12-1973

A Comparative Analysis of a Patient Trainer versus a Student Trainer as Therapeutic Agents in Occupational Therapy Setting

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A COMPARATIVE ANALYSIS OF A PATIENT TRAINER VERSUS A STUDENT TRAINER AS THERAPEUTIC AGENTS IN OCCUPATIONAL THERAPY SETTING

by

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A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of the
Degree of Master of Arts

Western Michigan University
Kalamazoo, Michigan
December 1973

ACKNOWLEDGEMENTS

The writer wishes to express sincere thanks to her major professor Malcom Robertson, chairman of clinical psychology, for his willing guidance, encouragement, and for the interest shown and helpful suggestions made. I am deeply grateful to Professor Paul Fuller, Director of School Psychology for his continuing interest and concern on this project and also generous assistance providing me financial support during the course of my study at Western Michigan University. The constructive criticism and remarkable suggestions of Professor Wade Hitzing were essential to make this thesis possible.

Elahe Karimi

To
My Parents
and to
Bijan

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INTRODUCTION

The use of work as treatment for the mentally ill has a long history. Nearly 2,000 years ago, the Greek physician Galen declared, "Employment is nature's best physician and is essential to human happiness." (Howarth & McDonald, 1940, p.2). In ancient Egypt, they provided a variety of activities such as musical instruments, sporting goods and mechanical materials in their temples where the mentally ill patients were hospitalized. The Pioneers in Psychiatry, such as Pinel, Tuke, Rush, Kirkbride and Bryant emphasized the importance of work as a treatment for mental patients. Paid work, developed by Dr. Herman Simon, a German physician in 1927, was found to be an even more effective treatment in terms of motivating the patient and developing a sense of self-worth. Shortly after, it became apparent that many chronic patients were amenable to both vocational and social rehabilitation and occupational therapy started its existance as a treatment methodology.

Patients hospitalized for a long period of time often become extremely dependent, insecure and fearful to the degree that some are poorly motivated to leave the hospital. Given all the advantages that mental hospitals provide for the mentally ill, it should not be

ignored that the supportive character of the mental hospitals itself may become a pathogenic influence (Millon 1969). In other words, in many mental hospitals, patients are being encouraged toward a permanent state of personal idleness and physical vegetation. Institutional life as a function of overprotection may foster a growth in what Millon (1969) calls "social invalidism" . Most of the patients in mental hospitals function much below their abilities, and over a long period of hospitalization, the level of their functioning decreases so much that it is nearly impossible to return them to the level of activities they held prior to their hospitalization. A great number of mental patients can not return to the community because they do not meet the qualifications for employment due to lack of skill, motivation and responsibility. This is partly due to the lack of expectations from the patients and partly due to the lack of training facilities in the hospitals.

The growth of occupational therapy (O.T.) has been one of the major steps in preparing patients for the demands made upon them by employment (Journal of Occupational Therapy, 1972, pp. 204-205). The bureau of Health Manpower in "Manpower Resources in Hospitals",

reported that approximately 4,060 occupational therapists were employed in hospitals alone, with a need of an additional 2,270 to meet the demanded number (1966, p. 204). The importance of O.T. within the hospital setting is to provide activities designed for the patient's needs in which he can participate in order to break through the overprotection and the lack of expectations in the hospital setting. Such activities as sewing for women and shoe repairing for men might help the patient to function as an employee. The real cure for an unemployed, released patient is employment. The occupational therapists have designed a variety of programs not only for the mentally ill, but also for the mentally retarded, emotionally disturbed and physically handicapped. As Dr. Cabot believes, there is no one so physically or mentally disabled that he cannot do some kind of activity (Then and Now A.O.T. Association 1967, p.7). The practice of occupational therapy is based on this concept that activities are primary agents for learning and development and essential source of satisfaction (Journal of Occupational Therapy 1972). With this in mind, a great number of the mental hospitals now provide occupational therapy centers in which an essential part of patients

treatment takes place.

WHY NON-PROFESSIONALS?

It is now evident that professional manpower in the treatment of the mentally ill cannot meet the needs of the population with the present techniques. The present methods are primarily one to one therapy, and there is no reasonable hope that much manpower, can be sufficiently provided to meet the society's need in the future (Guerney, 1972). Different kinds of group therapy, such as family therapy, was the first step taken by the professionals to help more people with a wider range of problems in less time. However, these methods still were not satisfactory and soon the use of "non-professionals" as therapists became the most inexpensive, practical and available way of therapy.

The "natural significance" of some non-professionals, such as parents, patients, teachers and peers seem to provide therapeutic effectiveness beyond what is usually achieved by professionals with regard to time, money saved and convenience of setting. To quote Dr. Bernard Geurney (1972, p. 5): "These groups, by virtue of their natural role in their environment, have an emotional significance for the child which a

professional person could hope to duplicate only after months or years of intensive effort."

In terms of therapeutic economics, one can say that individual therapy is only available to those from middle and/or upper socio-economical background. Traditional therapies, which are time-consuming and costly, are being replaced by less expensive methods. However, probably nothing is more effective than replacing the professional time by trained non-professionals who can carry out the therapy under professional supervision. Parents, for example, with professional help and understanding the principles of the therapy can often deal effectively with the child's specific misbehavior.

The idea of training non-professionals as therapists gained increasing support from professional therapists as they realized that the patient often did not generalize their learning from the therapeutic settings to the outside world. The patients under therapy were improving, yet the therapeutic changes were sometimes limited to the hospital environment. Therefore, the need for therapeutic sessions in the patient's home, school or community mental health centers were clearly recognized by both professionals and the families of the patients.

The use of "significant others" and especially "naturally significant others" as agents for psychological rehabilitation of patients deserves extensive research, but in the long run it might be one of the most practical methods.

Below, a limited sample of the studies employing non-professionals (i.e. parents, teachers, peers, etc.) as therapeutic agents is presented.

In several studies (Harris, 1966; Wahler, Winkel and Petersen 1965; Walder 1966; Herbert and Baer, 1972; Ryback and Staat 1970; Clement, 1970; Tahmisian and McReynolds, 1971; Zeilberger, Samper and Sloane 1968; Hall, Cristler, Cranston and Tucker, 1970; Shah, Ora, and Burgess 1971) it has been shown that parents and particularly mothers can be employed as therapeutic agents quite satisfactory. For instance, Hawkins, Scheweid and Bijou (1966) employed a mother as therapist in her own home to treat her four-year old hyperactive child. This child was extremely hard to manage and was suspected to be either a brain damaged or a retarded child with borderline intelligence. In this study the mother was given cues for carrying out the instructions including a time-out procedure. After sixty sessions of treatment the frequency of "inappropriate" behaviors dropped to

nearly zero. A month later a three-session post treatment check was made and it determined that the improvements of treatment were still in evidence.

Teachers although professionally trained for educational training may not be trained in regard to students maladjustment and psychological problems. A number of studies have been reported in which teachers acted as the behavior modifier (Becker, Madsen, Arnold, and Thomas 1967; Wolf, Risely, Johnson, Harris and Allen, 1967; Zimmerman and Zimmerman, 1962; Hart, Allen, Buell, Harris and Wolf, 1964; Thomas, Becker, and Armstrong, 1968; Harris, Wolf and Baer, 1964). Among these studies, Hall, Cristler, Cranston and Tucker, 1970 reported two cases in which teachers acted as behavior modifiers using multiple baseline design. In one case, a fifth grade teacher concurrently measured the same behavior (tardiness) in three situations: after morning, noon and afternoon recesses. Posting the names of students on a sheet titled "Today's Patriot" was made contingent upon being on time <u>first</u> only at the noon recess, then successively including the morning and afternoon recesses. The teacher reported that tardiness was reduced to near zero. In the second case, a

high school teacher recorded daily French quiz grades of three students who showed a poor performance on these quizzes. She then successively applied the same contingencies, staying after school for individual tutoring for "D" and "F" grades, for each student. At the point where the contingency was applied, "D" and "F" grades were eliminated in all three cases.

There are a number of studies employing peers as therapeutic agents, since in the child's normal life, a great deal of his time is spent with his peers. In the institutions this amount of time increases markedly, since children are almost in continuous contact with each other. Among the researchers in this area, such as Surrat, Ulrich, and Hawkins, 1969; Baily, Timbers, Phillips and Wolf, 1971; Permutler and Durham, 1969; the study by Straughan, Potter and Hamilton, 1970 is significant. Gene, an elective mute, although capable of talking, completely refused to talk in the classroom. The experimenters set a procedure in the classroom with contribution of all other students. They set a box in the class with a light and an electric counter on it. They explained to the class that for a certain

number of times that Gene speaks, the class would have a party and that all the children can help him reach the criterion and have the party as soon as possible. Following the party, M & Ms were used as reinforcers and distributed to the class following each treatment period. The report indicated that talking behavior significantly increased as well as the frequency of peer vocal approaches to Gene. The teacher also reported that Gene's scholastic output as a function of his verbal responsiveness was dramatically improved. He completed two workbooks at a rate of about one workbook in two weeks, while before the treatment he would complete somewhat more than one workbook in a year.

Among studies that employ non-professionals as behavior engineers, the ones in which patients participate as therapists are even more important. This importance is mainly due to mental instability and low level of patient's education. Although the number of studies using patients as therapeutic agents is by no means large, the studies do demonstrate the effectiveness of having patient trainers with a variety of population such as schizophrenics, mentally retarded, emotionally disturbed and psychotic patients in different settings, ranging

from occupational therapy to speech therapy and systematic desensitization techniques.

The principal reasons for employing patients as therapeutic agents are as follows:

1. Most of the mental hospitals lack the trained staff for the purpose of conducting therapy projects on the ward.
2. It benefits both the patient-therapist and other patients involved in the project.
3. It gives an opportunity to higher functioning patients to act at their level of ability, while helping lower-functioning patients.
4. The patient's time is more available than the therapist's or even the attendant's time.
5. Although paying the patients with money or tokens is a necessity, the cost factor is low.
6. With the use of a few well-trained patients, the possibility of running a continuing project on the wards would significantly increase. In this way, not only will the therapeutic activities

> continue after the professionals or student researchers are finished with their projects, but also the patients who are not allowed to leave the wards would greatly benefit from it.

