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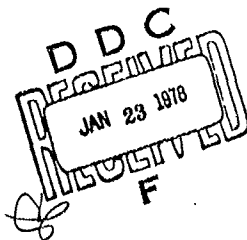
AN EVALUATION OF A HUMAN DEVELOPMENT LABORATORY;
A STUDY OF THE OUTCOME AND PROCESS OF A
LABORATORY LEARNING EXPERIENCE

A Dissertation

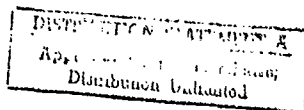
Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

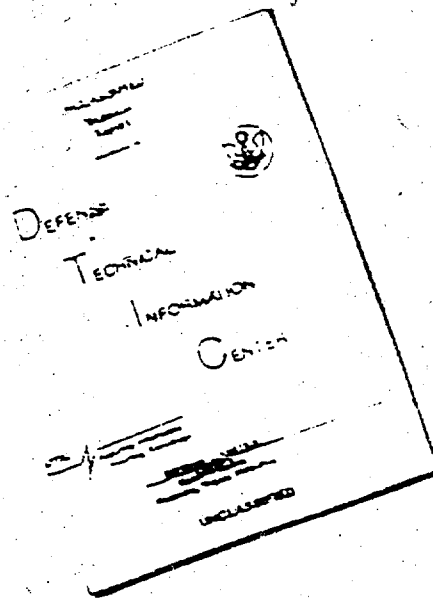
The Department of Psychology



by
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August, 1977



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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER AFIT CI 78-17 ✓	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) An Evaluation of a Human Development Laboratory, A Study of the Outcome and Process of a Laboratory Learning Experience	5. TYPE OF REPORT & PERIOD COVERED Dissertation	
6. AUTHOR(s) Karl J. Krumm	8. CONTRACT OR GRANT NUMBER(s)	
9. PERFORMING ORGANIZATION NAME AND ADDRESS AFIT Student at Louisiana State University and Agricultural and Mechanical College	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS	
11. CONTROLLING OFFICE NAME AND ADDRESS AFIT/CI WPAFB OH 45433	12. REPORT DATE Aug 77	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) Doctoral thesis	13. NUMBER OF PAGES 106 Pages	
	15. SECURITY CLASS. (of this report) Unclassified	
16. DISTRIBUTION STATEMENT (of this Report) Approved for Public Release; Distribution Unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES APPROVED FOR PUBLIC RELEASE AFR 190-17. JERRAN F. GUESSE, Captain, USAF Director of Information, AFIT		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)		

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ACKNOWLEDGEMENTS

Expressing adequate recognition to all who have provided assistance and encouragement during my graduate school career is, indeed, a difficult task. Nonetheless, at the risk of omitting some who may have been overlooked only inadvertently, I should like to offer my sincere gratitude to the following:

Dr. Don Glad for his guidance, stimulation, and support early on in my professional training. His influence remains.

Drs. Virginia Glad and Felicia Pryor for their time helpful ideas, and support both on this project and in my clinical training.

Dr. Ralph Dreger for his valuable suggestions, his reassurance, and his sense of humor. In addition, his concern and kindness given so freely and unconditionally will never be forgotten.

Dr. Perry Prestholdt a "super" minor professor and friend, for the many times we just "talked" and enjoyed ourselves plus the many serious talks of science and all.

Dr. George Dempsey who not only provided a gentle push when I needed it most, but who also helpfully read the early versions of this dissertation.

Delores Franke who diligently typed and did not protest my sometimes unrealistic time demands, a special

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ABSTRACT

This study examined the

The purpose of the present study was to examine the effects of a Human Development Laboratory (HDL) on successful life insurance agents. Moreover, the study attempted to determine the relationship between three process variables and the amount of change resulting from the experience. In order to examine the outcome of ^{the laboratory} training, the fourteen participants of the HDL, and 13 comparison subjects who attended a business seminar, completed two self-report measures before, immediately after, and eight weeks following their respective schools. In addition, both laboratory and comparison subjects were rated by designated back-home observers on their interpersonal behavior once before, and again eight weeks following the educational experience. In comparison with the business seminar participants, the laboratory trainees reported greater gains in interpersonal effectiveness immediately after training. However, at the eight-week follow-up, administration the gains had faded to the extent that the laboratory and comparison groups were approximately at the same level of self-reported interpersonal effectiveness. On the more objective measure of personal growth, the Personal Orientation Dimensions, the groups did not significantly differ in their responses. In addition, the ratings made by the back-home observers failed to demonstrate a difference between the two groups of subjects after

training. The two change mechanisms measured during the laboratory, self-disclosure and interpersonal feedback, failed to correlate significantly with outcome change scores at the immediate posttest or at the time of follow-up testing. A third process variable measured during the laboratory, the amount of reported satisfaction with each group session, was found to be related to self-reported change ratings made immediately following the laboratory. Hypotheses regarding the lack of findings between the process measures and outcome change were discussed as were specific recommendations for future research.

INTRODUCTION

The so called "human potential movement" has exhibited surprisingly rapid and extensive growth in recent years. Hundreds of "personal growth centers" have sprouted up across the country from Bethel, Maine, to Esalen, California. Over the last several years the professional and public literature has been replete with articles concerning sensitivity training, encounter groups, and laboratory learning (e.g., Dinges and Weigel, 1971; Blanchard, 1970; and others). The use of "human potential" group techniques has found its way into a variety of settings including government agencies, business and industry, educational institutions, prisons and churches. The range of individuals who have been affected spans almost all social levels and occupations. The group technologies have taken on increased diversity and have been proclaimed the "new panacea".

It was just after World War II that the first well known forerunners of the present day movement occurred. The first, began in 1946, when a group of social scientists were asked by the state of Connecticut to conduct a training workshop for community leaders on dealing with interracial tensions. Kurt Lewin, who had founded the Research Center for Group Dynamics at Massachusetts Institute of Technology, headed a research team which attempted to evaluate the outcome of the training conference. The basic format of the conference utilized small discussion

groups in which research recorders kept process records of what happened. These process records were then fed back to the workshop staff during planning sessions each evening. However, at the request of several of the workshop participants, the staff meetings were soon opened to everyone. Group participants found that they profitted enormously from the observations of how the groups worked and information about their own behavior and the impact it had on others. From this experience grew the emphasis on the self-examination of group process as part of the learning experience.

Although he died shortly after the Connecticut conference Lewin exerted considerable influence on the human relations field. Much of that influence has been carried on by his students especially Leland Bradford, Ronald Lippitt and Kenneth Benne. They realized fully the implications of the Connecticut conference and sponsored further group experiences in Bethel, Maine. They refined the purpose of the small discussion groups (eventually called training or T-groups) to include the examination of group process and feedback as reported by a recorder observing the group. This type of experiential group learning became well known, and by 1950, an organization referred to as the National Training Laboratories (NTL), was formed to offer opportunities for such experiences.

The early thrust of NTL was focused on industrial fields, training executives and management level personnel

in "human relations." Through the 1950's, the T-group increasingly came to focus on interpersonal behavior and the movement was significantly influenced by a second major school of thought.

This second influence grew out of the work of Carl Rogers at the University of Chicago. Rogers, just after World War II, was asked to aid in the training of pastoral counselors. He and his colleagues felt that a pure didactic program was unacceptable and decided to blend a cognitive and experiential learning into an intensive training course. The major emphasis was on the self-understanding of one's interpersonal behavior and attitudes, and how they impacted on interpersonal relationships. The Rogers' orientation tends to be more therapeutically oriented than the Bethel T-groups. Over the years the personal and therapeutic growth orientation has become merged with the focus of training in human relations skills, and the two combined form the core of the trend which is spreading so rapidly throughout the country today.

This rapid growth suggests that the group movement has been a response to pressing needs felt by our contemporary culture. Various writers (Rogers, 1970; Yalom 1976) have enumerated several such needs. The most frequently mentioned factor is the apparent increasing dehumanization of the individual toward the point where he or she will no longer count. The advance of technology, computerization, and the onward march of automation testify to the decreasing import-

ance of the individual. A second factor influencing the growth of human relations training has been the perceived shallowness of interpersonal relationships of today. The highly competitive and mobile American culture encourages facade-building, limits intimacy, produces fear of honest self-disclosure, lacks commitment and leads to loneliness and alienation. Finally it has been suggested that our country has reached a level of such affluence that people can now afford to seek fulfillment of higher psychological needs (London, 1974). With material needs largely satisfied, individuals are turning to the psychological world reaching for increased authenticity and self-fulfillment. "The goal of living life more fully, of developing one's possibilities in all their richness and complexity, appears to be one of the major motivations that man is turning to (Rogers, 1970)." In this contemporary scene has come the growing conviction that our cultural discontents can be favorably influenced by the utilization of intensive group experiences.

The ever expanding utilization of intensive group experiences in recent years, however, has not been without stiff opposition. The positions and criticisms voiced have ranged from extremist emotional outbursts to clearly reasoned and defended arguments.

The more extreme critics have applied the labels of brainwashing and behavior-programming (Hollister, 1969). Some have expressed fear that the group movement has contri-

buted to the growing immorality and increasing deterioration of the norms and mores of the American culture, especially those of sexual and emotional control.

Lewis (1970) has expressed concern about the dependency inducing quality of groups which may lead some of the members to experience the group as an end in itself, and as a substitute for emotionally gratifying interpersonal relationships outside the group membership. Perry London (1974) has been particularly critical of the present ethos as shifting from self-fulfillment to "selfish fulfillment" with primary reference to one's own needs and pleasures. In the same light, Brewster Smith (1974) criticized contemporary theory of personal growth, as expressed by many group leaders, as "flagrantly individualistic."

Other critics of the human potential movement have based their points of criticism on the lack of conclusive data that any meaningful, observable behavior changes occur as the result of the training experience. Dunnette and Campbell (1968) have been the classic referenced critics of T-group effectiveness, and its lack of proven impact on participants. They pointed out various methodological weaknesses of the early research and raised serious questions as to what, if any, convincing evidence existed supporting the use of intensive group experiences for training people in human relations.

The expressed concerns surrounding the human relations movement require further examination. However, it is not

within the scope of the present paper to evaluate each and every criticism voiced in the literature. Therefore, three major issues having particular importance to the present discussion will be given further consideration. Those issues are: (a) the problem of definition, (b) the conflict between research and service delivery, and (c) specific research design problems.

Problem of Definition

In reviewing the literature on laboratory learning one quickly notices the broad spectrum of training designs and orientations. As interest and utilization of intensive-group experiences have grown, so has its diversity of forms and methods. This diversity is exemplified by the range of training goals, composition of participants, and frequency of meetings. Training goals, for example, may range from personal growth to team building, from enhanced creativity to organizational development. Participants may be "strangers", "acquaintances", from the same organization, couples, singles, women only, or entire families. Finally the groups may meet for an entire weekend, a week, several weeks, or last continuously for 24 hours. Unfortunately, this range of activities is frequently placed under one of several rubrics such as "human relations training", "encounter", "marathon", "sensitivity training", or "laboratory learning."

Such diversity with absence of any type of systematic taxonomy has brought obvious problems to the task of eval-

uation. Considering the striking differences among groups labeled as laboratory learning, difficulties in (a) appropriately applying criticisms, (b) generalizing from one study to another, and (c) finding commonality of process and outcomes are understandable. Until the different group approaches are defined in terms of their most salient variables (e. g., length, population, leader orientation, theory) comparison across groups and training approaches will continue to be difficult.

Thus, this study will accept a very broad definition proposed by Smith (1975). That is, laboratory learning will be defined here as "a process which (a) occurs in small groups, (b) involves the examination of interpersonal relations among the members of each group, and (c) extends its membership to include those not undergoing psychotherapy." Throughout this paper the terms laboratory learning and intensive group experience will be used interchangeably.

Research versus Service Delivery

Most laboratory learning sessions are conducted in the field by practitioners whose main emphasis is on service delivery. Therefore, it is not surprising that most laboratory environments and designs are determined largely by training or service criteria, not research criteria. In fact, the researcher is many times regarded as an unwelcome intruder. Many group leaders openly resist research and evaluation of their work claiming that such procedures as

data collection interfere with the more important human, personal experience. They claim, for example, that to operationalize such humanistic concepts as "peak experience" will destroy their essence and not contribute to increased understanding.

It is important to note that some group leaders have found ways to balance service delivery and research interests. This compromise has been an outgrowth of the original Lewinian experience in which research data can be collected and fed back to participants as part of the learning experience.

Research Design Issues

The question of how to assess the changes effected through laboratory learning is not a simple one. The barriers to precise and rewarding research are many and directly analogous to the difficulties of psychotherapy research. Back (1972), for example, reported several areas of concern including (a) only one out of three studies employed any type of comparison or control group, (b) only about one-fourth of the studies utilized any type of follow-up procedure, and (c) rarely did a study examine process variables in addition to outcome of training. Cooper and Mangham (1971) have expressed an additional concern involving the appropriate selection of measurement instruments in evaluating the effects of training. These major design issues are dealt with below.

Comparison and contrast groups. The provision of

appropriate comparison groups has been one of the most persistent methodological problems of laboratory research. In some settings, the task of matching comparison subjects to experimental subjects as to level of motivation, age, and availability for measurement has bordered on the impossible. However, without the employment of comparison group (s), the validity of the treatment cannot be assumed. Specifically, none of the many competing explanations for observed effects such as (a) expectations of improvement, (b) group enthusiasm, or (c) repeated administration of measures can be eliminated.

Various solutions, however, have been suggested and successfully employed. Several researchers, for example, have selected populations from which they could more easily place subjects into treatment or comparison groups. Such studies frequently utilize college students or institutional populations and, unfortunately, pay the price of restricting the generalizability of their results (Lieberman, 1971, Back, 1972). Massarik (1965) utilized a comparison group composed of volunteers who agreed to delay training and participate in the research during the interim. However, this approach must deal with the possibility that knowledge that one is a member of a control group may bias his expectations and, therefore, the results of the study. Finally, Miles (1960) formed a matched comparison group by having each participant designate or "nominate" a control person who was in a similar occupation, of the same age and

sex, and who had decided not to participate in training.

