SCALE:
#### AMOUNT OF CHANGE SHOWN

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VITA

Penelope Wasson Dralle was born May 31, 1942 in Kosciusko, Mississippi. She attended public schools and graduated from Kosciusko High School in 1960. She began her college-level studies at Millsaps College, Jackson, Mississippi, in 1960. During the fall semester of 1962, she attended The Institute for American Universities, Aix-en-Provence, France. She completed her studies at Jacksonville University and was awarded a Bachelor of Arts degree from Jacksonville University, Jacksonville, Florida, in 1964.

In 1965 she entered graduate school in the Department of Psychology at Louisiana State University where she was awarded a three year National Aeronautical Space Administration Fellowship. She received the degree of Master of Arts in August, 1966. In January, 1969 she completed requirements for the degree of Doctor of Philosophy in social-industrial psychology and is a candidate for the Ph.D. degree at the Fall Commencement.
EXAMINATION AND THESIS REPORT

Candidate: Penelope Wasson Dralle

Major Field: Psychology

Title of Thesis: The measurement of change during a laboratory training experience: Person perception and verbal behavior patterns.

Approved:

[Signature]

Major Professor and Chairman

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Dean of the Graduate School

EXAMINING COMMITTEE:

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Selena A. Byun

Date of Examination: Jan. 8, 1969