Among the studies done in this area is the study by Ludwig, Marx and Hill (1971) who trained chronic schizophrenic patients with an operant conditioning procedure to act as behavioral therapists for fellow chronic schizophrenics. Twenty-seven patients participated in the study. They were divided in groups of three in which two members of the group served as "guardian therapists" for their more regressed "charge" patients. The therapist worked on a standardized hierarchy of responses ranging from eye contact to complex forms of social behavior. Over the course of time, Ludwig, Marx and Hill found that the "guardian" patients were able to master most of the techniques of the conditioning procedures; some of them were entrusted with more responsibility to take over some of the staff functions, such as keeping time, recording results on data sheets and selecting appropriate reinforcers for their patients. Moreover, almost all "charge" patients showed variable gains as

they moved to higher levels of the hierarchy of responses.

Cockrill, R.K., and Bernal (1968) employed a highly verbal patient (patient-peer) diagnosed as a paranoid schizophrenic to modify the verbal behavior of a withdrawn patient (subject). The subject's verbal communication was markedly low, and for three or four months prior to hospitalization, she refused to talk to anybody and remained silent, with her face hidden in her arms. In this study, the patient-peer and the subject were supposed to talk about a picture for each session and make up stories about it during the acquisition periods. The patient-peer was taught to reinforce the subject's verbalizations by social praise on a scheduled reinforcement program. The verbal behavior of the subject increased almost twice what it had been before the onset of the experiment.

Wilson and McCally (1970) employed higher-function patients as teachers to teach lower-level patients skills such as adding, subtracting, telling time, learning the alphabet and playing cards. This study proved that with a very limited staff supervision time, they could effectively increase the capabilities of their patients.

With regard to increasing the level of the patient's activity, accepting responsibility and increasing the patients contributions to the therapeutic environment, a token economy in the hospital wards has been one of the working methods. According to "Michigan Mental Health Research", in some state hospitals the token economy is functioning with the help of the patients and for the patients. For instance in one ward of Kalamazoo State Hospital with the majority of the patients diagnosed as schizophrenic, the token system has been helpful in treatment of the patients. In this system, patients can earn tokens by participating in different activities such as cleaning the ward, sweeping, etc. These tokens can be exchanged for coffee, cigarettes, ice-cream or using available facilities, such as a ping pong table, chess, etc. The higher-function patients are usually in charge of the duties such as store manager, store clerk, paymasters, etc., and are effectively helping the project.

Employing patients as therapists is not limited to non-retarded population : McKinney and Keele (1963) reported employing educable and trainable retarded adult women to "mother" two severely retarded boys four hours per day. The women were given general instructions of

"mothering" which consisted of increasing physical attention given to the boys by assisting in their routine care, teaching new skills, playing with them and initiating physical contact. After 200 hours of such treatment, the children demonstrated significant improvement in verbal behavior and other activities, when compared to a control group who did not receive any "mothering" during the study. Whalen and Henker (1969) employed retarded trainers to train low-functioning, non-verbal children to attend to vocal and motor imitative techniques with the help of the experimental staff. Each child was measured on a Social Behavior Test (S.B.T.) consisting of the specific training items and generalization items. The study showed that the children who participated in the training group improved significantly on the S.B.T. in comparison to those who were in the control group.

Rowland (1972), in a pilot study on the use of higher-function retardates as language acquisition trainers of lower-function retardates in attendant-supervised training sessions on institutional wards, showed that the trainable or educable retardates can carry out the principles of behavior modification to

train severely retarded children. The purpose of this study was to increase the potential level of activities in retardates at different levels with minimum supervision of attendant staff. The program was also designed to be carried out on hospital wards to facilitate generalization of both the trainer and the child's learning to their typical environment. In this project, at the top of each training unit was an attendant who was taught to use operant techniques in order to train trainable retardates as trainers. Under each attendant, there were at least two trainers who were functioning within the trainable range, had understandable speech, adequate motor-visual coordination and ability to handle the materials (i.e. shoe, hat, ball, etc.). Under each trainer would be two severely retarded children with little or no language, adequate hearing and sight, and enough arm control to manipulate and touch objects. The children in the training program showed significant improvement over the control group.

Because of similarity to the present study, two recent studies in the area of occupational therapy, employing mental patients as therapeutic agents are described below in detail.

Paul MacCormack (1971) employed a patient-therapist to train four other patients to work with leathercraft articles. The experimental setting was quite similar to the present study (i.e. same observational method, same phases, same type of O.T. setting). Dependent variables in this study were: duration of work behavior, appropriate and inappropriate attention. The therapists' task was to train the subjects through the following phases.

1. Using his own way as long as no physical aggression was used.
2. Differential instruction: giving attention contingent upon appropriate work behavior.
3. Immediate Feedback Phase: same as phase 2 with receiving immediate feedback from the experimenter.
4. Reversal Phase: giving attention contingent upon non-working behavior.

The results of MacCormack's study is summarized as below:

1. The patient-therapist was capable of therapeutically changing behavior of other mental patients.
2. The therapist's appropriate attention increased the percent duration of work

behavior on the part of the subjects.

3. There was a slight decrease in subjects duration of work behavior during the immediate feedback phase.
4. It was more effective to give instructions in person to the patient-therapist than through the radio in which the discriminative stimulus (experimenter) was lost.

MacCormack suggests further research on phase 4, immediate feedback phase.

In a more recent study, Bruce Williams (Personal Communication 1973) employed a high functioning patient to supervise four other schizophrenic patients in an O.T. setting. The task in this study was to unscrew two screws from a metal plate and to place the screws in one cup and the plate in the other cup. An interval recording was taken using a cassette tape recorder and the raters (four undergraduate students) using Endura stopwatch recorded the amount of time spent working appropriately number of units each subject completed, frequency and duration of any "repetitious" or "inappropriate" responses during each interval. The experimenter used the same procedure recording the frequency and duration of "appropriate" and "inappropriate"

attention indicated by the behavior of the patient-therapist and the four subjects.

The overall design of the study was as follows:

Phase I - Baseline of subjects work behavior, such as frequency duration of inappropriate behavior.

Phase II- Patient therapist (P.T.) was put in the situation and asked not to interact with subjects, to control for novelty effect.

Phase III-P.T. was asked to "get the patients to work without any physical force." This was a baseline of P.T. behavior before the modification phase.

Phase IV- P.T. removed from the situation. This phase was the same as Phase I.

Phase V - P.T. put back in the situation and asked not to interact with subjects. Same as phase II.

Phase VI- The patient-therapist was instructed to interact with subjects only contingent upon appropriate work behavior.

Phase VII-P.T. was instructed to ignore subjects' appropriate work behavior and attend to non-working behavior or inappropriate behavior.

The results of the study are as follows:

1. The patient-therapist demonstrated that he could carry out the given instructions with few errors, with little training. The therapist effectively modified the inappropriate behavior of the four subjects.
2. The contingent use of "attention" and "social praise" was an effective technique that modified the inappropriate work and non-working behavior of the subjects.
3. Positive social reinforcement may be somewhat "slower" than "escape reinforcement" in getting the desired level of appropriate work behavior.

The purpose of the present study was as follows:

1. To study the advantages and disadvantages of employing a patient-therapist in an O.T. setting in mental hospitals.
2. To measure the effects of verbal praise on appropriate work behavior.
3. To make a comparison between a patient-therapist and a semi-professional (student-therapist) in terms of their performance

working on the same project, given the same instructions.

4. To study the possibility of running a permanent O.T. project on the hospital wards with the help of trained therapists only.

In spite of similar settings and design the present study had the following differences from the two studies reviewed above:

1. A student therapist, along with the patient-therapist, worked on the project in order to study and evaluate the performance of a semi-professional versus a patient diagnosed as psychotic on the same project.
2. The patient therapist came from a different ward than did the patient subjects in order to prevent any positive or negative personal relationship between the therapist and the subjects during the day.
3. A training phase was held before the baseline.
4. Coffee and cigarettes were given before the session regardless of the work behavior, so the effect of verbal praise could be

measured with more confidence in controlling other reinforcers.

METHOD

Subjects:

A. Twenty male adult schizophrenic patients from Kalamazoo State Hospital were chosen for a pretest. This primary selection was in regard to patients age (within the age range of 18 to 30) and length of hospitalization (no longer than 10 years), poor or no history of regular employment (irregularity, lack of motivation or responsibility in work settings, etc.). This selection was done with the help of Behavior Modification and Research Center staff and the attendant staff. The same task was given to all of the patients with demonstration, explanation and direction by the experimenter (E) in addition to written instructions. The task was to lace a piece of leathercraft called "Little Dude Zipper Purse" in a 30 minute session. Two complete products were provided for the patients for further help if needed. Four subjects who showed the least desirable performance on the task were selected as subjects (Ss) for the project. Their performance was evaluated in terms of speed of work (number of holes the lace has

gone through), neatness (untwisted laces, small knot inside the purse, tightness of the lace) and the level of guidance (number of times asked for help) needed in order to handle the task. All subjects were chosen from the same ward.

Subject 1 was a 28 year old patient diagnosed as schizophrenic reaction catatonic type who has been at Kalamazoo State Hospital for 8 years. He had a past history of being an irregular slow,lazy and irresponsible worker.

Subject 2 was a 22 year old patient diagnosed as schizophrenic reaction chronic undifferentiated with no regular employment history. He had been institutionalized for 5½ years at K.S.H.

Subject 3 was a 19 year old patient diagnosed as schizophrenic reaction catatonic with symptoms of autism. This subject had a limited verbal ability and never initiated any conversation with other patients or the staff of the hospital. This patient did not have any history of employment.

Subject 4 was a 19 year old patient diagnosed as schizophrenic reaction undifferentiated type. He was a new patient at the hospital and did not have a history of any employment. He showed the least desirable

performance among the twenty primary subjects. His constant talking never made any sense and practically he did not have any sense of following instructions.

B. The patient therapist (PT) was chosen from another ward. The criterion for choosing him was a good history of accepting responsibility, good speech ability, motor-visual coordination, communication and work experience on and off the ward. The PT had experience in working with leathercraft in the hospital's occupational therapy center. Again, consultation with BMARC staff and attendants played the major role in selecting the patient therapist.