The criteria and measurement problem. Another persistent problem in researching the effects of group experience is that of measurement. The range and number of available measurement devices are overwhelming, making the choice of criteria by which to assess the process and outcome of treatment difficult. Gibb (1974), for example, listed over 300 different dependent variables that have been measured as criteria of training outcome. Frequently included measurement tools included participant testimonials, "home-brewed" scales, semantic differentials of self-ratings, psychometric instruments such as the 16PF or California Personality Inventory, locus of control scales, interpersonal behavior indexes such as the FIRO-B, etc.

Some studies have relied totally on one self-report scale while others used a multimethod "shotgun" approach by administering a number of instruments in hopes that at least one might prove to be sensitive to the effects of the training. Both approaches reflect a more basic problem which is that investigators are frequently uncertain as to what dimensions they are trying to evaluate. Moreover, in the case of failure to find changes, one can never be sure whether the training was ineffective or whether the evaluative instruments were not sensitive to the changes.

A final concern in the selection of criteria measures regards the sensitivity of instruments to changes that may occur as a result of group training. In some studies,

investigators have chosen measures that reflect global intrapsychic functioning for which indexes of reliability and validity were available. However, many of these more sophisticated psychometric instruments of global traits are designed to be stable over time and have not been sensitive to those changes that one may expect from a relatively short training session (Anderson and Soloman, 1973). Unfortunately the alternative choice of utilizing specifically designed instruments leaves one without information on reliability, validity, or norms. The researcher is clearly left with a Hobson's choice.

Follow-up measurement. Back (1972) underlines the necessity of making the distinction between effects detectable at the end of training and effects which persist beyond the immediate impact of the experience. Too often researchers have failed to follow up participants after the experience in order to assess what effects have transferred back to the world in which they live. Smith (1973), for example, found that only 31 of 100 studies he reviewed utilized any type of follow-up measurement procedure. Although 21 of these 31 studies found a persistence of change, the low frequency of studies bothering to examine long-term change still leaves the enduring effects of training in question.

Despite the difficulties in research design and implementation there has been a substantial increase in the number and quality of published research on laboratory

training. Recently, for example, Gibb's (1974) review accumulated well over 350 referenced studies on small group training. Lieberman (1976), in a more recent survey of small group research, examined more than 100 studies published in the single year 1973, alone. The trend toward more refined research is documented in a review conducted by Smith (1975). He included only those studies which met a stringent criteria of (a) obtaining measures on both group participants and control subjects, (b) used a repeated measures design and (c) satisfied a minimal time duration of at least twenty hours of training. Included in the review were 100 such studies that met these qualifications of research design.

The present paper will not attempt to review all the research conducted on training groups. However, an attempt to summarize some of the basic findings, present conclusions that may be drawn from the literature, and point out specific studies of interest will be made. This review will consist of first, a general review of the literature, and second, a review of research conducted on the specific model of laboratory learning examined by the present study.

General Review of Research on Laboratory Learning.

A summary of the research conducted on laboratory training will be organized under two sections. First, those studies that have primarily focused on the outcome effects of training will be summarized. Second, those studies that have attempted to examine specific process "mechanisms of

change" will be reviewed.

Outcome studies. A great majority of the research on laboratory learning has been in the form of outcome research. These studies have typically measured participants before and then after their involvement in the training experience. Most often, they ignore the "black box" called training, and focus only on discernible pre-post changes.

With the increasing number of outcome studies has come more convincing evidence for the effectiveness of laboratory training. Out of the 50 outcome studies surveyed by Lieberman (1976), 42 out of the 50 found positive changes. Among their reported findings were lower anxiety, increased internal locus of control, increased social interaction, greater self esteem, value changes, and increased congruity between "real-self" and "ideal-self" ratings.

Further, 78 of the 100 studies examined by Smith (1975) detected changes significantly greater for participants than controls. These changes included many of the same categories as those reported by Lieberman in as much as trainees showed more positive attitudes toward self, a significant convergence of "self" and "ideal" profiles, increased control over their lives, more openness to new experiences, and increased willingness to self-disclose.

At first glance, the new reviews appear to give strong support for Smith's statement that the issue concerning small group training is "no longer whether or not it has effects." However, caution is warranted when one examines

certain aspects of the reported studies. First, many of the investigators continue to use only simple attitude-change type measures. Second, most studies utilize self-report measures to the exclusion of ratings by third parties or behavioral data. Third, the persistence of effects over time have only been infrequently documented. Fourth, although the number of studies using some type of comparison group has increased, those utilizing more sophisticated designs have failed to find significant effects due to training. This last point requires further comment and elaboration.

In addressing the need for specifically designed comparison groups, McCardel and Murray (1974) point out that inert or "back-home" comparison groups control adequately for repeated administration of tests and for events correlated with the passage of time, but not for nonspecific factors such as expectancy of improvement, group enthusiasm, and accepting relationships. To demonstrate their point, they conducted a weekend encounter group and utilized both an at-home control group and an on-site control group. In comparison with the at-home controls, the encounter group participants showed significant improvement on self report measures. On the other hand, the training group participants did not differ significantly from on-site controls who were led to believe they were also in an encounter group but were given only recreational activities. They concluded that the nonspecific factors, especially those

of expectations of change, account for the reported improvement of participants following training groups. Further, demonstration of direct effects due to a laboratory training session must be beyond those also demonstrated by appropriate comparison groups.

In summary, research on the outcome of group experiences has grown both in number and quality. The most recent reviews of the literature have concluded that results support a general conclusion that laboratory training groups do produce positive gains as reported by participants. However, caution is urged since results vary from one study to the next, few studies have included sophisticated comparison groups, and most still lack adequate follow-up procedures.

Process studies. Compared to the number of studies examining outcome, process studies are infrequent. In fact, the author failed to find even one major review article on process measurement of laboratory learning. In general, process investigators who have attempted to examine what goes on during the training have used two methods; self-report by the participants and observer ratings. Regardless of the method of measurement, most process research has focused on such variables as anxiety, self-esteem, moods, and amount of involvement. Few have attempted to measure specific mechanisms of change or specific member experiences hypothesized to be change-inducing. The latter topic of change mechanisms is of most importance for the

present project.

The basic assumption underlying most laboratory training is that participants experience certain events of processes that are essential to inducing change. Thus laboratories are designed so as to provide an opportunity for participants to be involved in such experiences. What exactly these critical experiences are has not been thoroughly explored; still the literature of the past several years has placed significant emphasis on two: self disclosure and interpersonal feedback.

The importance of self-disclosure has had formidable spokesmen in Sidney Jourard (1971) and C. H. Mowrer (1964), who have hailed self-disclosure as the essential mechanism of growth. Jourard argued that the ability to allow one's real self to be known is a prerequisite for a healthy personality. In contrast to the importance attributed to self-disclosure by laboratory training literature, very little research has been conducted on amount of self-disclosure as related to the outcome of a laboratory learning experience.

Of the few studies to examine this concept was the extensive research conducted by Lieberman, Yalom, and Miles (1973). From the events reported by their participants to be crucial to their learning, 20% reported examples of self-disclosure. However, an analysis of the total amount of self-disclosure (self-reported) revealed no significant differences among the outcome categories of learners, unchanged, and negative outcome. When examined over sessions,

self-reported self-disclosure was significantly different for those participants who were categorized as learners as opposed to those labeled as unchanged by outcome measures. That is, learners, by later group sessions, felt that they had disclosed more. This finding tends to support the assumption that the most productive self-disclosure tends to take place in the later sessions of a group. This study constitutes one of the rare studies that attempted to relate the amount of self-disclosure directly to outcome.

Of all the mechanisms of change associated with the occurrence of personal growth and change, feedback is unique to the group learning situation. The importance accorded feedback by many practitioners in the laboratory movement is also reflected in the attitudes of the participants. Feedback was ranked by learners in the Lieberman, et, al., (1973) study as the most important aspect of their experience; in fact, feedback was seen as important by all participants, regardless of outcome.

The term feedback has a long history dating back to the early work of Kurt Lewin. He borrowed the term from rocket engineering and cybernetics, and redefined it as the process by which group members send signals or messages to co-members when they are perceived to be off target in terms of the goals they have set for themselves. Today, feedback is a technique, an interpersonal skill that helps group members achieve their goals and, secondly, that allows

one a means of comparing his own perception of his behavior with other group members' perceptions. Harris (1975) succinctly summarizes, "Giving feedback is a verbal or non-verbal process through which an individual lets others know his perceptions and feelings about their behavior. When soliciting feedback, an individual is asking for others' perceptions and feelings about his behavior. Most people give and receive feedback daily without being aware of doing so. One purpose of laboratory training is to increase the awareness of this process so that it can be engaged in intentionally rather than unconsciously."

The research conducted on the process of feedback parallels that of self-disclosure. That is, although feedback has been touted as the most important aspect of laboratory training, very little research has been conducted on the concept. In the Lieberman, et al., study, the amount of self-reported feedback received did not significantly differentiate between the outcome categories of learners and unchanged. In another study, Freeland (1973) examined the relationship of feedback and outcome in two professionally led marathon groups for graduate students. The results failed to indicate any relationship between the amount and type of feedback (as rated by observers) and the impact of the experience as assessed by self-ideal discrepancy scores.

There is a paucity of research on self-disclosure and feedback in the group setting. At present, no study pro-

vides strong evidence that these mechanisms are central in determining the outcomes of laboratory training. Further research is needed, especially since both concepts have been given overwhelming emphasis in training design and theory.

The Human Development Laboratory (HDL): Research Issues

A specific application of laboratory learning has been in the form of the Human Development Laboratory (HDL) sponsored by the School of Life Insurance Marketing (SLIM) on the campus of University of Southwestern Louisiana at Lafayette, Louisiana. The HDL has been sponsored by SLIM for several years and offered on a tuition basis to life insurance agent who have attained a level of success in sales as defined by membership in the Million Dollar Round Table (MDRT). The laboratory has been designed to aid participants who have a desire to function more effectively on an interpersonal skills level. Specifically, the HDL attempts to provide an environment conducive to allowing each individual an opportunity to receive non-evaluative feedback on the effectiveness of his behavior, along with an opportunity to explore interpersonal communication difficulties specific to each individual.

A considerable amount of informal evaluation of the experience has been continually received from past participants of the HDL. These evaluations, in the form of personal testimonials, have been strikingly positive and have included sensational accounts of the impact of the

experience on the lives of the participants. In addition, various research projects have been conducted to evaluate the process and outcome of the training model utilized.

In general, these research projects have demonstrated positive gains made by group members at the conclusion of training. Merrick (1975), for example, assessed changes that occurred during and immediately after a HDL. At the end of the laboratory subjects' scores on the Edwards Personal Reference Scales reflected their moving toward more likely to be caring, more willing to share themselves with others, and less prone to impose themselves on others in a power-oriented manner. In addition, participants described themselves on the 16PF as being more emotionally mature and confident following the training group experience.

L' Herisson and Krumm (1975) used the Problem Analysis Questionnaire (PAQ) to assess changes in the way participants approached a problem situation. Each trainee was asked to choose a current problem in his life and answer the PAQ questions both before and immediately after the conclusion of the HDL. The PAQ reflects the degree to which a person blames others, the organization, or himself for a current "real-life" conflict. Following the HDL, participants significantly attributed more responsibility for the conflict to themselves and less towards others. In addition, they described themselves as having more responsibility for the resolution of the problem.

Finally, Krumm and Brockhoeft (1976) measured the level

of self-disclosure and interpersonal feedback over sessions of the HDL. They found that participants were rated by co-members as increasingly more self-disclosing and receptive to feedback over the course of the laboratory. In addition, significant changes in the direction of being more inner directed and time competent (living more in the present as opposed to past or future) were found on the Personal Orientation Inventory.

The research to date has focused on changes that occurred during and immediately following the HDL. Several concerns voiced about laboratory research in general may be applied to the evaluation of the HDL. First, none of the above research projects have utilized a comparison group design. Second, the long term effects of the experience have not been examined. Finally, an attempt to relate specific process variables or change mechanisms to outcome is lacking. The present study was an attempt to extend the research on the effects of the HDL with regards to these three concerns.

The Present Study

The main purposes of the present study fell into two categories. The first part of the study focuses on the outcome of the training experience. That is, could it be demonstrated that participation in a Human Development Laboratory produces changes in behavior and attitudes related to increased interpersonal effectiveness? The second part of the study focuses on the relationship of specific

"change mechanisms" measured during the laboratory and changes in interpersonal effectiveness following the training experience. The specific hypotheses associated with each of the two research foci are discussed below.

Outcome. The outcome design of the study utilized two groups of subjects. The first group attended the HDL while the second served as an active comparison group and attended a business school in the same setting. Both groups of subjects filled out a self-report battery of measures two weeks prior to their respective schools, immediately following, and eight weeks after the experience. In addition, all subjects nominated three people in their everyday environment to rate them on a relationship inventory two weeks prior to and eight weeks following the respective school.

The specific hypotheses concerning the outcome of the HDL were as follows:

1. In comparison to the participants of the business school, subjects attending the HDL would show significant improvement on self report measures both immediately after the laboratory and eight weeks following the HDL.

2. In comparison to the participants of the business school, subjects attending the HDL would be rated by the back-home raters as significantly more effective on a relationship inventory eight weeks following the HDL.

Process. The second purpose of the present study was to explore the relationship of two change mechanisms as

measured during the laboratory and the amount of change following the laboratory experience. The two mechanisms, self-disclosure and interpersonal feedback, were measured at several points during the laboratory sessions. In general, it was predicted that positive change demonstrated by laboratory participants would be associated with the amount of self-disclosure and interpersonal feedback experienced. Specifically, the hypotheses were:

1. The degree of self-disclosure during the laboratory would be positively related to the outcome. That is, subjects who demonstrated the most change would also exhibit a greater amount of self-disclosure as measured during the laboratory.

2. The degree of feedback received during the laboratory would be positively related to the outcome. That is, subjects rated as receiving a greater amount of feedback would also demonstrate greater change after the laboratory.

In addition to the two change mechanisms, the degree of satisfaction associated with each group session during the laboratory was assessed. This variable was for exploratory purposes only, and therefore no specific hypotheses were formulated a priori.

METHOD

Subjects

The subjects consisted of participants who attended either the Human Development Laboratory (HDL) or a sales seminar sponsored by the School of Life Insurance Marketing at the University of Southwestern Louisiana. Each subject was contacted by mail three weeks before the school for which he had registered and was asked to participate in the research aspects of the program. The tenor of the letter of solicitation was that SLIM was interested in assessing the impact of their school on those who attended as a part of a developing and ongoing research program.

The participants of the HDL were 14 male life insurance agents who ranged in age from 25 to 68 years old with a mean age of 41. Each of the agents was self-selected for attendance, and paid his own expenses. All participants were current members of the Million Dollar Round Table (MDRT), although the laboratory was in no way associated with that organization.

A group of 30 male life insurance agents who had registered for a sales seminar were selected for possible use as a comparison group. These agents were also MDRT members, self-selected for school attendance, and paid their own expenses. Of these 30 agents, 18 completed the pretest measures, while 5 additional subjects completed only part of the pretest. Over the next two test admin-

istrations, some subjects completed the posttest, others completed only partial sets of the posttest, a few completed the posttest but reported their pretest to have been lost in the mail. After the three test administrations, it was found that 13 agents had completed all phases of the research and were therefore included in this study as a comparison group. The comparison group members ranged in age from 26 to 59 years with a mean age of 39.

All subjects were informed that participation in the research was optional and not required for school attendance. Further, they were informed that their responses would be strictly confidential and that they could discontinue their involvement in the research at any time.

Procedure.

The Human Development Laboratory was held at the facilities of SLIM with the participants arriving the evening before the laboratory and being assigned to double-occupancy, dorm style rooms. The HDL formally began at 8:00 a.m. the following morning and lasted a total of three and one-half days. Each day consisted of three sessions: morning (8:00 a.m. to 12:00 noon), afternoon (1:00 to 5:30 p.m.), and evening (7:00 p.m. to midnight).

The professional staff consisted of a Ph.D. clinical psychologist and three doctoral candidates in clinical psychology. All staff members had conducted at least ten laboratory workshops with the modal number of laboratory experiences being twenty.

The general emphasis of the laboratory was on personal growth, and the overall strategy was to focus on (a) the individual's intrapersonal understanding, (b) the individual's interpersonal effectiveness, and (c) the individual's effectiveness in his work, family, and community. Through this progression, participants were given the opportunity to examine the accuracy of their perceptions of self and others, develop increased understanding of the realm of interpersonal phenomena, and increase their behavioral range and flexibility through experimentation with new modes of relating to others.

In general, each time block of the laboratory was characterized by a deliberate combination of didactic instruction and experiential learning. The instructional input consisted of principles of effective communication and human behavior, and were followed by sessions in which participants were given the opportunity to experiment with techniques utilizing the principles offered. These sessions usually began with structured exercises conducted by the staff, and then led into unstructured small groups in which participants were largely responsible for what happened. A detailed description of each time block of the laboratory can be found in Appendix A.

The sales-oriented seminar was held at SLIM utilizing the same sleeping and meeting rooms as the HDL, but was conducted three weeks later. The school consisted of two and one-half days of personal interaction with the faculty

and co-participants. The faculty consisted of two nationally recognized "supersalesmen" who shared their business operations and procedures, and then conducted informal discussion sessions about their work methods. Like the agents attending the HDL, participants were members of the MDRT, spent several days at the school, and hoped to become more effective in some area of their lives. These characteristics made the sales-seminar a suitable comparison group for evaluating the outcome of the HDL.

Measurement

The main categories of data collection consisted of outcome and process measurements. Outcome measurement included the administration of two self-report measures to both laboratory and comparison subjects two weeks before, immediately following, and eight weeks after the respective school attended. The process measures were internal instruments administered to laboratory participants only. The specific outcome and process measures are discussed below.

Outcome Measurement

Two basic instruments were used to assess change from pre-laboratory attitudes and behavior to attitudes and behavior following the experience of the HDL. Pretest measures were mailed to the subjects three weeks prior to the beginning of their respective schools, and were returned before the first day of the session. Posttest measures were administered during the last session of the laboratory

were mailed to the subjects three weeks prior to the beginning of their respective schools, and were returned before the first day of the session. Posttest measures were administered during the last session of the laboratory and at the end of the sales seminar. The eight week follow-up instruments were mailed to the subjects to be filled out and returned directly to the School of Life Insurance Marketing. Each administration was accompanied by a cover letter consisting of assurances of confidentiality of the self-reports. Each participant was assigned a subject number and names were deleted from the self-report forms to assure confidentiality. A short description and the procedure employed with each instrument is given below.

Shostrum's Personal Orientation Dimensions (POD) was the major self-report instrument used (Shostrum, 1975). The POD is both an extension and refinement of the widely used Personal Orientation Inventory (POI). Similar to the POI, the POD is designed to measure the level of individual actualizing according to personality concepts held by Maslow, Reisman, Perls, Rogers, and others. The test consists of 260, two-choice items yielding 13 scales organized into four conceptual areas. The four conceptual areas and scales comprising each one are as follows: (1) Orientation (Time Orientation, Core Centeredness); (2) Polarities (Strength, Weakness, Anger, Love); (3) Integration (Synergistic Integration, Potentiation); (4) Awareness (Being Trust in Humanity, Creative Living, Mission, Manipulation

Awareness). Each scale measures an aspect of personal growth and, therefore, makes it quite appropriate for evaluating increased human effectiveness following a laboratory learning session. A description of each scale can be found in Appendix B.

The validation of the POD is based on several techniques previously used with the POI. Shostrom (1975) tested the effectiveness of the POD in the discrimination between "individuals who have been observed in their life behavior to have attained a relatively high level of actualizing from those who have not evidenced such development." Subjects were nominated by mental health professionals to be actualizing or nonactualizing. Mean differences between these samples reached significance ($P=.01$) for all scales except the Mission scale which reached significance at the .05 level. Using hospitalized psychiatric patients and nominated self-actualizers, Rofsky (1975) significantly differentiated the samples on all scales of the POD except the Mission scale at the .001 confidence level.

Another form of validity is reported in the POD test manual. The POD was correlated to the scales of Eysenck Personality Questionnaire (EPQ). Correlations for POD scales and the EPQ Neuroticism scale were, in general, negative; reaching significance at the .01 confidence level for nine of the 13 scales. Similar correlations were found between the POD scales and the EPQ Psychoticism

scale with five of the negative correlations reaching the .01 level of confidence. These findings lend evidence of concurrent validity of the POD.

The POD manual lists reliability coefficients based on test-retest administrations. However, all coefficients are based on a retest following an intervening experience designed to promote personal growth. Therefore, to the extent such experience might be expected to affect the scale scores, the coefficients should be considered the lower bound reliability estimates. Bonk (1974) administered the POD to a group of 49 teachers and counselors in a training workshop experience. Reliability coefficients ranged from .55 to .72. The test-retest interval was approximately 3 months. The manual also describes test-retest reliability coefficients for a three day interval reported by Walker (1975). Coefficients ranged from .53 to .79.

The second outcome measure utilized in this study was in Interpersonal Relationship Rating Scale (IRRS). The IRRS (Hipple, 1972) was developed specifically to meet the special needs or research concerned with the evaluation of personal growth experiences. The scale is a self-administered paper and pencil test consisting of twenty-four, seven-point numerical scales. The specific scales were constructed to be (a) related to attitudes and/or behaviors in the individual's relationship with others, (b) concerned with observable behaviors as much as possible, and (c) composed of such behaviors and/or attitudes presumably

affected by participation in personal growth laboratories. The IRRS also allows other observers to evaluate the participant's interpersonal relationship attitudes and behaviors. The IRRS can be found in Appendix D.

The reliability of the IRRS was studied by Hipple (1972) by means of a test-retest after a one-week interval and a six-week interval, using comparison group members of a laboratory learning evaluation study. After the one-week interval, the 24 coefficients averaged to a .59 index with a range of .14 to .70. The stability of the IRRS was also studied by computing Spearman rank-order correlations between average profiles. For the control group a test-retest after one week reached a coefficient of .83, while after the six-week interval the coefficient was .85. Identified "significant other" raters had a coefficient of .82 for the six-week interval. These estimates are reported by Hipple to indicate a high degree of stability for mean profiles for both self-report and reports of observers.

In this study, the IRRS was utilized in two measurement procedures. First, each subject rated himself on the 24 items three times: before, immediately after, and eight weeks following the school he attended.

Second, each participant in the research nominated three persons in his social network to rate him on the IRRS once before he attended his respective school, and again eight weeks following the school.

It was suggested to the subjects that the three back-home raters be "significant others" in their daily lives. Significant others were defined as one person from the participant's personal life (wife, roommate, close friend), and two persons from his business life (peers in agency, associates, etc.) with whom he typically interacted several times a week. The pre-measures were distributed to the back-home raters by the participants, but were mailed directly back to SLIM. Follow-up measures were sent directly to the raters with instructions to fill out the rating form without consulting the participant they were rating. Evaluations made by the significant others were returned to SLIM to assure the confidentiality of the ratings.

Process Measurement

Process measures were used to assess changes which occurred during the laboratory proper. Two types of reports were taken: self reports and co-participant ratings. Four measures were administered after each major group session, including two measures of self-disclosure, a measure of interpersonal feedback, and a group satisfaction measure. In addition, the Laboratory Experience Questionnaire and an overall perceived change index were completed at the final session of the laboratory. The specific times of administration for each measure during the laboratory can be found in Appendix D. Each measure is described below.

Self-Disclosure. The process of self-disclosure was

measured by two different instruments in order to explore the relationship between them. The first measure was adapted from an encounter group exercise from Pfeiffer and Jones (1970) and used in a similar fashion by McCardel and Murray (1974) as a process measure of self-disclosure. Each participant was asked to rate all the members of his group including himself on four seven-point scales of hostility, warmth, attentiveness, and annoyance. The degree of self-disclosure was measured by the discrepancy between his self-rating and the average rating given to him by the group. The lower the summed discrepancy score the greater the degree of self-disclosure. The basic assumption of the scale is that the greater the amount of self-disclosure, the more information the group has about the individual and, therefore, the more accurate the rating of the group will match that of the individual's self-rating.

Self-Disclosure and Interpersonal Feedback. A second instrument yielded indices of both the amount of self-disclosure and the amount of interpersonal feedback. This measure utilized the conceptual model of the Johari Window (Luft, 1963). The Johari Window of communication suggests four classifications of interpersonal exchange which are: (a) things that are known to the individual and known to others, called the Arena or area of free and open communication; (b) things that are known to the individual and not known to others, called the Facade; (c) things that are not known to the individual but known to others, called

the Blind Spot, and (d) things not known to the individual and not known to others, called the Unknown. The process of sharing information about oneself from the Facade into the area of open communication is defined as self-disclosure. The process of reducing the Blind Spot is accomplished through interpersonal feedback from others, thereby moving information that was previously not in the person's awareness into the Arena.

The second instrument, therefore, consisted of two scales that were ratings of the degree to which participants engaged in the processes of self-disclosure and interpersonal feedback. The subjects were instructed to rate each group member including himself on a scale of 0 to 9 on two items. The first was labelled "sharing" (self-disclosure), or the degree to which the person was perceived as being open. A score of "0" would indicate that the member was perceived as having shared none of himself (a very high facade); a "9" would indicate a totally open (no facade) person. The second item was labelled "self-awareness", or the degree to which the person was perceived as being aware of how he is coming across to others. A score of "0" on this scale would indicate a person totally unaware of his blind spots, and "9" one who was totally aware of how he was coming across.

Group Satisfaction Scale (GSS). The GSS consisted of four, seven-point scales intended to measure important evaluative aspects of the group experience. The items were

derived and modified from a scale previously used for the evaluation of group psychotherapy (Barger, 1959). The four items were (a) the degree of satisfaction with the session, (b) the perceived amount of group cohesion, (c) felt value as a group member, and (d) the amount of responsibility the person felt for what went on in the group session. An examination of previously collected data indicated that the four scales were highly correlated, ranging from .55 to .90. Therefore, in the present study, the four scale scores were combined to yield a single GSS score for each session.

Perceived Change Index. The perceived change index was administered once at the final session of the laboratory. The change index consisted of each participant's rating himself and all other participants in the laboratory on a 100 point scale of global interpersonal effectiveness. A low rating indicated a low level of general effectiveness. A high rating indicated high degree of general effectiveness.

Participants were asked to rate each person twice during the last session of the laboratory; first, as they perceived them at the beginning of the laboratory, and second, as they now perceived them at the conclusion of the laboratory. The net difference between the first and second rating yielded a measure of perceived change on global interpersonal effectiveness. Therefore, the scale resulted in a self-rated change index and a group-rated change index

(based on mean of ratings made by other participants) for each individual.

Laboratory Experience Inventory (LEI). The LEI was a modification of an instrument developed by Lieberman, Yalom, and Miles (1973). The inventory included the four basic scales of Lieberman, et. al., consisting of seven point scaled continua of (a) unpleasant/pleasant; (b) was turned off/turned on; (c) overall, a constructive/destructive experience; and (d) for the amount of time involved, personally learned a great deal/very little. In addition, several items were added to further delineate the characteristics of the individual's experience. The second part of the inventory consisted of general questions in which the participant was asked to describe the value of the experience to him, any changes in himself he felt had taken place, and if he believed the experience would have a lasting impact on his life back home. The LEI was included in the study in hopes of letting the participants evaluate the experience privately without group pressure to "say the right thing." The results of the LEI were of general interest to the author and not intended to be quantified for statistical analysis.