C. Student-therapist (ST) was a psychology student at BMARC taking a course in the hospital as field experience and he was quite familiar with principles of behavior modification techniques.

Experimental Setting:

Two 12' by 14' rooms were used one of which was the observation room equipped with a Panasonic Video Tape Recorder Model NV-8100. This room was used by the experimenter for data recording. The second room was equipped with a 5' by 3' work table with a microphone in the middle of the table, five chairs, and a camera set in a corner at approximately one foot higher than the

work table and positioned so all four subjects, with particular emphasis on their hand movements, could be seen by the experimenter. The task was to lace different articles of leathercraft chosen from the catalog's "Lace-it-Kits" selection. Six similar types of leathercrafts were used, while the basic task, lacing, was the same.

Recording Procedure:

The experimenter recorded all the data on the four subjects. An interval recording was taken, each interval exactly 30 seconds long. A 3 second recording time for recording the duration of appropriate work behavior followed after each interval. A cassette tape recorder was set up so that a buzzer would go on every 30 seconds (observation period), and 3 seconds (recording time) for the entire 33 minute session. The experimenter would start observing a subject for 30 seconds, and record the dependent variables only in regard to this subject and ignore the other 3 subjects. After recording the duration of appropriate work behavior for this subject, the experimenter would observe the second subject and so on. There were 15 intervals for each subject in every session.

Procedure

The morning sessions with the student therapist was held at 9:00 AM for 33 minutes and the second session with the student-therapist was held from 2:00 to 3:00 in the afternoon. Before each session there was a period of 15 minutes for the subjects to have a cup of coffee and a cigarette or candy and juice. The therapists were given the same instructions throughout the study and ran their sessions independently. The patient-therapist received 10 points for conducting each session. These points could be exchanged for privileges, such as going to movies and buying items provided by the experimenter. The student-therapist was exempted from a required research project that he was taking in the hospital for helping on this project. The needed materials for each session were placed upon the work table at the beginning of the session by the experimenter at all times.

The five phases of the study were as follows:

1. TRAINING PHASE: In this phase the therapists were given the following instructions: "Your job is to teach these four people how to lace leathercraft articles the way you think is the best. It is entirely up to

you what to do as long as no physical force is used." All the different types of leathercraft were used in the training session although some were never completed. The therapists were required to make a sample of each type of leathercraft to assure they understood the instructions.

2. BASELINE PHASE: In this phase the therapists were removed from the work setting and the subjects were given the needed materials by the experimenter. She would also give complete instructions for a given article with enough explanation to the subjects and answer questions of any and then leave the subjects for the 33 minute work session. Upon leaving the room the experimenter would say "I would like to know how well you can work on your own with no help at all. Do the best you can and do not ask for help from each other. Please do not leave the room until I get back." Subject 4 was the only subject who kept asking for help from the other subjects. This was extinguished by instructing other subjects

to ignore his questions.

3. MANIPULATION 1: In this phase the therapists were instructed to give verbal praise contingent upon working behavior and/or good performance, ignore non-working behavior and give verbal disapproval for undesirable work behavior on the part of subjects.
4. IMMEDIATE-FEEDBACK PHASE: In this phase, the experimenter reinforced the therapists for giving appropriate social praise, clear explanation, frequent checks on subjects' work, appropriate extinction or disapproval of poor work performance. The experimenter would also make suggestions and/or recommendations in regard to each subject when necessary.
5. REVERSAL: This phase was exactly the same as baseline phase.

Variables Measured:

1. Duration of Appropriate Work Behavior (A.W.B.). Appropriate work behavior is defined as following:
   a. Attending behavior: Subject sitting in his chair with his head down (most likely) concentrating

on the leather, his eyes open looking at the leathercraft article, holding it with one hand and holding the lace with the other hand.

b. The task is to lace an article of leather. In order to complete this task, the subject must go through the following steps:
   1. Make the starting knot from the inside of the article.
   2. Untwist and cut the end of the lace with a pair of scissors in order to allow ease in lacing.
   3. Put the right pieces of leather together according to the design of the article.
   4. Pass the lace through the holes from inside to outside and outside to inside, around the edges.
   5. Make the finishing knot inside the leathercraft and cut off the rest of the lace.

c. Inappropriate Work Behavior (I.W.B.) is defined as any non-working behavior such as staring into space, getting out of seat, holding hands in the lap, looking out through the window or any other behavior which is incompatible with

A.W.B. As soon as the observer noticed that the subject being observed in a given interval was not working he started counting 1000, 2000, 3000 (which is approximately 3 seconds), and after this period the observer must stop the watch. In other words, 3 seconds of non working behavior is considered as A.W.B. This is to prevent error in data recording due to instant unexpected behaviors, such as coughing, looking at the therapist or out through the window and returning to work after one or two seconds.

d. When the subject asked for help from the therapist, or the subject was stopped from working by the therapist, time recording was stopped immediately until the subject began working again. As long as the therapist gave instructions and/or demonstration, the observer stopped timing for that subject. If the subject gave only a comment such as "Don't twist the lace----" while the subject was working, the watch would not be stopped.

e. Any behavior compatible with A.W.B., such as shaking legs, talking to himself, stereotyped body movements, murmuring, etc., while

working, was acceptable. As long as the second or third behavior was not disturbing the A.W.B., the time recording would go on.

f. If there was the case that when the observer started recording on a specific subject, the therapist had started talking to the subject and the observer did not know whether the subject asked for help or the therapist was helping him without having been asked, then the observer only stopped until the therapist's explanation was over. However, if the observer definitely knew what the case was, appropriate recording was done accordingly.

2. Number of holes that the lace has been "appropriately" passed through in each session, since counting the complete product was impossible in only a 30 minute session. The term "appropriate" was defined as: following the right pattern, from inside to outside around the edges (like a loop), with no twist in the lace being reasonably tight around the edges. Errors in any of these cases resulted in disregarding the loops.

3. Number of times the therapist helped the subject without him asking for it. This was the case in which the subject was working, but not following the

instructions or was working with a twisted lace, etc. and the therapist stopped him and gave him the necessary instructions.

4. Number of times the patient asked for help or approval: Asking for help (i.e. I can't do this or is this O.K.?) were both recorded under this number.
5. Number of appropriate verbal praise was defined as verbal praise (i.e. "This is very good_____") given by the therapist contingent upon appropriate work behavior while the subject was working, or contingent upon a good performance. In the first case the therapist could say "good_____. I see you are working hard." Contingent upon A.W.B. In the second case, the therapist could check the item closely by removing the item from the subject and then, contingent upon a good performance (no twist, etc.), give him verbal praise. In this case, although the subject was considered as 'not working' while waiting to get his leathercraft from the therapist, the verbal praise was considered as appropriate.
6. Number of Inappropriate verbal praise: The inappropriate verbal praise was defined as therapist giving verbal praise when the subject was not working.

7. Number of disapprovals or criticism made by the therapist: Criticism of working behavior was defined as any verbal disapproval by the therapist (i.e. "No, this is wrong." "Get to work_____", "You are being lazy now","take this apart_____, you are not following the direction." If the therapist gave only verbal disapproval (i.e. take this twist out), without any demonstration or explanation, the observer recorded as one for number 6. But if along with this verbal disapproval the therapist demonstrated how to improve the error, then the observer counted one for number 6 and one for 3.

RESULTS

Subject 1 - Patient-Therapist

(Insert Figure 1 here)

As can be seen in Figure 1, under the patient-therapist, the percent duration of working behavior (PDWB) for this subject ranged from 87% to 97%, and averaged 92% during the training phase. The second variable, number of loops or number of holes that the lace has been appropriately passed through ranged from 1 to 9 and averaged 5.5. The third variable, number of times the therapist helped the subject without him asking for it (THS) ranged from 0 to 6 and averaged 1.6. The fourth variable, number of times the subject asked for help (SAH) ranged from 2 to 4 and averaged 2.6. Variable 5, number of appropriate social praise given by the therapist (ASP) ranged from 0 to 3 and averaged 1.6. The sixth variable, number of inappropriate social praise (ISP) ranged from 0 to 1, and averaged 0.16. Variable 7, number of disapprovals by the therapist (DBT) ranged from 0 to 3 and averaged 1.8 during the training phase.

During the baseline, the (PDWB) ranged from 83% to 100% and averaged 92.7%, an increase of 7% from training phase to baseline. Number of loops ranged from 0 to 12 and averaged 4.0, a decrease of 1.5 from

training phase to baseline. Due to the absence of the therapists in this phase, variables 3 to 7 were not applicable in this part of the study.

In manipulation 1, the PDWB ranged from 50% to 100% and averaged 96.3%, number of loops ranged from 10 to 32 and averaged 18, an increase of 14 from baseline to manipulation 1. Variable 3, (THS) ranged from 0 to 3 and averaged 1.1. The fourth variable (SAH), ranged from 0 to 3 and averaged 2, Variable 5 (ASP) ranged from 2 to 6, and averaged 4.1, an increase of 2.6 from baseline to manipulation 7. Variable 6 (ISP) ranged from 0 to 1 and averaged 0.1. Variable 7, (DBT) ranged from 0 to 1 and averaged 0.3 during this phase.

In Immediate Feedback (I.F.) phase, the (PDWB) ranged from 89% to 100% and averaged 93.7%. Number of loops ranged from 10 to 55 and averaged 23.2, an increase of 5.2 from manipulation 1 to I.F. phase. Variable 3 (THS) ranged from 0 to 4 and averaged 1.6. (SAH), the fourth variable ranged from 0 to 4 and averaged 1.5. Variable 5, (ASP) ranged from 2 to 7 and averaged 4.6. Variable 6, (ISP) ranged from 0 to 1 and averaged 0.12. Variable 7, (DBT) ranged from 0 to 2 and averaged 0.4 during this phase.

In reversal phase, the (PDWB) ranged from 94% to 100% and averaged 98.0%. Number of loops ranged from 0 to 20 and averaged 10, a decrease of 13.2 from

immediate feedback phase to reversal phase.