Summary

Subjects were 27 MDRT level life insurance agents who attended either the Human Development Laboratory or a sales-oriented seminar at the School of Life Insurance Marketing. Fourteen of the agents attended the HDL, while 13 partici-

pated in the sales seminar and served as a comparison group. Two measures were used to assess pre/post follow-up changes: (1) the Personal Orientation Dimensions, a measure of personal growth; and (2) the Interpersonal Relationship Rating Scale, an evaluation of the effectiveness of the participants' interpersonal behavior. In addition to the self-ratings on the POD and the IRRS, each participant was rated by three significant others in his back home environment on the IRRS both before and eight weeks following his respective school.

During the laboratory, two measures of self-disclosure, a measure of interpersonal feedback, and a group satisfaction index was administered after each group session. In addition, during the final session of the HDL, participants rated themselves and every group member on a change index scale. Finally, all laboratory subjects completed a Laboratory Experience Questionnaire describing their experience and evaluation of the HDL.

RESULTS

For purposes of clarity, results of this study will be presented in two main categories: Outcome Measures and Process Measures. The level of acceptable significance was set at the .05 level.

Outcome Measures

The three measures of outcome (Personal Orientation Dimensions, Interpersonal Relationship Rating Scale: self rating, and Interpersonal Relationship Rating Scale: significant others rating) were independently analyzed with a multivariate analysis of variance (MANOVA), followed by a univariate analysis of variance for each individual scale of the instruments. The analysis was conducted by the Department of Experimental Statistics at Louisiana State University utilizing the Statistical Analysis System. Results of the analysis of the three outcome measures are described below.

Personal Orientation Dimensions (POD)

The MANOVA on the 13 scales of the POD resulted in a significant main effect for group ($F=10.72$, $df=13/35$, $p .05$), and for time ($F=1.70$, $df=26/68$, $p .05$). That is, responses to the POD were significantly different for the two groups regardless of time of administration, and differed significantly over administrations regardless of group membership. However, the predicted group x time interaction

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failed to reach significance ($F=1.35$, $df=26/68$, $p=.05$) indicating that changes over the three administrations of the POD were not related to group membership.

The univariate analysis of each of the 13 scales failed to yield any significant main effect for group membership. That is, although the MANOVA found a significant group difference on the POD, the effect was not detectable on any one of the individual scales. The univariate analysis did yield a significant main effect for time of test administration for three of the scales: Time Orientation ($F=7.16$, $df=2/47$, $p=.05$), Weakness ($F=6.32$, $df=2/47$, $p=.05$), and Synergistic Integration ($F=4.44$, $df=2/47$, $p=.05$). Inspection of means for these three scales over test administrations revealed that both groups improved from the pre-test to the posttest, with the laboratory group improving the most. On the follow-up test the scores faded, losing a substantial amount of the gain demonstrated on the posttest. The means for laboratory and comparison groups on each of the 13 POD scales appear in Appendix G.

Interpersonal Relationship Rating Scale (IRRS): Self-Rating

The MANOVA on the 24 scales plus composite score of the IRRS - self ratings resulted in a significant group main effect ($F=4.93$, $df=625/522$, $p=.05$), but not a significant main effect for time ($F=1.47$, $df=50/44$, $p=.05$). The interaction between group x time was also significant ($F=1.83$, $df=50/44$, $p=.05$), which indicates that the changes over the three administrations were related to group membership.

The comparison and laboratory group means for the IRRS scales appear in Appendix H.

When the univariate analysis was conducted on each of the 25 scales, a significant main effect for group was not found for any of the scales. That is, the significant group effect found on the MANOVA was not detectable for any single scale of the IRRS. However, the univariate analysis did yield 12 significant ($p=.05$) group x time interactions (11 basic scales plus the composite score). These twelve interactions generally reflect improved interpersonal skills for the laboratory subjects and are illustrated in Figures 1 through 12.

The results of the univariate analysis for these twelve scales appear in Appendix I.

Several features of the graphed interactions stand out. First, the laboratory subjects consistently rated themselves as less effective (lower scores) on the pretest than did the comparison subjects for all 12 of the scales. Second, the laboratory group demonstrated dramatic increases from the pre-to to the posttest measure. Comparison subjects did not demonstrate such an increase, and actually decreased on 5 of the 12 scales. Third, the laboratory group's ratings fade on the eight-week follow-up measure, ending essentially at the same level as comparison subjects at the follow-up administration. Still, on all twelve scales, the laboratory group mean is higher at follow-up than at the pretest indicating some residual gain.

FIGURE 1

LABORATORY AND COMPARISON GROUP MEANS
ACROSS ADMINISTRATIONS FOR IRRS SCALE:
AWARENESS OF THE FEELINGS OF OTHERS

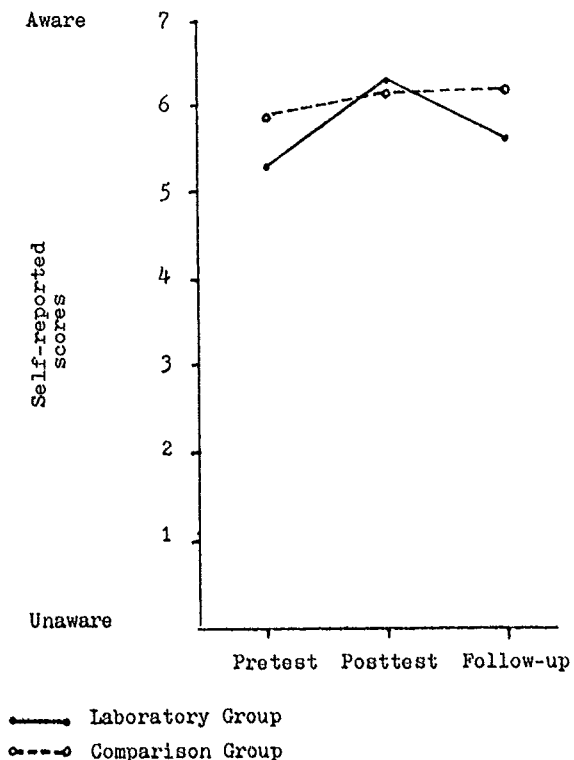


FIGURE 2

LABORATORY AND COMPARISON GROUP MEANS
ACROSS ADMINISTRATIONS FOR IRRS SCALE:
REACTION TO THE OPPOSING OPINIONS
OF OTHERS

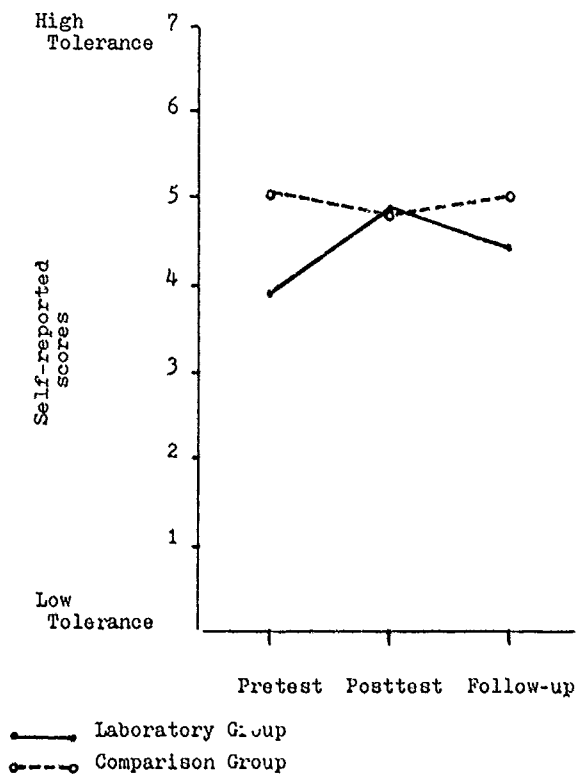


FIGURE 3

LABORATORY AND COMPARISON GROUP MEANS
ACROSS ADMINISTRATIONS FOR IRRS SCALE:
REACTION TO CONFLICT AND ANTAGONISM
FROM OTHERS

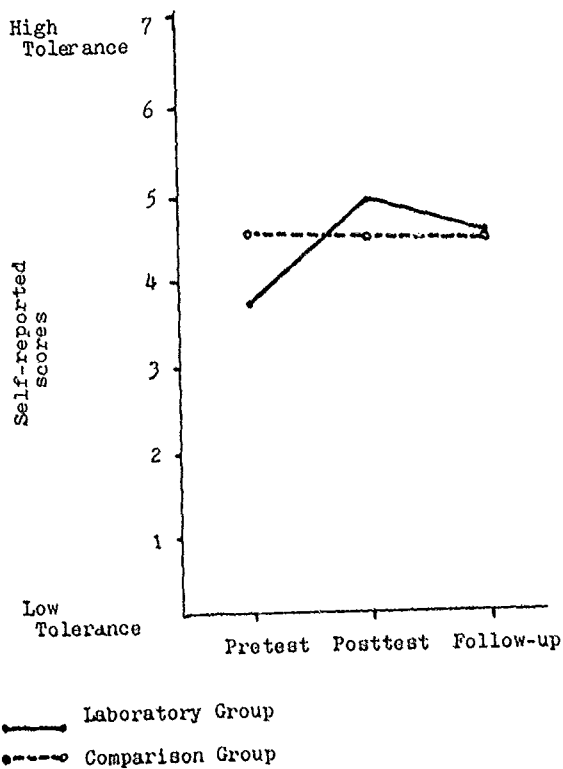


FIGURE 4

LABORATORY AND COMPARISON GROUP MEANS
ACROSS ADMINISTRATIONS FOR IRRS SCALE:
REACTIONS TO OTHERS' COMMENTS
ABOUT HIS BEHAVIOR

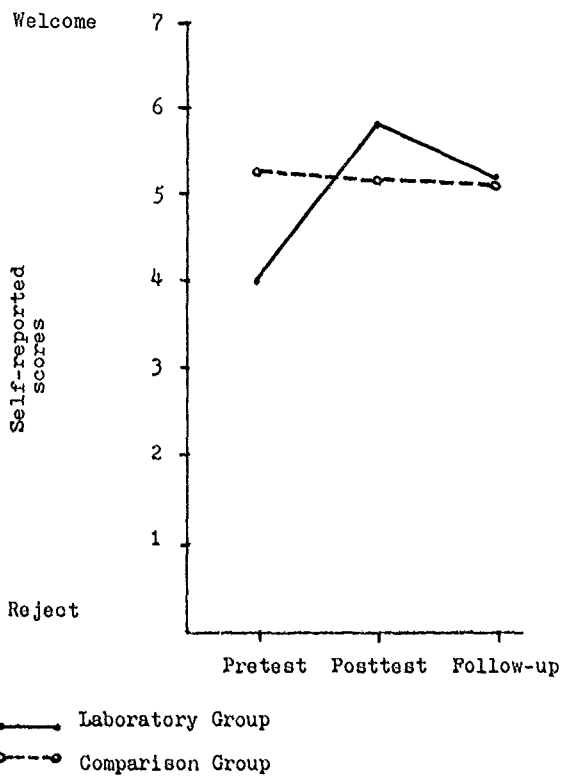


FIGURE 5

LABORATORY AND COMPARISON GROUP MEANS
ACROSS ADMINISTRATIONS FOR IRRS SCALE:
WILLINGNESS TO DISCUSS HIS FEELINGS AND
EMOTIONS WITH OTHERS