Subject 1 - Student-Therapist

(Insert Figure 2 here)

As can be seen in Figure 2, under Student-therapist, the (PDWB) ranged from 82% to 96%, and averaged 89.6% during the training phase. Number of loops ranged from 1 to 8 and averaged 3.8 in this phase, variable 3,(THS)ranged from 0 to 5 and averaged 2.1. Variable 4 (SAH) ranged from 2 to 4 and averaged 1.3. Variable 5, (ASP) ranged from 0 to 3 and averaged 1.5. Variable 6, (ISP) ranged from 0 to 1 and averaged 0.16. Variable 7, (DBT) ranged from 0 to 3 and averaged 1.6 during the training phase.

Baseline was the same as the results in Figure 1.

During manipulation 1, the (PDWB) ranged from 92% to 100% and averaged 96.4%. While number of loops ranged from 5 to 16 and averaged 11.0 for this phase. Variable 3 ranged from 0 to 3 and averaged 1.5. Variable 4 ranged from 0 to 1 and averaged 0.5. Variable 5 ranged from 0 to 3 and averaged 1.3. Variables ranged from 0 to 1 and averaged 0.1 during this phase.

In immediate feedback phase, the (PDWB) ranged from 92% to 100% and averaged 97.3%. Number of loops ranged from 12 to 50 and averaged 33.6, an increase of

22.6 from manipulation 1 to I.F. phase. Variable 3 ranged from 0 to 1 and averaged 0.6. Variable 4 ranged from 0 to 2 and averaged 0.3. Variable 5, ranged 3 to 6 and averaged 6.7. Variable 6 ranged from 0 to 0 and averaged 0. Variable 7, (DBT) ranged from 0 to 1 and averaged 0.25 during this phase. Reversal phase was the same as the results in Figure 1.

Subject 2 - Patient-Therapist

(Insert Figure 3 here)

As can be seen in Figure 3, under the patient-therapist, the (PDWB) ranged from 82% to 98% and averaged 90.1% during the training phase. Number of loops ranged from 2 to 15 and averaged 7.6. Variable 3 ranged from 0 to 3 and averaged 1.16. While variable 4 ranged from 2 to 8 and averaged 3.6. Variable 5 ranged from 1 to 4 and averaged 2.1 during this phase.

In baseline phase, the (PDWB) ranged from 90% to 100% and averaged 95.1%. Number of loops ranged from 1 to 18 and averaged 6.6, a decrease of 1 during this phase. Variables 3 to 7 were not applicable in this phase.

During manipulation 1, the (PDWB) ranged from 90% to 100% and averaged 97%. While the number of loops ranged from 14 to 41 and averaged 26.7, an increase

of 20.1 from baseline to manipulation 1. Variable 3 ranged from 0 to 3 and averaged 1, and variable 4 ranged from 0 to 4 and averaged 1.5. Variable 5 ranged from 0 to 5 and averaged 2.7, and variable 6 ranged from 0 to 1 and averaged 0.1. Variable 7 ranged from 0 to 1 and averaged 0.3 during this phase.

In immediate feedback (I.F.) phase, the percent (PDWB) ranged from 82% to 100% and averaged 97.6%, and the number of loops ranged from 24 to 56 and averaged 39.5, an increase of 12.8 from manipulation 1 to I.F. phase. Variable 3 ranged from 0 to 1 and averaged 0.5, and variable 4 ranged from 0 to 4 and averaged 2.4. Variable 5 ranged from 2 to 6 and averaged 4.1 and variable 6 ranged to 0 to 0 and averaged 0. Variable 6 ranged 6 ranged from 0 to 1 and averaged 0.25 during this phase.

In reversal phase, the (PDWB) ranged from 96% to 100% and averaged 96.5% and the number of loops ranged from 11 to 45 and averaged 19, a decrease of 20.5 on the average from immediate feedback phase to reversal the rest of the variables were not applicable.

Subject 2 - Student Therapist

(Insert Figure 4 here)

As can be seen in Figure 4, Under the Student-

Therapist the (PDWB) ranged from 90% to 100% and averaged 95.3 during the training phase for this subject. The number of loops ranged from 2 to 8 and averaged 6 in this phase. Variable 3 ranged from 0 to 3 and averaged 1.31 and variable 4 ranged from 2 to 8 and averaged 3.6. Variable 5 ranged from 0 to 4 and averaged 2.1. Variable 6 ranged from 0 to 1 and averaged 0.16 and Variable 7 ranged from 0 to 4 and averaged 2.1 in this phase.

Baseline phase was the same as the results in Figure 3.

During manipulation 1, the (PDWB) ranged from 92% to 100% and averaged 95.5%. The number of loops ranged from 13 to 35 and averaged 20.6 an increase of 14 on the average from baseline to manipulation 1. Variable 3 ranged from 0 to 4 and averaged 1.2, and variable 4 ranged from 0 to 4 and averaged 1.0 in this phase. Variable 5 (ASP) ranged from 0 to 5 and averaged 2.0, and variable 6 (ISP) ranged from 0 to 1 and averaged 0.01. Variable 7 (DBT) ranged from 0 to 2 and averaged 0.3 in this phase.

During immediate feedback phase, the (PDWB) ranged from 82% to 100% and averaged 97.6%. The number of loops ranged from 21 to 55 and averaged 39, an increase of 5 from manipulation 1 to immediate feedback

phase. Variable 3 (THS) ranged from 0 to 3 and averaged 0.75. Variable 4 (SAH) ranged from 0 to 1 and averaged 0.25. Variable 5 ranged from 0 to 5 and averaged 3.1 and variable 6 ranged 0 and averaged 0. Variable 7 ranged from 0 to 2 and averaged 0.5 in this phase.

Reversal phase was the same as the results in Figure 3.

Subject 3 - Patient-Therapist

(Insert Figure 5 here)

As can be seen in Figure 5. Under the patient-therapist, the (PDWB) ranged from 82% to 96% and averaged 88%. The number of loops ranged from 3 to 10 and averaged 6.3 during the training phase. Variable 3 ranged from 0 to 2 and averaged 0.5, and variable 4 ranged from 3 to 6 and averaged 4.6. Variable 5 (ASP) ranged from 2 to 4 and averaged 2.6 and variable 6 (ISP) raised from 0 to 1 and averaged 0.16. Variable 7 ranged from 0 to 6 and averaged 3.3 during this phase of the study.

During baseline phase, the (PDWB) ranged from 80% to 90% and averaged 97.3%, and the number of loops ranged from 0 to 2 and averaged 0.3, a decrease of 6 loops on the average from training phase to baseline.

Other variables were not applicable.

In manipulation 1, the (PDWB) ranged from 76% to 100% and averaged 92.8% and the number of loops ranged from 11 to 39 and averaged 22.7, an increase of 22.4 loops on the average from baseline to manipulation 1. Variable 3, (THS) ranged from 0 to 3 and averaged 1.0, and variable 4 ranged from 0 to 8 and averaged 2.5. Variable 5 (ASP) ranged from 0 to 8 and averaged 3.1, and variable 6 ranged from 0 to 0 and averaged 0. Variable 7 (DBT) ranged from 0 to 3 and averaged 1.3 during this phase.

In immediate feedback phase, the PDWB ranged from 94 to 100% and averaged 98.3% and the number of loops ranged from 28 to 50 and averaged 38.8, an increase of 16.1 loops on the average from manipulation 1 to I.F. phase. Variable 3 ranged from 0 to 2 and averaged 0.5, variable 4 ranged from 0 to 4 and averaged 2.37, variable 5 ranged from 2 to 6 and averaged 3.75, variable 6 ranged 0 to 0 and averaged 0, so as variable 7.

The other variables were not applicable.

In reversal phase the (PDWB) ranged from 98% to 100% and averaged 99.7% and the number of loops ranged from 6 to 16 and averaged 10 a decrease of 28.8 loops on the average from I.F. phase to reversal.

Subject 3 - Student-Therapist

(Insert Figure 6 here)

As can be seen in Figure 6, under the student therapist, the (PDWB) ranged from 72% to 84% and averaged 97.6%. The number of loops ranged from 1 to 7 and averaged 4 during the training phase. Variable 3 ranged from 0 to 1 and averaged 0.16, variable 4 ranged from 3 to 7 and averaged 5.0 in this phase. Variable 5 (ASP) ranged from 0 to 5 and averaged 1.8, variable 6 ranged from 0 to 1 and averaged 0.16 and variable 7 (DBT) ranged from 0 to 5 and averaged 0.83 during the training phase.

Baseline was the same as the results in Figure 5.

In manipulation 1, the PDWB ranged from 96% to 100% and averaged 96.8%. The number of loops ranged from 2 to 25 and averaged 16.8, an increase of 14.5 loops on the average from baseline to manipulation 1. Variable 3 ranged from 0 to 2 and averaged 0.66, variable 4 ranged from 0 to 3 and averaged 1.1, variable 5 (ASP) ranged from 0 to 2 and averaged 1.1, variable 6 ranged from 0 to 1 and averaged 0.1 and variable 7 ranged from 0 to 2 and averaged 0.5 during this phase.

During immediate feedback, the (PDWB) ranged from 96% to 100% and averaged 97.2% and the number of

the loops ranged from 25 to 60 and averaged 35.5, an increase of 20.7 loops on the average from manipulation 1 to I.F. phase. Variable 3 ranged from 0 to 2 and averaged 0.6, variable 4 ranged from 0 to 2 and averaged 0.75, variable 5 (ASP) ranged from 0 to 6 and averaged 3.0, variable 6 ranged 0 to 0 and averaged 0, so as variable 7.

Reversal phase was the same as the results in Figure 5.

Subject 4 - Patient-Therapist

(Insert Figure 7 here)

As can be seen in Figure 7, the (PDWB) ranged from 36% to 48% and averaged 42.5% during the training phase. The number of loops ranged from 1 to 2 and averaged 1.3 in this phase. Variable 3 ranged from 1 to 10 and averaged 8.5, Variable 4 ranged from 6 to 10 and averaged 8, variable 5 ranged from 0 to 7 and averaged 3.1, variable 6 ranged from 0 to 1 and averaged 0.5, and variable 7 ranged from 4 to 7 and averaged 5.6 during the training phase.

During the baseline phase, the (PDWB) ranged from 46% to 82% and averaged 66.7%. The number of loops ranged from 0 to 0 and averaged 0 in this phase. As can be seen in Figure 7 and Figure 8, this subject

showed an extraordinary number for asking help from the therapists. This subject was the only one who kept asking for help from other subjects. This number ranged from 0 to 15 and averaged 4.42 during the baseline. Other variables were not applicable.

In manipulation 1, the (PDWB) ranged from 36% to 56% and averaged 47%. The number of loops ranged from 1 to 4 and averaged 2.7. An increase of 2.7 loops on the average in this phase. Variable 3 ranged from 5 to 12 and averaged 8.1, variable 4 ranged from 1 to 6 and averaged 4.2. Variable 5 ranged from 2 to 4 and averaged 3.2. Variable 6 ranged 0 to 0 and averaged 0, and variable 7 ranged from 2 to 6 and averaged 3.7 in this phase.

In immediate feedback phase, the (PDWB) ranged from 66% to 82% and averaged 78.6 and the number of loops ranged from 3 to 14 and averaged 6.3, an increase of 3.6 loops on the average from manipulation 1 to I.F. phase. Variable 3 ranged from 3 to 9 and averaged 6.1, Variable 4 ranged from 1 to 7 and averaged 3.25, Variable 5 ranged from 2 to 8 and averaged 5.1, Variable 6 ranged from 0 to 0 and averaged 0, and Variable 7 ranged from 1 to 4 and averaged 0.25 in this phase.

In reversal phase, the (PDWB) ranged from 82% to 98% and averaged 93.4% and the number of loops ranged

from 1 to 3 and averaged 1.1 a decrease of 5.2 loops on the average from I.F. phase to reversal.

Subject 4 - Student Therapist

(Insert Figure 8 here)

As can be seen in Figure 8, under the student-therapist, the (PDWB) ranged from 66% to 62% and averaged 52.6%. The number of loops ranged from 0 to 2 and averaged 1.3. Variable 3 ranged from 5 to 13 and averaged 8.3, Variable 4 ranged from 1 to 7 and averaged 6.8, Variable 5 ranged from 1 to 6 and averaged 2.8, Variable 6 ranged from 0 to 1 and averaged 0.16 and Variable 7 ranged from 5 to 9 and averaged 7.0 during the training phase.

Baseline was the same as the results in Figure 7.

In manipulation 1, the (PDWB) ranged from 74% to 96% and averaged 82.5%. The number of loops ranged from 0 to 2 and averaged 1.5, an increase of 1.5 from baseline to manipulation 1. Variable 3 ranged from 0 to 4 and averaged 1.0, Variable 4 ranged from 5 to 12 and averaged 7.8, Variable 5 ranged from 0 to 3 and averaged 1.2, Variable 6 ranged from 0 to 0 and averaged 0, and Variable 7 ranged from 1 to 4 and averaged 3.0 during this phase.

During immediate feedback phase, the (PDWB) ranged from 74% to 86% and averaged 79.2%. The number of loops ranged from 1 to 12 and averaged 5.0, an increase of 13 loops on the average from manipulation 1 to I.F. phase. Variable 3 ranged from 7 to 13 and averaged 10.8, Variable 4, ranged from 0 to 4 and averaged 2.25; Variable 5 ranged from 2 to 9 and averaged 4.5; Variable 6 ranged from 0 to 0 and averaged 0 and Variable 7 ranged from 0 to 10 and averaged 3.75 during this phase.

Reversal phase was the same as the results in Figure 7. The results of the study have been summarized in the tables of range and mean of the measured variables.

PHASE	THERAPISTS		VARIABLE 1 PERCENT DURATION OF WORK BEHAVIOR	VARIABLE 2 NUMBER OF LOOPS	VARIABLE 3 THERAPIST HELPED THE SUBJECT	VARIABLE 4 SUBJECT ASKED FOR HELP	VARIABLE 5 NUMBER OF APPROPRIATE SOCIAL PRAISE	VARIABLE 6 NO. OF INAPPRO-PRIATE SOCIAL PRAISE	VARIABLE 7 DISAPPRO-VALS BY THE THERA-PIST
TRAINING	PATIENT-THERAPIST	RANGE	87%-97%	1-9	0-6	0-3	0-3	0-1	0-3
		MEAN	92%	5.5	2.6	1.6	1.6	1.6	.16
	STUDENT-THERAPIST	RANGE	83%-100%	1-8	0-5	0-3	0-3	0-1	0-3
		MEAN	84.6 %	3.8	1.5	2.1	1.5	.16	1.6
BASELINE	NO THERAPIST	RANGE	83%-100%	0-12	----	----	----	----	----
		MEAN	92.7%	4.0	----	----	----	----	----
MANIPULATION 1	PATIENT-THERAPIST	RANGE	90%-100%	10-32	0-3	0-3	2-6	0-1	0-1
		MEAN	96.3%	18	2.0	1.2	4.1	.10	.30
	STUDENT-THERAPIST	RANGE	92%-100%	5-16	0-1	0-3	0-3	0-1	0-1
		MEAN	96.4%	11.0	.50	1.5	1.3	.10	.20
IMMEDIATE FEEDBACK	PATIENT-THERAPIST	RANGE	89%-100%	10-55	0-4	0-4	2-7	0-1	0-2
		MEAN	93.7%	27.75	1.6	1.5	4.6	.12	.40
	STUDENT-THERAPIST	RANGE	92%-100%	12-50	0-1	0-2	3-6	0-0	0-1
		MEAN	97.3%	32.7	.30	.60	4.62	.0000	.25
REVERSAL	NO THERAPIST	RANGE	94%-100%	0-20	----	----	----	----	----
		MEAN	98.0%	10	----	----	----	----	----

TABLE OF MEANS AND RANGE

SUBJECT 1

PHASE	THERAPISTS		VARIABLE 1 PERCENT DURATION OF WORK BEHAVIOR	VARIABLE 2 NUMBER OF LOOPS	VARIABLE 3 THERAPIST HELPED THE SUBJECT	VARIABLE 4 SUBJECT ASKED FOR HELP	VARIABLE 5 NUMBER OF APPROPRIATE SOCIAL PRAISE	VARIABLE 6 NO. OF INAPPRO-PRIATE SOCIAL PRAISE	VARIABLE 7 DISAPPRO-VALS BY THE THERA-PIST
TRAINING	PATIENT-THERAPIST	RANGE	82-98%	2-15	2-8	0-3	1-4	0-1	0-4
		MEAN	90%	7.6	3.6	1.16	2.1	.16	2.1
	STUDENT-THERAPIST	RANGE	90%-100%	2-12	2-5	0-3	0-4	0-1	0-4
		MEAN	95.3%	6	3.3	1.3	2.3	.16	1-6
BASELINE	NO THERAPIST	RANGE	90%-100%	1-18	-	-	-	-	-
		MEAN	95%	6.64	-	-	-	-	-
MANIPULATION 1	PATIENT-THERAPIST	RANGE	90%-100%	14-41	0-4	0-3	0-5	0-1	0-1
		MEAN	97%	26.7	1.5	1.0	2.7	.1	.3
	STUDENT-THERAPIST	RANGE	92%-100%	13-35	0-4	0-4	0-5	0-1	0-2
		MEAN	95.5%	20.6	1.0	1.2	2.0	.01	.3
IMMEDIATE FEEDBACK	PATIENT-THERAPIST	RANGE	82%-100%	24-56	0-4	0-1	2-6	0-0	0-1
		MEAN	97.0%	34.5	2.4	.5	4.1	0.0	.25
	STUDENT-THERAPIST	RANGE	82%-100%	21-55	0-1	0-3	0-5	0-0	0-2
		MEAN	97.6%	39	.25	.75	3.1	0.0	.5
REVERSAL	NO THERAPIST	RANGE	94%-100%	11-45	-	-	-	-	-
		MEAN	96.5%	19	-	-	-	-	-

TABLE OF MEANS AND RANGE

SUBJECT 2

PHASE	THERAPISTS		VARIABLE 1 PERCENT DURATION OF WORK BEHAVIOR	VARIABLE 2 NUMBER OF LOOPS	VARIABLE 3 THERAPIST HELPED THE SUBJECT	VARIABLE 4 SUBJECT ASKED FOR HELP	VARIABLE 5 NUMBER OF APPROPRIATE SOCIAL PRAISE	VARIABLE 6 NO. OF INAPPRO-PRIATE SOCIAL PRAISE	VARIABLE 7 DISAPPRO-VALS BY THE THER-APIST
TRAINING	PATIENT-THERAPIST	RANGE	82%-96%	3-10	3-6	0-2	2-4	0-1	0-6
		MEAN	88%	6.3	4.6	.5	2.6	.16	3.3
	STUDENT-THERAPIST	RANGE		1-7	3-7	0-1	2-5	0-1	0-5
		MEAN		4	5.0	.16	1.8	.16	.83
BASELINE	NO THERAPIST	RANGE	80%-96%	0-2	-	-	-	-	-
		MEAN	97.3%	.3	-	-	-	-	-
MANIPULATION 1	PATIENT-THERAPIST	RANGE	76%-100%	11-39	0-8	0-3	0-8	0-0	0-3
		MEAN	92.8%	22.7	2.5	1.0	3.1	0	1.3
	STUDENT-THERAPIST	RANGE	94%-100%	2-25	0-3	0-2	0-2	0-1	0-2
		MEAN	96.8%	14-8	1.1	.66	1.1	.1	.5
IMMEDIATE FEEDBACK	PATIENT-THERAPIST	RANGE	94%-100%	28-50	0-4	0-2	2-6	0-0	0-0
		MEAN	98.3%	38.8	2.37	.5	3.75	0	0
	STUDENT-THERAPIST	RANGE	94%-100%	25-60	0-2	0-2	0-6	0-0	0-0
		MEAN	97.2%	35.5	.75	.6	3.0	0	0
REVERSAL	THERAPIST	RANGE	98%-100%	6-16	-	-	-	-	-
		MEAN	99.7%	10.1	-	-	-	-	-