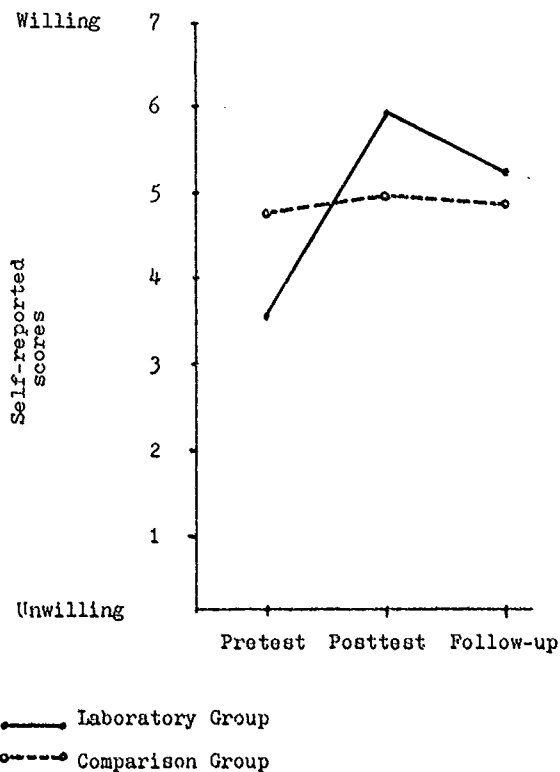


FIGURE 6

LABORATORY AND COMPARISON GROUP MEANS
ACROSS ADMINISTRATIONS FOR IRRS SCALE:
LEVEL OF HIS SELF ESTEEM

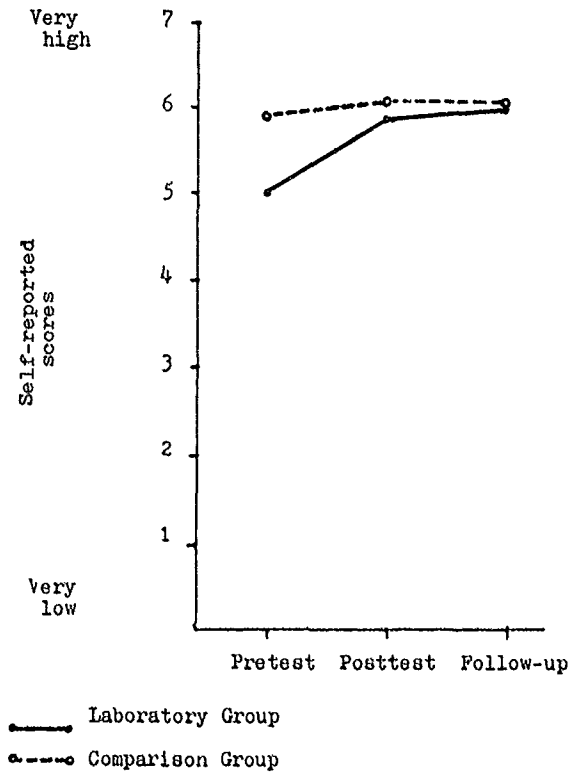


FIGURE 7

LABORATORY AND COMPARISON GROUP MEANS
ACROSS ADMINISTRATIONS FOR IRRS SCALE:
LEVEL OF HIS GIVING LOVE

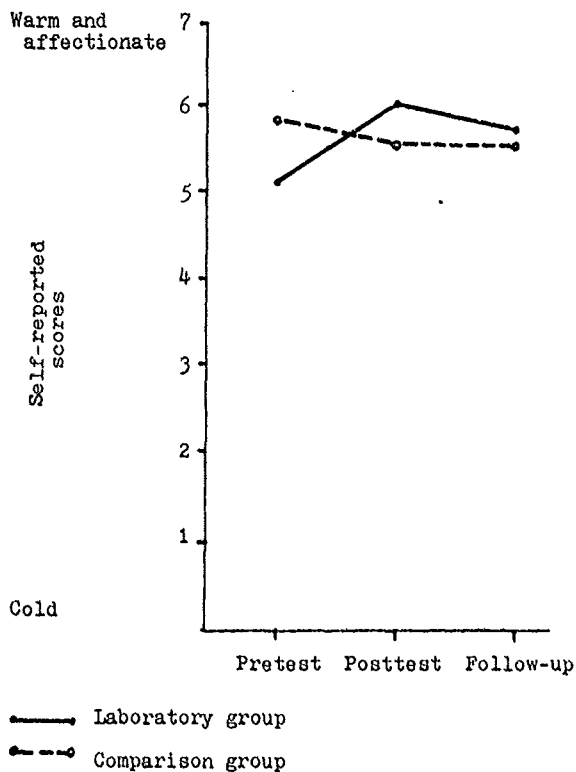


FIGURE 8

LABORATORY AND COMPARISON GROUP MEANS
ACROSS ADMINISTRATIONS FOR IRRS SCALE:
LEVEL OF HIS OPENNESS

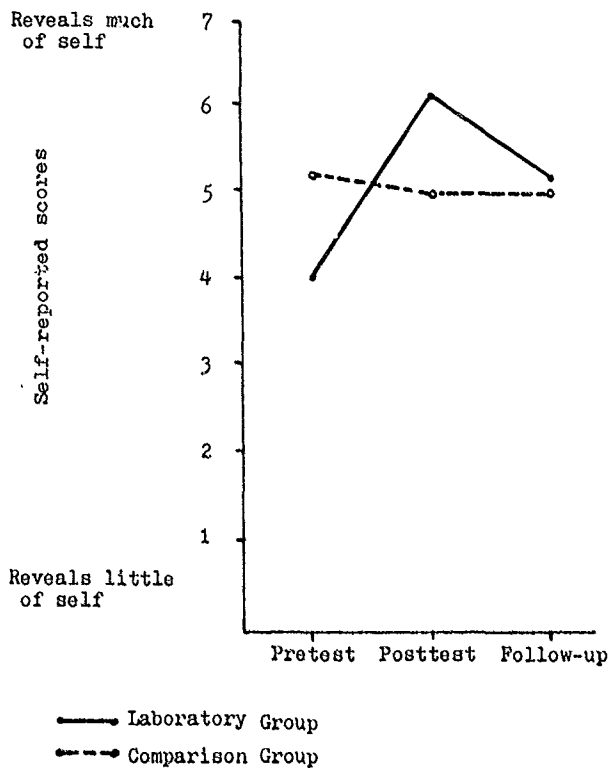


FIGURE 9

LABORATORY AND COMPARISON GROUP MEANS
ACROSS ADMINISTRATIONS FOR IRRS SCALE:
DEGREE OF PEACE OF MIND

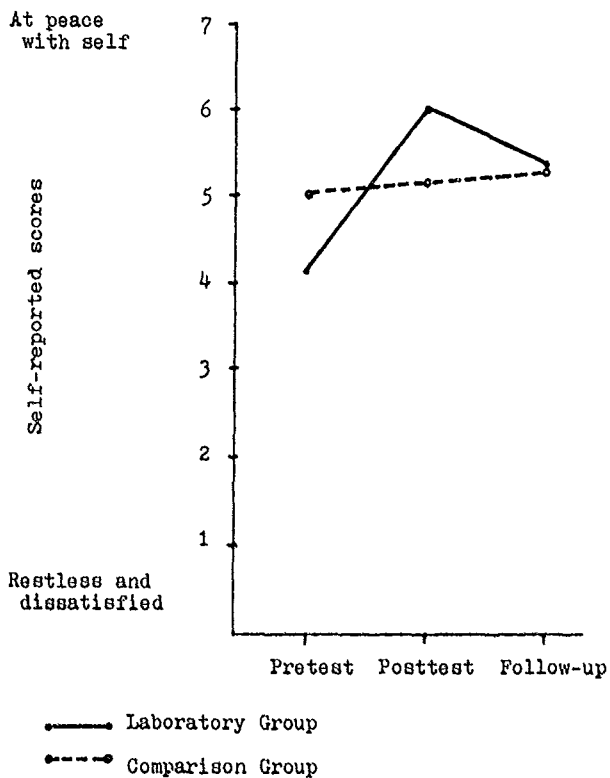


FIGURE 10

LABORATORY AND COMPARISON GROUP MEANS
ACROSS ADMINISTRATIONS FOR IRRS SCALE:
DEGREE OF INNOVATIVENESS

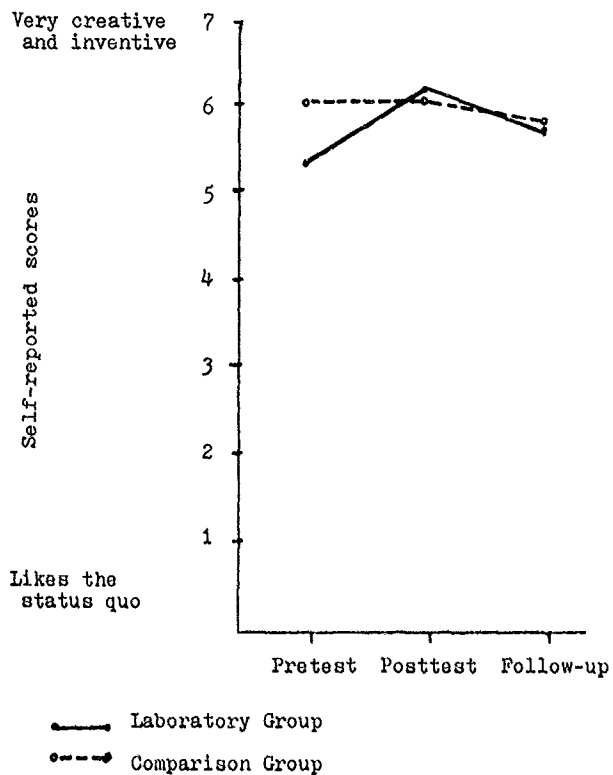


FIGURE 11

LABORATORY AND COMPARISON GROUP MEANS
ACROSS ADMINISTRATIONS FOR IRRS SCALE:
CLARITY IN EXPRESSING THOUGHTS

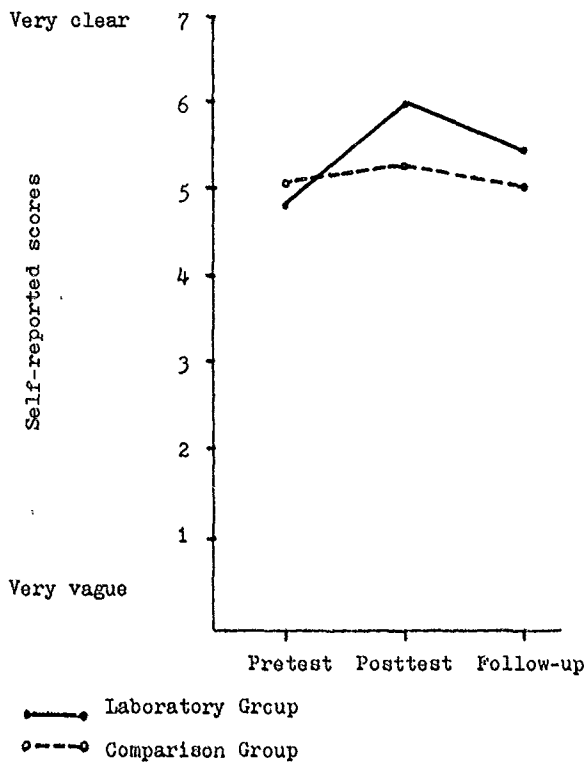
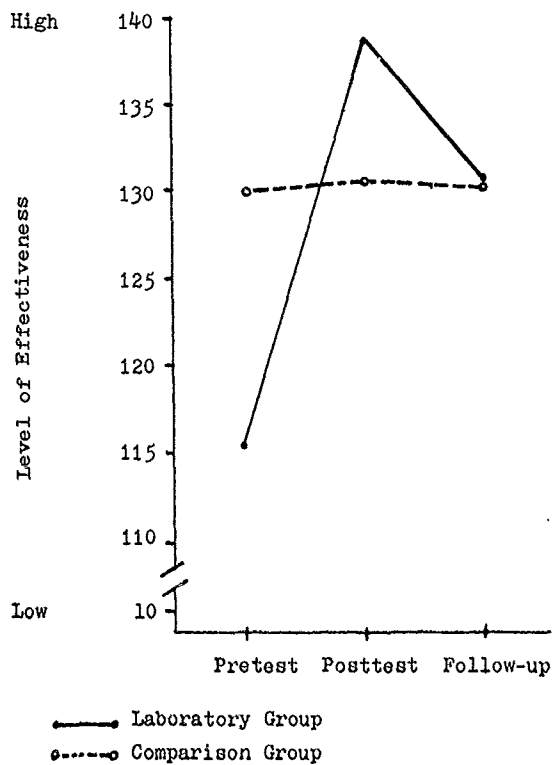


FIGURE 12

LABORATORY AND COMPARISON GROUP MEANS
ACROSS ADMINISTRATIONS FOR IRRS SCALE:
COMPOSITE SCORES



Interpersonal Relationship Rating Scale: Significant Other Ratings

Significant-other ratings were made by three persons in the social network of the subject. Ratings were made during the pretest and the follow-up. The response of the designated raters was exceptional, and all subjects had at least 2 raters complete both pretest and follow-up. Ratings for each subject were averaged to give a mean pretest and follow-up score.

The MANOVA for the ratings of significant others on the IRRS failed to reach significance for the main effects of group and time, or for the group x time interaction. That is, no significant difference was found between the ratings made by back-home raters for laboratory or comparison group members. The mean ratings for laboratory and comparison groups on each scale appear in Appendix I.

Process Measures

Three process variables (self-disclosure, interpersonal feedback, and group satisfaction) were measured after each group session during the laboratory. Two points were of interest: an examination of (a) relationship between two different approaches to the measurement of self-disclosure, and (b) the relationship between each process variable and the outcome of training. The results of both are reported below.

Relationships among Self-Disclosure Measures

The relationship between the measures of self-disclosure (SD) was examined first. One measure of SD consisted of a discrepancy score between a self-description and group-description on four-adjective scales (SD-Indirect). The second measure was a direct rating of the amount of SD by self-report (SD-self) and group perception (SD-group). The product moment correlations were computed for (a) SD-indirect and SD-self, (b) SD-indirect and SD-group, and (c) SD-self and SD-group, for each of the seven sessions respectively. Because of the scoring procedures, negative correlations between the indirect and direct measures were expected. However, inspection of the correlations between the SD-indirect measure and the two SD-direct measures were significant. Three of the seven correlations between the self and group ratings of SD were significant: session #2, session #3 and session #7. The lack of consistent correlations for the measures of SD does not support a conclusion that they are measuring the same set of behaviors or experience.

Relationships of Process Measures and Outcome

In order to examine the relationship of the three process variables and the outcome of training, the score on each of the process measures for the seven small group sessions were correlated with (a) immediate post change, and (b) follow-up change.

TABLE 1

INTERCORRELATIONS FOR DIRECT AND
INDIRECT MEASURES OF SELF-DISCLOSURE
OVER SEVEN GROUP SESSIONS OF LABORATORY

Correlations**	Sessions [†]						
	2	3	4	5	6	7	8
SD-I r SD-S	.02	-.29	.12	.08	-.35	-.43	-.27
SD-I r SD-G	-.17	.08	.07	-.23	.11	.05	.14
SD-S r SD-G	.58*	.60*	.25	.49	.25	.08	.61*

* $p = .05$

[†]SD was not measured in Session 1.

** SD-I: Self-disclosure - Indirect Measure

SD-S: Self-disclosure - Self Rating

SD-G: Self-disclosure - Group Rating

The degree of immediate post change was determined by computing the difference scores between the posttest and pretest for each of the 13 POD scales and the self-report IRRS composite scale. In addition, the self-report Perceived Change Index (PC-S), and the group rated Perceived Change Index (PC-G) administered at the end of the laboratory were used as post change measures.

The degree of follow-up change was determined by computing the difference scores between the follow-up and the pretest for each of the 13 POD scales, the self-report IRRS composite scale (IRRS-self), and the significant-other IRRS composite scale (IRRS-other).

The relationships between each process measure and change scores for post and follow-up are reported below.

Self-disclosure. The product moment correlations between each of the three self-disclosure indices and immediate post change scores for the 13 POD scales resulted in significance at the .05 level for (a) 6 of the 91 correlations for the SD-indirect measure, (b) 7 of the 91 correlations for the SD-self measure, and (c) 4 of the correlations for the SD-group measure. The correlations that reached significance were not found to be consistently associated with any specific session of the laboratory or POD scale. The correlations between the three self-disclosure indices and IRRS-self composite scores, PC-S, and PC-G failed to yield even a single significant finding.

The correlations computed between the self-disclosure measures and follow-up change scores were also unimpressive. The number of significant correlations between the POD scales and self-disclosure indices were comprised of (a) 9 out of 91 for SD-indirect, (b) 3 out of 91 for SD-self, and (c) 0 out of 91 for SD-group. The correlations between the indices of self-disclosure and the composite IRRS-self failed to reach significance, as did those between self-disclosure and IRRS-other.