TABLE OF MEANS AND RANGE
SUBJECT 3

PHASE	THERAPISTS		VARIABLE 1 PERCENT DURATION OF WORK BEHAVIOR	VARIABLE 2 NUMBER OF LOOPS	VARIABLE 3 THERAPIST HELPED THE SUBJECT	VARIABLE 4 SUBJECT ASKED FOR HELP	VARIABLE 5 NUMBER OF APPROPRIATE SOCIAL PRAISE	VARIABLE 6 NO. OF INAPPRO-PRIATE SOCIAL PRAISE	VARIABLE 7 DISAPPRO-VALS BY THE THERA-PIST
TRAINING	PATIENT-THERAPIST	RANGE	36-48%	1-2	6-10	1-10	0-7	0-1	4-7
		MEAN	44.2%	1.3	8.0	8.5	3.1	.5	5.6
	STUDENT-THERAPIST	RANGE	44%-62%	0-2	1-7	5-13	1-6	0-1	5.9
		MEAN	52.6%	1.3	4.8	8.3	2.8	.16	7
BASELINE	NO THERAPIST	RANGE	46%-82%	0-0	-	0-15	-	-	-
		MEAN	66.7%	0	-	4.42	-	-	-
MANIPULATION 1	PATIENT-THERAPIST	RANGE	36%-56%	1-4	1-6	5-12	2-4	0-0	2-6
		MEAN	47%	2.7	4.2	8.1	3.2	0	3.4
	STUDENT-THERAPIST	RANGE	79%-94%	0-2	0-4	5-12	0-3	0-0	1-4
		MEAN	82.5%	1.5	1.0	7.8	1.2	0	3.0
IMMEDIATE FEEDBACK	PATIENT-THERAPIST	RANGE	66%-92%	3-14	1-7	3-9	2-8	0-0	1-4
		MEAN	78.6%	6.3	3.25	3.1	5.1	0	2.5
	STUDENT-THERAPIST	RANGE	74%-84%	1-12	0-4	7-13	2-9	0-0	0-10
		MEAN	79.2%	5.0	2.25	10.8	4.5	0	3.75
REVERSAL	NO THERAPIST	RANGE	82%-98%	1-3	-	-	-	-	-
		MEAN	93.4%	1.1	-	-	-	-	-

TABLE OF MEANS AND RANGE

SUBJECT 4

PHASE	THERAPISTS	VARIABLE 1 PERCENT DURATION OF WORK BEHAVIOR	VARIABLE 2 NUMBER OF LOOPS	VARIABLE 3 THERAPIST HELPED THE SUBJECT	VARIABLE 4 SUBJECT ASKED FOR HELP	VARIABLE 5 NUMBER OF APPROPRIATE SOCIAL PRAISE	VARIABLE 6 NUMBER OF INAPPRO-PRIATE SOCIAL PRAISE	VARIABLE 7 DISAPPROV-ALS BY THE THERAPISTS
TRAINING	PATIENT-THERAPIST	78%	5.17	4.7	2.8	2.3	.24	3.55
	STUDENT-THERAPIST	79.2	3.77	3.6	2.9	2.1	.16	2.4
BASELINE	PATIENT-THERAPIST	88.9	2.7	-	-	-	-	-
	STUDENT-THERAPIST			-	-	-	-	-
MANIPULATION I	PATIENT-THERAPIST	83.2	17.2	2.5	2.8	3.2	.05	1.3
	STUDENT-THERAPIST	90.8	11.9	08	2.7	1.4	.05	1
IMMEDIATE FEEDBACK	PATIENT-THERAPIST	92.05	27.5	24	2.1	4.3	.025	.7
	STUDENT-THERAPIST	92.8	28.0	08	2.1	3.8	0.00	1.3
REVERSE	PATIENT-THERAPIST	96.9	10.0	-	-	-	-	-
	STUDENT-THERAPIST			-	-	-	-	-

TABLE OF GROUP MEANS

RELIABILITY

There were at least two reliability checks in each phase of the study, one in patient-therapist session and one in student-therapist sessions. The reliability checks in morning sessions were done by BMARC staff. For the afternoon sessions, a psychology student familiar with data recording was available throughout the study. The reliability checkers were required to know the definition of each variable. This was assured by a test and a session of cross checking recording with the experimenter prior to actual reliability sessions. The independence between the experimenter and the second observer was assured by placing a stack of books between the observers. For recording the duration of working behavior, two silent stop watches were used so timing could not be heard by either observers.

The overall reliabilities ranged from 33% to 100%. The best reliabilities (100% reliability scores in all cases for all subjects) were on variable 2, number of loops and variable 6, inappropriate social praise. These perfect reliability scores were mainly due to the simple clear definition of variable 2 and rare occurrence of variable 6. The second best variable in regard to reliability scores was variable 1, percent

duration of work behavior, ranging from 82% to 100%. The least desirable reliability scores were on subject 4 because of his constant talking, unclear speech and his very slow hand movement which made it hard to tell whether he was working or not. The poor reliability scores were mainly on variables 3, 4 and 5 and it was mainly because of difficulty in counting the frequency of the variable when either the therapist or the subject was continually talking in a given interval. Another important factor was the rare occurrence of some of the variables in a given session which easily lowered the reliability scores.

The overall reliability scores were quite satisfactory, which was an indication of well defined variables as well as having reliability checkers familiar with the setting and data recording. The checkers were required to know the definition of each variable which was assured by having a test. Moreover, each one of the checkers had one session of cross checking recording with the experimenter prior to actual reliability session to assure checkers' understanding of each variable. See the reliability tables.

PHASE		VARIABLE 1 PERCENT DURATION OF WORK BEHAVIOR		VARIABLE 2 NUMBER OF LOOPS		VARIABLE 3 THERAPIST HELPED THE SUBJECT		VARIABLE 4 SUBJECT ASKED FOR HELP		VARIABLE 5 NUMBER OF APPROPRIATE SOCIAL PRAISE		VARIABLE 6 NUMBER OF INAPPRO-PRIATE SOCIAL PRAISE		VARIABLE 7 DISAPPROVALS BY THE THERAPIST	
		*PTS	**STS	PTS	STS	PTS	STS	PTS	STS	PTS	STS	PTS	STS	PTS	STS
TRAINING	EXPERIMENTER	86%	94%	6	4	6	2	2	1	0	0	0	0	2	0
	RELIABILITY CHECKER	84%	96%	6	4	7	3	2	1	0	0	0	0	3	0
	RELIABILITY	97%	97%	100%	100%	85%	66%	100%	100%	100%	100%	100%	100%	66%	100%
BASELINE	EXPERIMENTER	88%	88%	2	2	-	-	-	-	-	-	-	-	-	-
	RELIABILITY CHECKER	93%	94%	2	2	-	-	-	-	-	-	-	-	-	-
	RELIABILITY	94%	93%	100%	100%	-	-	-	-	-	-	-	-	-	-
MANIPULATION I	EXPERIMENTER	100%	100%	20	16	0	1	0	0	4	2	0	0	0	0
	RELIABILITY CHECKER	100%	100%	20	16	0	2	0	0	5	3	0	0	0	0
	RELIABILITY	100%	100%	100%	100%	100%	50%	100%	100%	80%	66%	100%	100%	100%	100%
IMMEDIATE FEEDBACK	EXPERIMENTER	100%	96%	55	39	0	0	0	0	2	4	0	0	0	0
	RELIABILITY CHECKER	100%	92%	55	39	0	0	0	1	2	5	0	0	0	0
	RELIABILITY	100%	95%	100%	100%	100%	100%	100%	50%	100%	80%	100%	100%	100%	100%
REVERSAL	EXPERIMENTER	100%	98%	20	12	-	-	-	-	-	-	-	-	-	-
	RELIABILITY CHECKER	100%	100%	20	12	-	-	-	-	-	-	-	-	-	-
	RELIABILITY	100%	98%	100%	100%	-	-	-	-	-	-	-	-	-	-

*PTS = Patient Therapist Session
STS = Student Therapist Session

RELIABILITY TABLE # 1

SUBJECT 1

PHASE		VARIABLE 1 PERCENT DURATION OF WORK BEHAVIOR		VARIABLE 2 NUMBER OF LOOPS		VARIABLE 3 THERAPIST HELPED THE SUBJECT		VARIABLE 4 SUBJECT ASKED FOR HELP		VARIABLE 5 NUMBER OF APPROPRIATE SOCIAL PRAISE		VARIABLE 6 NUMBER OF INAPPRO-PRIATE SOCIAL PRAISE		VARIABLE 7 DISAPPRO-VALS BY THE THERAPIST	
		*PTS	**STS	PTS	STS	PTS	STS	PTS	STS	PTS	STS	PTS	STS	PTS	STS
TRAINING	EXPERIMENTER	86%	98%	9	12	2	0	2	2	1	4	0	0	4	0
	RELIABILITY CHECKER	87%	100%	9	12	1	1	3	3	2	4	0	0	5	0
	RELIABILITY	98%	98%	100%	100%	50%	50%	66%	66%	66%	50%	100%	100%	80%	100%
BASELINE	EXPERIMENTER	92%	72%	7	6	-	-	-	-	-	-	-	-	-	-
	RELIABILITY CHECKER	95%	96%	7	6	-	-	-	-	-	-	-	-	-	-
	RELIABILITY	96%	95%	100%	100%	-	-	-	-	-	-	-	-	-	-
MANIPULATION I	EXPERIMENTER	100%	96%	30	28	1	2	0	1	4	2	0	1	0	0
	RELIABILITY CHECKER	100%	98%	30	28	2	4	0	1	4	4	0	1	0	0
	RELIABILITY	100%	97%	100%	100%	50%	50%	100%	100%	100%	50%	100%	100%	100%	100%
IMMEDIATE FEEDBACK	EXPERIMENTER	96%	98%	40	45	1	0	4	1	4	4	0	0	0	0
	RELIABILITY CHECKER	97%	100%	40	45	2	0	4	1	5	5	0	0	0	0
	RELIABILITY	98%	97%	100%	100%	50%	100%	100%	100%	80%	86%	100%	100%	100%	100%
REVERSAL	EXPERIMENTER	96%	94%	11	13	-	-	-	-	-	-	-	-	-	-
	RELIABILITY CHECKER	96%	96%	11	13	-	-	-	-	-	-	-	-	-	-
	RELIABILITY	100%	97%	100%	100%	-	-	-	-	-	-	-	-	-	-