This study hypothesized that outcome change would be positively related to self-disclosure. The lack of significant correlations between the three self-disclosure measures and change scores on the outcome measures failed to support this hypothesis.

Interpersonal feedback. Product-moment correlations were computed between the two indices of interpersonal feedback and immediate post change. The indices were direct ratings of the amount of feedback by self-report (FB-self) and group perception (FB-group). The correlations between FB-self and the change scores for the 13 POD scales resulted in 6 (out of 91) significant ($p=.05$) relationships, while only 4 of the 91 correlations between FB-group and POD scores reached significance. None of the correlations between the two indices of FB and IRRS-self composite change scores, PC-S, and PC-G were found to be significant.

The correlations between the two indices of feedback

and follow-up change scores resulted in only two significant relationships. The two significant correlations were between FB-self and two POD scales. The correlations between the indices of feedback and IRRS-self composite failed to reach significance, as did those for the IRRS-other composite change scores.

Although this study hypothesized a positive relationship between the amount of interpersonal feedback and change scores, the results fail to support this conclusion. In fact, the number of significant correlations found between the feedback indices and change scores are less than would be expected by chance.

Group Satisfaction. The product-moment correlations for group satisfaction (GS) scores and immediate post changes also resulted in few significant r 's. Of the 91 correlations between the seven GS scores and post changes on the 13 POD scales only 6 proved to be significant ($p=.05$). Again the significant r 's were not consistently associated with any specific POD scale or session of the laboratory. One significant correlation between GS and IRRS-self composite change scores was found out of the seven computed. None of the correlations between GS and PC-G were found. However, six of the seven correlations between GS and PC-S were significant. These correlations appear in Table 2. Except for session one, those participants rating the experience as more satisfying also rated themselves as

TABLE 2
 CORRELATIONS BETWEEN SELF RATINGS OF PERCEIVED CHANGE
 AND REPORTED SATISFACTION FOR EACH GROUP SESSION

	Session						
	1	2	3	4	5	6	7
Perceived Change r	-.77*	.60*	.69*	.73*	.72*	.72*	-.37
Group Satisfaction							

* $p=.05$

changing the most immediately after the laboratory. Session one is the FUG group (See Appendix A) which is typically considered the most unsatisfying group session by participants. Those reporting the most dissatisfaction with the FUG session also rated themselves as changing the most immediately following the laboratory.

The correlations between GS and follow-up POD changes resulted in only one significant correlation of the 91 computed, less than would be expected to change. The correlations between GS and the two IRRS (self and other ratings) composite change scores failed to reach significance.

The exploration of the relationship between reported satisfaction with the small group experiences and outcome resulted in only a few findings. Participants' ratings of group satisfaction were found to be consistently related only to the self-reported amount of change following the laboratory.

DISCUSSION

This study was an attempt to evaluate the effects of a Human Development Laboratory (HDL) on highly successful life insurance agents. Moreover, the study attempted to discover the relationship of three process variables to the amount of change resulting from the experience.

In order to evaluate the outcome of training, participants in the laboratory completed test instruments before, immediately after, and eight weeks following the training session. As in more recent studies, the present project included a comparison group which was given identical tests at the same time intervals, but which attended another type of educational experience. In addition, both laboratory and comparison group members were rated by significant others (family members and business associates) on their interpersonal effectiveness once before, and then again eight weeks following their respective schools.

On the self-report Interpersonal Relationship Rating Scale (IRRS), the laboratory trainees demonstrated greater gains in interpersonal effectiveness than the comparison group immediately after the training experience. However, at the eight-week follow-up administration the gains had faded to the extent that the laboratory and comparison groups were approximately at the same level. On a more objective measure of personal growth, the Personal Orient-

ation Dimensions (POD), the two groups did not significantly differ on the scales of personal effectiveness. In addition, the ratings on the IRRS made by significant others failed to demonstrate a difference between groups after training.

In order to examine the relationship between two change mechanisms and outcome, the degree of self-disclosure and interpersonal feedback were measured during the laboratory sessions. Outcome was not found to be significantly related to either of the change mechanisms. A third process variable measured during the laboratory, group satisfaction, was found to be related to participants' ratings of self-reported change immediately after the HDL.

The more specific aspects of the issues raised by this study are dealt with below, followed by specific recommendations for future research.

Outcome of the Human Development Laboratory

Several aspects of the outcome findings seem to be of special interest. One way to examine the outcome of training is from the perspective of the participants, and a descriptive measure (Laboratory Experience Inventory) was included in this study for that purpose. The impact of the HDL, as described on the Laboratory Experience Inventory (LEI), was quite striking. Immediately after training, all the participants rated the experience as extremely positive (6 or 7, on 7 point scales). That is, they described the experience as pleasant, a "turn-on", constructive, and a

great learning experience. All reported that the experience had changed them in a positive direction and that they had high expectations that the change would be lasting and carry over to their back-home environments. After eight weeks, 10 of the 12 who responded maintained their high ratings of the experience as being positive, the other two lowered their ratings slightly. However, on this follow-up rating half lowered their expectations that the change would carry over into their back-home world (from 6 and 7 ratings to 4 and 5's). Although the ratings indicate that the experience was still perceived as positive eight weeks later, some of the participants appeared to have lost some of their confidence that it would have a major impact on their back-home environment. Still, it must be noted that three of the participants have continued to meet every four months on their own, and two others have attempted to sponsor a HDL for life insurance agents in their own cities.

The reports of positive gain by participants on the IEI following the HDL were also reflected in the self-descriptions on the Interpersonal Relationship Rating Scale. Participants rated themselves on the posttest as gaining effectiveness in interpersonal skills clustering in the areas of showing more openness to the feelings and thoughts of others, even if opposed to their own; increased willingness to express their feelings and emotions with others; greater self-esteem, peace of mind, and innovativeness. However, eight weeks following the HDL, these positive

ratings did fade, although on most scales they still reflected a gain over the level reported before the laboratory. Since the long term effects of laboratory learning are always in question, this apparent gain reflected in the follow-up IRRS was of special interest. Therefore, the pretest and posttest ratings made by laboratory participants on the 12 IRRS scales that had resulted in significant interaction effects were examined further by means of a casual post hoc analysis. A t-Test for related measures on posttest, pretest difference scores resulted in 6 of the 12 being significantly different. That is, laboratory participants rated themselves as more effective on the posttest than on the pretest for these six scales of the IRRS, showing indications of some residual gain from the training. The results of the post hoc analysis can be found in Appendix K.

The dramatic fading of reported change on the IRRS upon the eight-week follow-up appears to be consistent with the lowered expectations of lasting change reported on the follow-up LEI. The fading of positive gains is also consistent with the literature on laboratory change. Smith (1975), for example, found that the fade-out effect more frequently involved groups of strangers with no necessary continuing contact than with acquaintance groups from the same work environment or organization. A model offered by Smith in his review suggests that persistency of effects may depend on (a) the trainee's experiencing success in

achieving some of his important goals in relating to others in the special environment of the laboratory, and (b) the degree to which the training setting resembles aspects of his everyday experience. Those who return to settings very dissimilar to the training setting would be predicted to show greater fade-out than those returning to a more similar setting after training. The fading of change ratings reported by participants in the present study are consistent with those reported by other groups of strangers following training (Back, 1972). It appears that participants return home to find a less than receptive environment and the fading of ratings represents a loss in the transfer of skills to their everyday world.

The dramatic increase in reported effectiveness by lab participants following the training experience was not shown by the comparison group. The mean scores for the three administrations for comparison subjects showed only slight fluctuation. However, in general, laboratory subjects rated themselves on the IRRS as less effective on the pretest, more effective on the posttest after training, and at approximately the same level as comparison subjects at the eight-week follow-up.

At first the finding that the laboratory group rated themselves as less effective on the pretest of the IRRS was puzzling, since they were of the same sex, occupation, level of business success, and about the same age. However, this difference may have resulted from several factors.

First, the two schools may draw from two distinct populations. Those attending the HDL may be less effective in their interpersonal skills than those choosing to attend the business school. Second, it may be that the two groups were not from two distinct populations, but the fact that one has chosen to attend a workshop on interpersonal skills and personal growth sharpens one's critical focus of himself. The participants of the HDL may have been more attuned to their personal lives and relationships and more critical of their present level of personal growth, while comparison subjects may have been attuned to the business aspects of their lives and less critical in their perceptions of themselves. Third, since only 13 of the 30 comparison subjects approached completed the research aspects of the study, it may be that these 13 differed from the other 17 in some way. That is, the 13 completing the research may represent the more effective of the 30 and, therefore, biased the comparison group by cutting off the lower portion of the continuum of self-perceived effectiveness. Inspection of the five pretests of business school participants who did not follow through with the research did show lower scores on the IRRS than the means of the comparison group, lending some support for the latter hypothesis.

The design of the present study does not answer which hypothesis or combination of hypotheses presented above correctly accounts for the group differences on the pre-

test IRRS. The literature contains several studies that have examined the characteristics of volunteer laboratory subjects. Compared to nonvolunteer populations, several investigators have found laboratory volunteers to have a lower sense of well being (Seldman and McBreary, 1975), less self-actualized on the Personal Orientation Inventory (Guinan and Foulds, 1970), and higher on life stress and reported number of psychological symptoms (Lieberman, 1975). Others have found no differences between volunteers and nonvolunteers using similar measures (Cooper, 1972; Gilligan, 1973). It would be of interest to explore this issue in future comparative studies.

A final issue raised by the findings of the self-rated IRRS centered around the possible interactions of pretesting and training. Since the IRRS was used for both a pretest and a posttest measure, pretesting could constitute a treatment in itself by sensitizing the clients to the desired outcome of the training. The design of the present study does not rule out this effect, but two points are of interest. First, it is hard to conceive of the pretest sensitizing the participants to what outcomes are expected any more than the sharing of expectations by the staff at the beginning of the laboratory. Second, if the interaction between pretest and training does exist, it is important to find what proportion of the outcome effect is attributable to this interaction and what is due to the treatment alone. Further, it is important to recognize that laboratory training is not

a single, well-defined treatment, but consists of a multitude of variables (e. g. expectations of change, length of training, theoretical orientation, training exercises, etc.) that may contribute to outcome effects. Each of these variables in addition to pretesting needs to be examined.

The other two outcome measures failed to yield any significant differences between the groups following training: the Personal Orientation Dimension (POD) was not significantly affected, nor was there any evidence of increased effectiveness on the significant-other ratings of the IRRS.

The lack of significant change demonstrated on the POD was surprising since its construction was intended to be sensitive to personal growth changes following laboratory learning. Inspection of the individual scale means for the laboratory participants from pre to posttest shows that all but four of the thirteen scales changed in the predicted direction with three not showing any considerable change and one showing negative change. The group means for the comparison subjects showed only slight fluctuation from pre to posttest with 5 scales changing in the positive direction, 3 staying the same, and 5 showing negative change. Perhaps part of the difficulty of finding significant differences arises from the small sample size of the present study which may hide some meaningful effect resulting from the POD instrument. The only significant differences found on the POD were three scales (Time Orientation, Weak-

ness, and Synergistic Integration) on which both groups improved on the post-measures but on which scores dramatically faded on the follow-up measure. Although the increase on the post measure was greater for laboratory subjects on all three scales, the interaction was not significant.

Although the experience was reported by participants as meaningful and change inducing, the impact of the experience was not readily apparent to those in the participants' social network, at least not on the items of the IRRS. A variety of issues are involved here. First, it may be that the IRRS was too restrictive and did not allow for a wider range of behavior change. Second, since the second ratings were not made until eight weeks after the training, the effects of the laboratory may no longer have been detectable by others. Third, the changes produced by the laboratory may be only internal and not apparent enough to others to produce a change in the pre-existing perceptual set. Finally, it may be that the laboratory produced no changes in behavior at all. In the present case of failure to find detectable changes, one can never be sure whether the training was ineffective or whether the test was not sensitive to the qualities or behaviors changed.

Process: Mechanisms of Change

The results of the present study failed to find support for the importance attributed by most practitioners and participants of laboratory learning to self-disclosure and interpersonal feedback. A relationship between the degree

of self-disclosure or the amount of feedback with training outcome was not found. This was true for both self-perceived and group-perceived changes immediately after the laboratory, and for self-perceived and significant-others' perceived changes eight weeks following the laboratory.

The failure to find a relationship between the process variables and outcome change may have resulted from several factors. The mechanisms of self-disclosure and interpersonal feedback may (a) not be essential or directly related to the change process, (b) be intimately related with certain types of change but not those measured in this study, or (c) not have been accurately measured in this study. It is apparent that the problem of measurement of these two change mechanisms is crucial to a determination of their importance to the change process.

In retrospect, the methodology employed in the present study to measure the change processes has several shortcomings. The amount of interpersonal feedback, for example, was measured by having participants rate themselves and other group members on the degree to which each had received feedback about their behavior. This type of rating, unfortunately, tells us nothing about the type of feedback (negative or positive), how it was delivered (emotional context), or how it was received by the group member. Also it must be borne in mind that the measures do not reflect the actual frequency of the behaviors, but rather represent the participants' experience of the events

involving the process of feedback. The global rating measure utilized in this study may not have tapped the essential aspects of the feedback process.

Identical problems are apparent with the direct measurement of self-disclosure in this study. The ratings made by participants fail to yield data as to the depth or intimacy of the information disclosed, the duration or time spent in the process of self-disclosing, or the emotional tone of the presentation of information. Although a second and indirect measure of self-disclosure was included in this study, it failed to correlate with the direct ratings made by participants for the amount of self-disclosure for any session of the HDL. Further, since the ratings of both change mechanisms included a self-perception and a group-perception score, a higher degree of confidence in the measuring procedure would exist if the two ratings proved to be significantly related. However, they did not.

Indeed, before any conclusion can be drawn about the importance of self-disclosure and interpersonal feedback, it is imperative that a more accurate measuring procedure be developed. Even more basic, however, is a need for a more explicit theory of learning which delineates which facets of each change mechanism is crucial for change to take place.

A third process variable was also explored in this study. The participants' ratings of the degree of satisfaction with each group session and the amount of outcome

change was examined. The single significant relationship found was between the ratings of group satisfaction and the amount of self-perceived change reported immediately after the laboratory. Except for session one, participants who rated the group sessions as more satisfying also rated themselves as changing the most.

That is, those participants who reported satisfying group experiences believed they had changed over the course of the laboratory. For session one, a negative relationship was found. In this session, participants who rated the experience as least satisfying also rated themselves as having changed the most. Session one is the first group session of the laboratory and is designed and typically reported as being frustrating and non-productive from the participants' point of view.

In general, higher ratings of self-perceived change were associated with greater dissatisfaction with the first group session and greater satisfaction with the other six sessions. It may be that the contrast between a negative initial experience with that of a positive final and overall experience resulted in those participants' perceiving themselves as changing a great deal over the course of the laboratory. The fact that self-perceptions of change relate to self-reported satisfaction with the training sessions make logical sense.

Future Directions for Research

A number of general recommendations have been referred

to in the preceding sections. Included have been basic methodological requirements of comparison groups, follow-up procedures, and emphasis on process as well as outcome research. Other recommendations specific to outcome and process research on laboratory learning are dealt with below.

Outcome Research

1. Continued effort needs to be exerted towards the utilization of several perspectives of change. Too frequently the measurement of change is limited to the self-reports of the participants themselves. Although self-reports are important, especially in assessing training effects not visible to observers, the impact of training on everyday interpersonal interactions is lacking. Since most learning laboratories, including the HDL, propose to aid participants in becoming more effective interpersonally, observers' perceptions of back-home behavior is essential. A sensitive reliable measuring instrument to reflect and quantify such ratings is vital.

2. The measurement of the persistency of change and a theory to account for it is needed. Smith's (1975) attempt to formulate a model to predict the persistence of training is a first step, and is researchable. This information is also crucial for designing the training experience so as to maximize the persistency of the effects.

3. The criterion problem is ever existent in outcome research. In the absence of any agreed-upon theory

of what kinds of changes are expected from laboratory learning, two approaches seem to be available.

The first involves the use of a "shotgun" of measures based on a number of different frameworks of positive mental health and personal growth. Hopefully, a range of instruments would be sensitive to the diverse numbers of behaviors that may be expected to change. The findings of this approach to research in conjunction with attempts at theory building may eventually lead to more exact and sensitive measures of change for laboratory learning.

A second approach to the criterion problem would be to utilize an "individualized" set of variables and measures. Each participant would set, or join with the professional staff in setting, specific behavioral objectives for training. One participant may, for example, define his goal as becoming a more assertive person in specific situations, while another may wish to be less assertive in specific situations. Others may be in the training session and decide to change other types of interpersonal behaviors. This approach eliminates the assumption that each and every participant is expected to change in the same direction and on the same researcher-selected criteria measures. This approach of "individualized criteria" has been applied to laboratory learning by Leith and Uhleman (1972), and warrants further development and application.

Process Research

1. The need for continued examination of the change

process is crucial. At present no widely accepted theory of change is available. Specific mechanisms of change such as interpersonal feedback and self-disclosure need to be closely examined in terms of their importance to the change process of laboratory learning. The first step is the development of measurement procedures that accurately assess the various aspects of each mechanism. It appears that the most feasible method of measuring the multiple facets of a change mechanism is for judges to independently evaluate video taped segments of the training sessions. This would not only allow for more objectives and quantitative measurement but would allow multiple judges to assess the qualitative aspects of the change process.

2. The most obvious recommendation concerning research on change mechanisms is that more needs to be attempted. The number of variables and change mechanisms to be researched are considerable and they all entail the same measurement difficulties. However, until some gains are made in specifying what types of experiences are necessary for change, laboratory designs will continue to be based on possibly incorrect and unproductive assumptions.

Finally, the findings of the present study were somewhat disappointing. The past reports from participants have continually testified to the positive effects of the HDL on those who have attended. Although one of the self-report measures reflected this positive gain, the other

more objective measures failed to do so. In addition, significant-other raters did not report any detectable changes following the laboratory. However, the continued interest in the HDL by past participants and the changes in their lives they attribute, at least partly, to the experience of the laboratory experience, offer sufficient grounds for this researcher to try again in an attempt to verify and account for these reported happenings.

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APPENDICES

APPENDIX A

Detailed Summary of each Time Block of Human Development Laboratory

Day 1: Morning. Participants were welcomed and given a brief overview of the laboratory design. After a brief explanation of what a laboratory is, participants were encouraged to surface and share their individual expectations of what they hoped would happen during the laboratory. The staff then shared their own expectations of the laboratory and also responded to those hopes expressed by the trainees. A lecture designed to provide a framework for conceptualizing human behavior filled the rest of the morning session. The lecture focused on the development of personality from the perspective of a habit-based model of learning, and provided a common vocabulary among the participants and staff.

Day 1: Afternoon. The afternoon session began with an hour wrap-up of the morning lecture on human behavior. Participants then took part in the "Mix and Mill" exercise, which is designed to allow subjects to get in touch with their "here and now" experience early in the lab. After the exercise was discussed and the experience examined, another lecture was given. This lecture focused on the principles of human interaction including discussion of the "labeling process", "self-fulfilling prophecy", and "circularity of

behavior." The session ended with the first group session colloquially termed the "foul-up group." This exercise was designed to provide participants an opportunity to examine their individual patterns of behavior under the mild stress of removing the four "props" most people have come to rely on in groups: (1) no agenda, (2) no leader, (3) no rules of order, and (4) exclusion of the "there and then" with emphasis on "here and now" experience. After the exercise was thoroughly discussed, the group adjourned for the evening meal.

Day 1: Evening. The session started with a lecture on the principles of effective communication utilizing the conceptual model of the Johari Window. The lecture emphasized the interpersonal processes of self-disclosure and feedback. Participants were then divided into two small groups of seven for the purpose of practicing their newly learned skills. The groups were formed by the participants' selecting members of the laboratory with whom they were unfamiliar. The session ended with a meeting of both small groups to discuss the proceedings of the first day.

Day 2: Morning. This session began with a short lecturette on the levels of communication (content vs. process) that are inherent in the message that people give and receive. The lecturette emphasized that the most effective communication occurs when the content (verbal, or "what" is said) and the process (nonverbal, or "how" it is said) are con-

gruent. After this input, the participants returned to their respective small groups to continue practicing the skills they had learned the day before, and to use this new dimension of communication in exploring their individual patterns of interacting with the group.

Midway through the morning participants were presented with the problem of selecting three of their small group members to leave their group. This exercise was designed as a way for participants to actually apply skills learned up to this point in the laboratory, in a decision-making process. Those group members who were selected, by consensus, to leave then formed an entirely new group. Following a brief meeting of the then three groups, participants were asked to select two of the laboratory staff members to join their respective group. The groups were allowed to either select their original group leaders, or select an entirely new set of staff members. Afterwards the three groups met separately with their chosen staff members until the noon meal.

Day 2: Afternoon. The entire afternoon session was spent in the three small groups. This group time was designed to allow the groups to develop into high trust, high cohesive work groups in which each individual had sufficient time to extensively examine his typical behavior, perceptions and values in a supportive and low risk environment. The group session was only disturbed by a short lecturette

On Adler's concept of "lifestyle" and the process of change.

Day 2: Evening. The first-half of the evening session was spent in three groups identical to those of the afternoon. The time was used to finish up whatever business was left unfinished from the afternoon session. The second-half of the evening was devoted to allowing the original two small groups to reconvene and to investigate the process through which the decision of who would be chosen to leave the group in the prior morning session, was made.

Day 3: Morning. The morning session was devoted to small groups comprised of a new combination of members. The purpose of the new groups was to expose each participant to as many of the other trainees as possible. An additional purpose is to illustrate that the principles and tools of effective communication work in other groups of people and are not just a function of a "special combination" of individuals.

Day 3: Afternoon. The afternoon began with an hour lecture on the principles of mutual support and consultation with an emphasis on active listening skills and unconditional positive regard. Participants were then divided into triads in order to provide them with an opportunity to discuss areas of personal concern. Each member of the triad was given an hour to discuss his specific concern, with the other two members of the triad serving as his resources. The two resource members were given the helping role and instructed to aid the third member in his attempts to

resolve whatever issue he had chosen to deal with. At the end of the three hours, all participants and staff met to process the entire day's experience as one large group.

Day 3: Evening. The evening session was designed to allow the participants to resolve issues or unfinished business which had developed during the laboratory, but for which time had not allowed resolution. Afterwards, participants were given the chance to discuss and role-play problems concerning their business lives or personal lives, within the framework provided by their newly acquired skills.

Day 4: Morning. The final session was devoted to the problems that might occur in generalizing newly learned skills. Considerable emphasis was placed on the impact of personal behavior change on others. The morning included an attempt to incorporate and unify the theoretical and experiential components of the laboratory. The session also included the administration of the post measures for the research aspects of the school.

APPENDIX B

Time Frame of the Laboratory:
Major Events and Data Collection*

	Wednesday	Thursday	Friday	Saturday
8	Expectations	Content/Process Session 3: GS, SD, FB		Back Home lecture
9			Session 7:	Post measures
10	Lecture	Divide into 3 Gps.	GS,SD,FB	
11				
12	Lunch			
1	Lecture	Session 4:	Lecture	
2	Mix & Mill	GS,SD,FB	TRIADS:	
3	Lecture	Lecture	GS,SD,FB	
4	FUG	Session 5:		
5	Session 1: GS	GS,SD,FB		
6	Dinner			
7	Lecture	Session 6: GS,SD,FB	Loose ends	
8	Session 2: GS,SD,FB			
9				
10				
11	Social Hour			

*Notations for Data Collection
GS = Group Satisfaction Index
SD = Self-Disclosure Measures
FB = Feedback Measure

APPENDIX C

DESCRIPTION OF PERSONAL ORIENTATION

DIMENSIONS SCALES OF SELF-ACTUALIZATION

Orientation

- TO Time Orientation: the capacity to live primarily in the present with full feeling-reactivity rather than blaming one's past or depending on future plans.
- CC Core Centeredness: the tendency to trust one's feelings within as a criterion for behavior, as balanced against looking to "shoulds" or "oughts" from authorities outside oneself; the willingness to trust one's own "inner Supreme Court."

Polarities:

- S Strength: the capacity to experience and express a personal sense of power, security, worth, adequacy, or competence.
- W Weakness: the capacity to experience and express one's humanness, vulnerability, hurt, or helplessness: accepting one's occasional impotence and inadequacy to cope with life.
- A Anger: the capacity to experience and express one's feelings of anger in mild or in more intense ways, as appropriate to the situation or in accordance with one's reactions to a situation.
- I Love: the capacity to experience and express feelings of warmth, tenderness, or affection to different persons in different ways.

Integration:

- SI Synergistic Integration: the understanding that commonly held opposites, or polarities (strength-weakness, anger-love), are not really opposites, but rather are mutually complementary, realization that their power as a whole exceeds their summated power as parts (as the strength of an alloy exceeds the strengths of component metals).

APPENDIX C

(continued)

PO Potentiation: the understanding that no one principle, such as honesty or fairness, can control one's total life as represented by thinking, feelings, or bodily sensations; and further the understanding that the organism's potentials operate more fully as a total gestalt when there is a flexibility in application of values and when all three aspects of being are working harmoniously.

Awareness:

BE Being: an orientation to life that includes the willingness to be or express whatever one feels, thinks, or senses within (such as joy, sorrow, helplessness, or boredom), as opposed to a "doing" orientation, which seeks to impress others by striving and pleasing.

TH Trust in Humanity: the ability to constructively view the nature of humanity as trustworthy and essentially good, as opposed to seeing human nature as essentially evil.

CL Creative Living: the capacity to be effective and innovative and become excited about decisions, judgments, or tasks; the utilization of unique or individual ways of problem solving.

MI Mission: a sense of dedication to a life task or mission; a belief in the importance of developing one's highest potentialities.

MA Manipulation Awareness: the capacity to recognize common manipulative, or controlling patterns in others and also to admit that oneself, as well as others has a tendency to manipulate from time to time.

APPENDIX D

INTERPERSONAL RELATIONSHIP RATING SCALE

Participant _____ Observer _____

Complete this form quickly without thinking too much about each item.

For each of the following items, circle the number that best describes the degree to which the statement fits the participant.

Example:

In this example the rater feels that the participant is average in wealth.