*PTS = Patient Therapist Session
STS = Student Therapist Session

RELIABILITY TABLE #2

SUBJECT 2

PHASE		VARIABLE 1 PERCENT DURATION OF WORK BEHAVIOR		VARIABLE 2 NUMBER OF LOOPS		VARIABLE 3 THERAPIST HELPED THE SUBJECT		VARIABLE 4 SUBJECT ASKED FOR HELP		VARIABLE 5 NUMBER OF APPROPRIATE SOCIAL PRAISE		VARIABLE 6 NUMBER OF INAPPRO-PRIATE SOCIAL PRAISE		VARIABLE 7 DISAPPROVALS BY THE THERAPIST	
		*PTS	**STS	PTS	STS	PTS	STS	PTS	STS	PTS	STS	PTS	STS	PTS	STS
TRAINING	EXPERIMENTER	91%	78%	9	3	2	1	3	4	2	2	0	0	1	0
	RELIABILITY CHECKER	96%	82%	9	3	1	0	3	5	2	3	0	0	0	0
	RELIABILITY	94%	95%	100%	100%	50%	50%	100%	80%	100%	66%	100%	100%	50%	100%
BASELINE	EXPERIMENTER	92%	100%	0	0	-	-	-	-	-	-	-	-	-	-
	RELIABILITY CHECKER	96%	100%	0	0	-	-	-	-	-	-	-	-	-	-
	RELIABILITY	95%	100%	100%	100%	-	-	-	-	-	-	-	-	-	-
MANIPULATION I	EXPERIMENTER	96%	94%	21	22	0	1	2	1	1	1	0	0	2	1
	RELIABILITY CHECKER	100%	96%	21	22	0	1	3	2	2	2	0	0	1	2
	RELIABILITY	96%	97%	100%	100%	100%	100%	66%	50%	50%	50%	100%	100%	50%	50%
IMMEDIATE FEEDBACK	EXPERIMENTER	96%	98%	50	33	0	0	3	1	5	3	0	0	0	0
	RELIABILITY CHECKER	98%	100%	50	33	0	0	3	1	5	3	0	0	0	0
	RELIABILITY	97%	98%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
REVERSAL	EXPERIMENTER	99%	100%	13	6	-	-	-	-	-	-	-	-	-	-
	RELIABILITY CHECKER	100%	100%	13	6	-	-	-	-	-	-	-	-	-	-
	RELIABILITY	99%	100%	100%	100%	-	-	-	-	-	-	-	-	-	-

*PTS = Patient Therapist Session
STS = Student Therapist Session

RELIABILITY TABLE # 3

SUBJECT 3

PHASE		VARIABLE 1 PERCENT DURATION OF WORK BEHAVIOR		VARIABLE 2 NUMBER OF LOOPS		VARIABLE 3 THERAPIST HELPED THE SUBJECT		VARIABLE 4 SUBJECT ASKED FOR HELP		VARIABLE 5 NUMBER OF APPROPRIATE SOCIAL PRAISE		VARIABLE 6 NUMBER OF INAPPRO-PRIATE SOCIAL PRAISE		VARIABLE 7 DISAPPRO-VALS BY THE THERAPIST	
		*PTS	**STS	PTS	STS	PTS	STS	PTS	STS	PTS	STS	PTS	STS	PTS	STS
TRAINING	EXPERIMENTER	44%	53%	1	2	8	10	9	3	0	2	0	0	7	7
	RELIABILITY CHECKER	46%	64%	1	2	11	11	9	3	0	1	0	0	8	5
	RELIABILITY	95%	82%	100%	100%	72%	90%	100%	100%	100%	50%	100%	100%	87%	71%
BASELINE	EXPERIMENTER	70%	76%	0	0	4	4	-	-	-	-	-	-	-	-
	RELIABILITY CHECKER	73%	76%	0	0	8	7	-	-	-	-	-	-	-	-
	RELIABILITY	95%	100%	100%	100%	50%	57%	-	-	-	-	-	-	-	-
MANIPULA-TION I	EXPERIMENTER	54%	88%	3	2	5	5	5	0	3	3	0	0	3	2
	RELIABILITY CHECKER	54%	94%	3	2	8	8	4	0	3	1	0	0	3	4
	RELIABILITY	100%	93%	100%	100%	62%	40%	80%	100%	100%	33%	100%	100%	100%	50%
IMMEDIATE FEEDBACK	EXPERIMENTER	64%	78%	14	3	8	11	7	3	6	2	0	0	2	1
	RELIABILITY CHECKER	66%	81%	14	3	9	11	5	2	4	1	0	0	2	3
	RELIABILITY	96%	95%	100%	100%	88%	100%	71%	66%	66%	50%	100%	100%	100%	33%
REVERSAL	EXPERIMENTER	96%	100%	0	2	-	-	-	-	-	-	-	-	-	-
	RELIABILITY CHECKER	92%	100%	0	2	-	-	-	-	-	-	-	-	-	-
	RELIABILITY	95%	100%	100%	100%	-	-	-	-	-	-	-	-	-	-

*PTS = Patient Therapist Session
STS = Student Therapist Session

RELIABILITY TABLE # 4

SUBJECT 4

DISCUSSION

The study showed the undeniable effectiveness of social praise in reinforcing institutionalized psychotic adults in an occupational therapy setting. The data clearly showed that whenever social praise was given contingent upon appropriate work behavior or good work performance, the level of productivity increased in all four subjects. The group mean tables showed the significant increase on variable 2, number of loops, from baseline to manipulation 1 (from 2.7 to 17.2 and 11.9 in patient-therapist and student-therapist sessions respectively). During the Immediate Feedback phase, during which the therapists were praised for giving social praise to the subjects, there were a greater number of social praise given by both therapists and a higher level of productive work on the part of the subjects, (from 17.2 to 27.5 for patient-therapist and from 11.9 to 28.0 for student-therapist from manipulation 1 to immediate feedback phase.)

Variable 2 number of loops completed had the largest variability both among the subjects and from one phase to the next. The large variation on this variable was mainly due to the following factors:

1. The level of difficulty on lacing the leathercraft articles. In most cases two or even three pieces

of leather were to be placed together, while in other pieces such as Scotch Coin Holder, lacing was only around the edges of one piece of leather, and therefore easier to lace than other pieces. The very high points on variable 2 belonged to this specific leathercraft.

2. Only the "correctly" laced loops were counted. Correctness meant no twist in the loop, appropriate pattern followed, tightness and neatness. Consequently the subjects sometimes laced many loops, but due to incorrectness, the none countable loops did not count according to the criterion.
3. If a given subject did not follow the correct pattern and was not stopped by the therapist until later, he had to take the laced leathercraft apart and redo it. This case could lower the level of productivity, although the duration of work behavior could stay as high as 100%.
4. The starting and finishing knots were the most time consuming elements of the task. Therefore, at these stages the level of productivity was low compared to the other parts.
5. Some patterns seemed to be followed easily by one subject, but were difficult for the next one.

6. Since the subjects could keep the first completed leather article of each kind, the first article was completed in less time in case of the first three subjects.
7. The subjects worked harder on the leather piece they liked the most.

Variable 1, percent duration of work behavior PDWB, was the most consistent variable for the first three subjects and throughout the study. The data showed that these three subjects worked almost constantly in all sessions excluding the conversation time with the therapists, which was considered as non-working time. It should be noted that asking questions or asking for help was not considered as "inappropriate" per se in any work setting. It was actually the matter of "frequency" and "duration" of the time the trainer spent with each worker in order to keep the work going, and to increase the level of productivity. The high consistent duration of work behavior in all of the subjects and all the phases, even in baseline and reversal phases in the absence of the therapists, was noticeable.

The overall number of variable 3, number of times therapist helped the subject without being asked, and variable 4, number of times subject asked for help,

decreased relatively from one phase to another. This was an indication that the more experienced the subjects became, the less need for supervision was required on the part of subjects. The table showed a larger frequency for both variables 3 and 4 in patient-therapist sessions. This was mainly because of patient-therapist's frequent checks on subjects' work performance compared to the student-therapist.

The group mean for variable 5, number of appropriate instances of social praise, increased from each phase to the next for patient-therapist, while the variable somewhat decreased (0.7) for student-therapist from training phase to manipulation phase. The variable showed a relatively large increase (from 3.12 to 4.3 for patient-therapist and from 1.4 to 3.8 for student-therapist) from manipulation 1 to immediate feedback phase. This pattern indicated that during the training session in which the therapists were not given any specific instructions, the student-therapist gave more social praise to the subjects contingent upon appropriate work behavior than did the patient-therapist. However, during Manipulation 1 in which the therapists were given specific instructions to praise the appropriate work behavior and good work performance, the

frequency of the behavior increased significantly in patient-therapist sessions, while it dropped about 0.7 in student-therapist sessions. During the immediate feedback phase in which the therapists were immediately reinforced for giving social praise, both therapists gave greater amount of social praise (an increase of 1.1 and 2.4 for patient-therapist and student-therapist respectively) from manipulation 1 to the immediate feedback phase. This increase along with significant increase in the number of loops done in immediate feedback phase by all the subjects (from 1.7 to 27.5 for the patient-therapist and from 11.9 to 28.0 for student-therapist on the group mean from manipulation 1 to immediate feedback phase) indicated that immediate feedback by the experimenter was quite reinforcing for the therapists, although the communication system was not as good as it could be. This conclusion is in contrast with McCormack's finding that, there was a decrease in subjects work behavior during the immediate feedback phase because the differential stimulus (the experimenter) was lost since the instructions were not given in person.

The improvement in this phase could be due to the following reasons:

1. The therapists were receiving frequent verbal praise for giving appropriate social praise and following the given instructions.
2. The experimenter could interrupt the therapists to make any suggestions or to remind them of the given instructions, while in the other phase, regardless of the case e.g. putting one subject on extinction deliberately or not, not following the instruction, etc. the session could not be interrupted.
3. All the subjects received approximately the same amount of attention, while in other phases a great percentage of therapists' time was spent on subject 4, who showed the least desirable work performance, and consequently, good workers, who needed less help or supervision, were somewhat ignored.
4. Since no criterion was made for the number of social praise comments given contingent upon appropriate work behavior (i.e., one social praise for every 3 minutes of continuous work behavior) therefore the therapists were not receiving any feedback or instruction on the number of social praise comments given in each session. However, the immediate feedback from the experimenter contingent upon praising the subjects played a role in improving the subjects' productive work.