A. Wealth of participant.

Very poor 1 - 2 - 3 - ④ - 5 - 6 - 7 - Very rich

1. Ability to listen to others in an understanding way.

Low 1 - 2 - 3 - 4 - 5 - 6 - 7 - High

2. Awareness of the feelings of others.

Unaware 1 - 2 - 3 - 4 - 5 - 6 - 7 - Aware

3. Tolerance of differences in others.

Low 1 - 2 - 3 - 4 - 5 - 6 - 7 - High

4. Tendency to trust others.

Quite Suspicious 1 - 2 - 3 - 4 - 5 - 6 - 7 - Very Trusting

5. Tendency to seek close personal relationships with others.

Low 1 - 2 - 3 - 4 - 5 - 6 - 7 - High

6. Tendency to build on the previous ideas of others.

Infrequent 1 - 2 - 3 - 4 - 5 - 6 - 7 - Frequent

7. Ability to influence others.

Low 1 - 2 - 3 - 4 - 5 - 6 - 7 - High

8. Reaction to expression of affection and warmth from others.

Low High
Tolerance 1 - 2 - 3 - 4 - 5 - 6 - 7 - Tolerance

9. Reaction to the opposing opinions of others.

Low High
Tolerance 1 - 2 - 3 - 4 - 5 - 6 - 7 - Tolerance

APPENDIX D
(continued)

10. Reaction to conflict and antagonism from others.
 Low Tolerance 1 - 2 - 3 - 4 - 5 - 6 - 7 - High Tolerance
11. Reaction to others' comments about his behavior.
 Reject 1 - 2 - 3 - 4 - 5 - 6 - 7 - Welcome
12. Willingness to discuss his feelings and emotions with others.
 Unwilling 1 - 2 - 3 - 4 - 5 - 6 - 7 - Willing
13. Level of his self-understanding.
 Doesn't know self 1 - 2 - 3 - 4 - 5 - 6 - 7 - Knows self a great deal
14. Level of his self esteem.
 Very low 1 - 2 - 3 - 4 - 5 - 6 - 7 - Very high
15. Level of his giving love.
 Cold 1 - 2 - 3 - 4 - 5 - 6 - 7 - Warm and affectionate
16. Level of his openness.
 Reveals little of self 1 - 2 - 3 - 4 - 5 - 6 - 7 - Reveals much of self
17. Degree of peace of mind.
 Restless and Dissatisfied 1 - 2 - 3 - 4 - 5 - 6 - 7 - At peace with self
18. Level of his aspiration.
 Very low 1 - 2 - 3 - 4 - 5 - 6 - 7 - Very high
19. Level of his physical energy.
 Tires easily 1 - 2 - 3 - 4 - 5 - 6 - 7 - Vital and resilient
20. Degree of versatility.
 Can do only a few things well 1 - 2 - 3 - 4 - 5 - 6 - 7 - Can do many things well
21. Degree of innovativeness.
 Likes the status quo 1 - 2 - 3 - 4 - 5 - 6 - 7 - Very creative and inventive

APPENDIX D

(continued)

22. Level of anger expression.
Represses it Expresses
Consistently 1 - 2 - 3 - 4 - 5 - 6 - 7 -it openly
23. Clarity in expressing thoughts.
Quite vague 1 - 2 - 3 - 4 - 5 - 6 - 7 -Very clear
24. Degree of independence.
Very little 1 - 2 - 3 - 4 - 5 - 6 - 7 -A great deal

APPENDIX F LABORATORY EXPERIENCE INVENTORY

LOOKING BACK ON THE LABORATORY EXPERIENCE, HOW DOES IT LOOK TO YOU NOW?

- 1) Pleasant 1 2 3 4 5 6 7 Unpleasant
- 2) Turned-on 1 2 3 4 5 6 7 Turned-off
- 3) Constructive 1 2 3 4 5 6 7 Destructive
- 4) for the amount of time involved, personally learned
a Great deal 1 2 3 4 5 6 7 Very little

HOW WOULD YOU RATE THE FOLLOWING STATEMENTS IN RELATION TO YOUR PERCEPTION OF THE EXPERIENCE? Use the following scale.....

- Nondescriptive 1 2 3 4 5 6 7 Very descriptive
- 1) Found a new way of looking at the world..... _____
- 2) A feeling that I "missed the boat" somehow or failed to get what was potentially there..... _____
- 3) Improved ability to communicate with others.... _____
- 4) Found a deeper understanding of myself..... _____
- 5) A feeling that the experience was misrepresented as I didn't find what I was led to believe I would. _____
- 6) Found a deeper understanding of others..... _____
- 7) Generally have an increased ability to handle various types of situations..... _____
- 8) A feeling that the experience will have a great impact on my back-home effectiveness with other people..... _____

APPENDIX F

continued

IN YOUR OWN WORDS DESCRIBE WHAT ASPECTS OF THE EXPERIENCE YOU FOUND TO HAVE SIGNIFICANCE FOR YOU (Negative and Positive); WHAT, IF ANY CHANGES YOU FEEL HAVE TAKEN PLACE IN YOU; AND, WHAT TYPE OF IMPACT YOU FEEL THE EXPERIENCE WILL HAVE ON YOUR BACK-HOME ENVIRONMENT.

APPENDIX G

LABORATORY AND COMPARISON GROUP

MEANS FOR PERSONAL ORIENTATION

DIMENSIONS* ON THREE ADMINISTRATIONS

<u>SCALE</u>	<u>LABORATORY GROUP</u>			<u>COMPARISON GROUP</u>		
	<u>PRE</u>	<u>POST</u>	<u>8 WEEKS</u>	<u>PRE</u>	<u>POST</u>	<u>8 WEEKS</u>
1.TO	14.29	16.14	15.27	14.85	15.62	15.77
2.CC	12.08	14.30	13.27	13.86	13.55	14.00
3.S	12.86	13.22	13.64	14.47	14.86	15.16
4.W	13.09	15.93	13.46	13.31	14.68	13.93
5.A	12.23	12.36	10.82	11.85	11.78	12.69
6.L	13.57	16.15	14.73	15.16	15.09	15.63
7.SI	14.08	16.66	14.73	13.47	13.47	13.55
8.PO	9.37	11.58	10.09	7.54	7.78	7.35
9.BE	13.08	15.80	14.55	13.94	13.92	13.62
10.TH	14.30	15.58	15.55	15.85	15.85	16.17
11.CL	14.08	13.65	14.36	15.70	15.86	16.01
12.MI	18.08	17.86	18.65	18.70	18.62	18.62
13.MA	10.44	9.22	9.46	10.16	9.70	9.70
	1	0	0	1	1	1

See Appendix C for scale descriptions

LABORATORY AND COMPARISON GROUP MEANS FOR
SELF-RATED IRRS* ON THREE ADMINISTRATIONS

<u>ITEM</u>	<u>LABORATORY GROUP</u>			<u>COMPARISON GROUP</u>		
	<u>PRE</u>	<u>POST</u>	<u>8 WEEKS</u>	<u>PRE</u>	<u>POST</u>	<u>8 WEEKS</u>
1.	5.43	6.00	5.82	5.85	5.69	5.69
2.	5.29	6.29	5.55	5.92	6.15	6.23
3.	4.14	5.43	4.82	5.38	5.62	5.54
4.	5.00	6.07	5.82	4.92	5.00	4.92
5.	4.29	5.50	4.91	5.00	5.31	5.15
6.	4.86	5.79	5.45	5.00	5.08	5.15
7.	5.50	5.86	5.73	5.69	5.62	5.77
8.	5.07	5.57	5.18	5.92	5.77	5.54
9.	3.93	4.86	4.36	5.08	4.85	5.00
10.	3.71	4.93	4.55	4.62	4.38	4.46
11.	4.00	5.86	5.18	5.31	5.23	5.15
12.	3.86	5.93	5.18	4.69	4.92	4.85
13.	5.00	5.86	5.64	5.77	5.62	5.85
14.	5.00	5.79	5.91	5.92	6.08	6.00
15.	5.21	6.07	5.73	5.92	5.62	5.62
16.	4.00	6.07	5.09	5.15	4.92	4.92
17.	4.14	6.00	5.36	5.00	5.15	5.31
18.	5.93	6.36	6.18	6.16	6.23	6.23
19.	5.50	5.93	5.82	5.69	5.62	5.92

APPENDIX H
(continued)

<u>ITEM</u>	<u>LABORATORY GROUP</u>			<u>COMPARISON GROUP</u>		
	<u>PRE</u>	<u>POST</u>	<u>8 WEEKS</u>	<u>PRE</u>	<u>POST</u>	<u>8 WEEKS</u>
20.	5.71	6.14	5.82	5.77	6.00	6.08
21.	5.29	6.14	5.69	6.08	6.08	5.77
22.	4.21	5.00	4.55	4.69	4.92	5.08
23.	4.79	6.00	5.36	5.08	5.23	5.00
24.	5.79	5.93	5.73	6.23	6.38	6.38
25.	115.86	138.57	131.00	130.00	130.77	130.85

*See Appendix D for scale descriptions

APPENDIX I

LABORATORY AND COMPARISON GROUP
 MEANS FOR SIGNIFICANT-OTHERS' RATINGS
 ON IRRS* FOR TWO ADMINISTRATIONS

<u>ITEM</u>	<u>LABORATORY GROUP</u>		<u>COMPARISON GROUP</u>	
	<u>PRE</u>	<u>8 WEEKS</u>	<u>PRE</u>	<u>8 WEEKS</u>
1.	5.40	5.48	5.69	5.52
2.	5.29	5.21	5.54	5.43
3.	4.88	4.96	5.42	5.92
4.	5.05	5.22	5.68	5.65
5.	4.59	4.66	5.14	4.65
6.	4.73	5.05	4.77	4.95
7.	5.78	5.78	5.76	5.91
8.	5.34	5.46	5.91	5.82
9.	4.42	4.64	5.42	5.03
10.	4.16	4.41	4.96	4.71
11.	4.34	4.49	5.03	4.52
12.	4.54	4.90	5.09	4.75
13.	5.15	5.19	5.59	5.43
14.	5.38	5.55	5.95	5.91
15.	5.26	5.21	5.95	5.65
16.	4.76	5.11	5.02	5.00
17.	4.98	4.78	5.39	5.54
18.	6.11	5.81	6.32	6.25
19.	5.40	5.32	5.90	5.83
20.	5.60	5.64	5.86	5.25

APPENDIX I

(continued)

<u>ITEM</u>	<u>LABORATORY GROUP</u>		<u>COMPARISON GROUP</u>	
	<u>PRE</u>	<u>8 WEEKS</u>	<u>PRE</u>	<u>8 WEEKS</u>
21.	5.44	5.66	5.65	5.58
22.	4.34	4.42	4.47	4.62
23.	5.46	5.34	5.90	5.50
24.	6.01	5.91	6.35	5.95
25.	12.15	12.47	13.27	12.92

See Appendix D for scale descriptions

APPENDIX J
(continued)

Scale #10: Reaction to conflict and antagonism from others

Source	df	Sum of Squares	F-Value
Group (G)	1	.27	1.0
Error (a)	25	106.38	
Time (T)	2	3.30	1.87
G X T	2	7.16	4.05*
Error (b)	47	41.52	
Total	77	158.63	

Scale #11: Reactions to others comments about his behavior

Source	df	Sum of Squares	F-Value
Group (G)	1	1.25	1.0
Error (a)	25	72.72	
Time (T)	2	10.68	5.78
G X T	2	12.86	6.96*
Error (b)	47	43.40	
Total	77	140.91	

Scale #12: Willingness to discuss his feelings and emotions

Source	df	Sum of Squares	F-Value
Group (G)	1	3.19	1.74
Error (a)	25	45.81	
Time (T)	2	4.36	5.93
G X T	2	2.73	3.71*
Error (b)	47	17.30	
Total	77	73.39	

APPENDIX J
(continued)

Scale #10: Reaction to conflict and antagonism from others

Source	df	Sum of Squares	F-Value
Group (G)	1	.27	1.0
Error (a)	25	106.38	
Time (T)	2	3.30	1.87
G X T	2	7.16	4.05*
Error (b)	47	41.52	
Total	77	158.63	

Scale #11: Reactions to others comments about his behavior

Source	df	Sum of Squares	F-Value
Group (G)	1	1.25	1.0
Error (a)	25	72.72	
Time (T)	2	10.68	5.78
G X T	2	12.86	6.96*
Error (b)	47	43.40	
Total	77	140.91	

Scale #12: Willingness to discuss his feelings and emotions

Source	df	Sum of Squares	F-Value
Group (G)	1	3.19	1.74
Error (a)	25	45.81	
Time (T)	2	4.36	5.93
G X T	2	2.73	3.71*
Error (b)	47	17.30	
Total	77	73.39	

APPENDIX J
(continued)

Scale #14: Level of his self-esteem

Source	df	Sum of Squares	F-Value
Group (G)	1	3.19	1.74
Error (a)	25	45.81	
Time (T)	2	4.36	5.93
G X T	2	2.73	3.71*
Error (b)	47	17.30	
Total	77	73.39	

Scale #15: Level of his giving love

Source	df	Sum of Squares	F-Value
Group	1	.04	1.0
Error (a)	25	66.56	
Time (T)	2	1.03	1.35
G X T	2	4.81	6.29*
Error (b)	47	17.98	
Total	77	90.42	

Scale #16: Level of his openness

Source	df	Sum of Squares	F-Value
Group (G)	1	.13	1.0
Error (a)	25	112.34	
Time (T)	2	11.42	14.10
G X T	2	18.12	22.37*
Error (b)	47	19.03	
Total	77	161.04	

APPENDIX J
(continued)

Scale #17: Degree of peace of mind

Source	df	Sum of Squares	F-Value
Group (G)	1	.001	1.0
Error (a)	25	124.36	
Time (T)	2	14.64	6.33
G X T	2	9.79	4.23*
Error (b)	47	54.36	
Total	77	202.87	

Scale #21: Degree of innovativeness

Source	df	Sum of Squares	F-Value
Group (G)	1	2.14	1.53
Error (a)	25	35.11	
Time (T)	2	3.61	6.00
G X T	2	2.50	4.15*
Error (b)	47	14.16	
Total	77	57.52	

Scale #23: Clarity in expressing thoughts

Source	df	Sum of Squares	F-Value
Group (G)	1	1.60	1.0
Error (a)	25	79.65	
Time (T)	2	6.40	6.69
G X T	2	3.88	4.06*
Error (b)	47	22.49	
Total	77	114.02	

APPENDIX J
(continued)Scale #25: Composite score for all 24 items

Source	df	Sum of Squares	F-Value
Group (G)	1	71.72	1.0
Error (a)	25	8170.71	
Time (T)	2	1942.65	14.93
G X T	2	1676.76	12.88*
Error (b)	47	3058.43	
Total	77	14920.27	

APPENDIX K
 POST HOC ANALYSIS OF PRETEST/FOLLOW-UP DIFFERENCES
 FOR LABORATORY PARTICIPANTS ON SELF-RATED IRRS
 SCALES WITH SIGNIFICANT INTERACTIONS

<u>Scale</u>	<u>Pretest \bar{X}</u>	<u>Follow-up \bar{X}</u>	<u>df</u>	<u>t</u>
2	5.29	5.55	11	.32
9	3.93	4.36	11	.77
10	3.71	4.55	11	1.55
11	4.00	5.18	11	3.19*
12	3.86	5.93	11	2.51*
14	5.00	5.91	11	4.28*
15	5.21	5.73	11	1.61
16	4.00	5.09	11	3.13*
17	4.14	5.36	11	2.81*
21	5.29	5.69	11	.80
23	4.79	5.36	11	1.49
25	115.86	131.00	11	3.06*

* $p=.05$