Further research in this area is recommended due to contradictory results of these studies. Variable 6, inappropriate social praise rarely happened through the phases and no specific pattern was observed when it did occur.

Variable 7, number of disapproval statements by the therapist, decreased from one phase to the next as the subjects became more experienced with the work. Subject 4 received the largest number of disapprovals due to his extremely poor work behavior.

For a general conclusion of the study the following statements can be made:

1. The overall level of productive work, number of loops done in each session, was higher in patient-therapist sessions in almost all the cases. The following reasons are cited:
   a. Patient-therapist gave more social praise than student therapist.
   b. He gave more physical help rather than giving only the verbal instructions to the subjects.
   c. Patient-therapist checked subjects' work quite frequently and stopped them immediately if they were not following

the given instructions. Therefore, the subjects rarely had to take the finished work apart and relace the article, which was a frequent case with student-therapist.

d. Patient-therapist was more motivated to do his work because of acting as a therapist and special privileges he was receiving for his points, (going to movies every week, etc.). Student-therapist was receiving only a partial credit for working on this project for a field training course taken at the Kalamazoo State Hospital.

2. In most cases, whenever there was an increase in the number of appropriate social praise, the number of loops tended to be higher.
3. Whenever there was a longer duration of time spent working, the number of loops tended to be higher.
4. Whenever there was a drop in variable 4, subject asked for help, the number of loops and PDWB tended to be higher.

5. The number of (THS) (SAH) and (DBT) dropped as the subjects became more trained throughout the study.
6. The "better working subjects" (Those who should need less help and showed a better work performance) received less attention and social praise from both therapists.

In conclusion, as the data indicated, the patient trainer showed a better performance in terms of increasing the level of productivity in subjects' work behavior. As it was discussed earlier, this experimenter feels that one of the essential factors in patient trainer's performance was his motivation for being a trainer, although he was an experienced worker in working with leathercraft articles. This experimenter feels that the small number of subjects and the simple task of lacing limit making any general conclusion in employing patients as trainers in any other setting or with a larger group. However, there are many residents of state institutions who are more capable of being involved in productive work activities than what is expected from them or provided for them. This author strongly feels that given the present circumstances of state institutions, employing patients as therapeutic agents is one

of the most practical, inexpensive and effective techniques of treatment in state institutions and other large institutions.

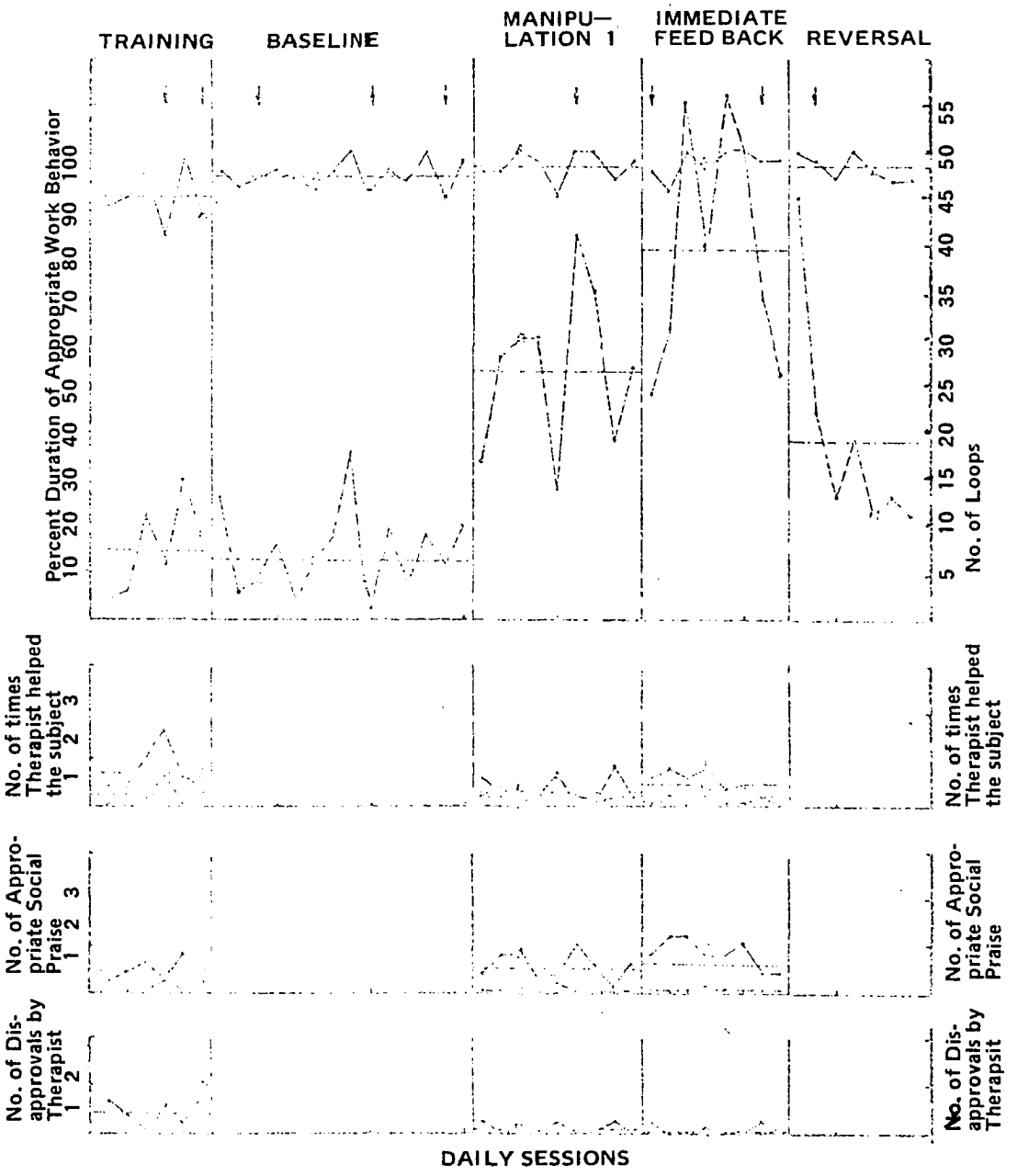


Figure 1
Subject 1

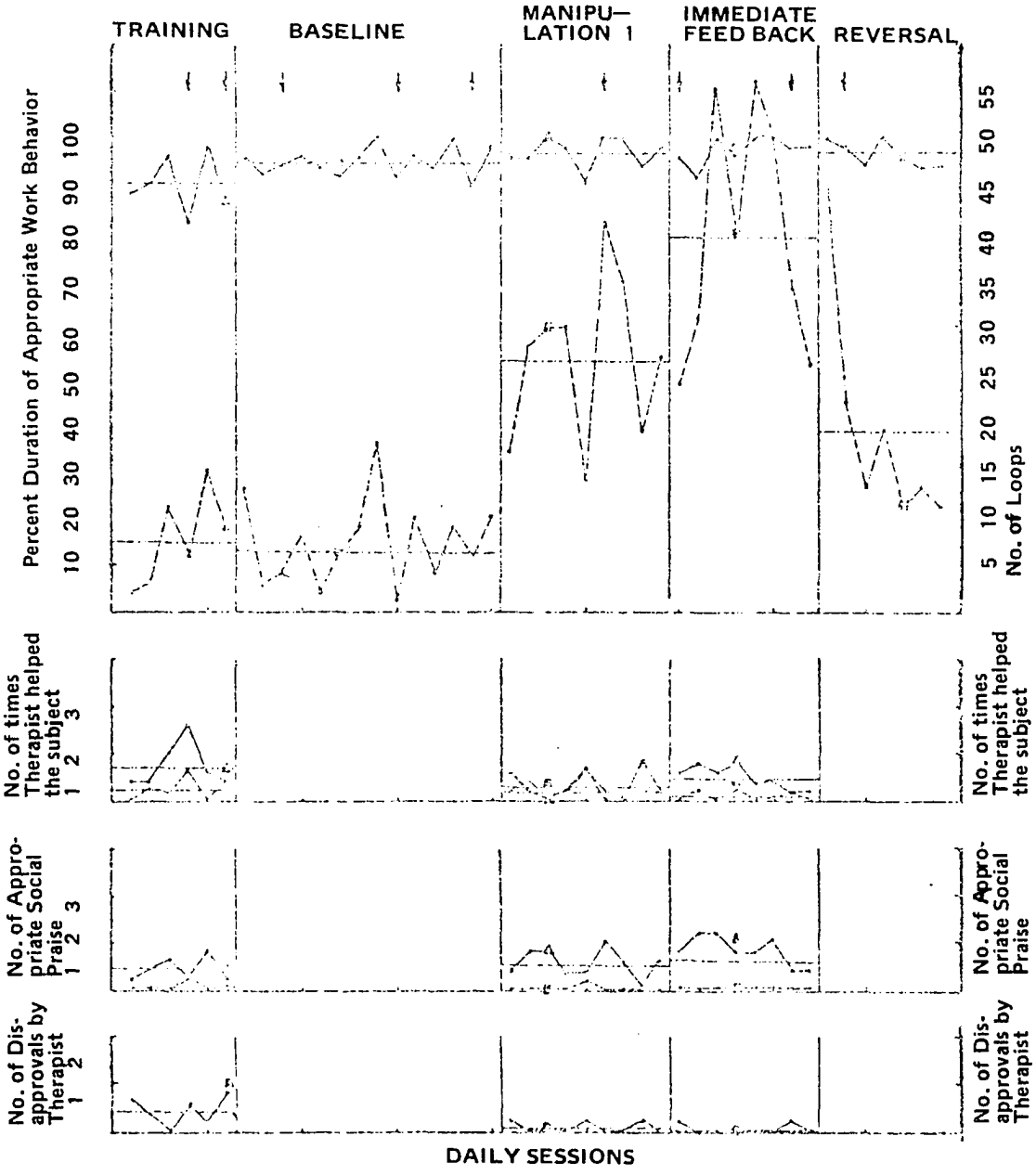


Figure 2
Subject 2

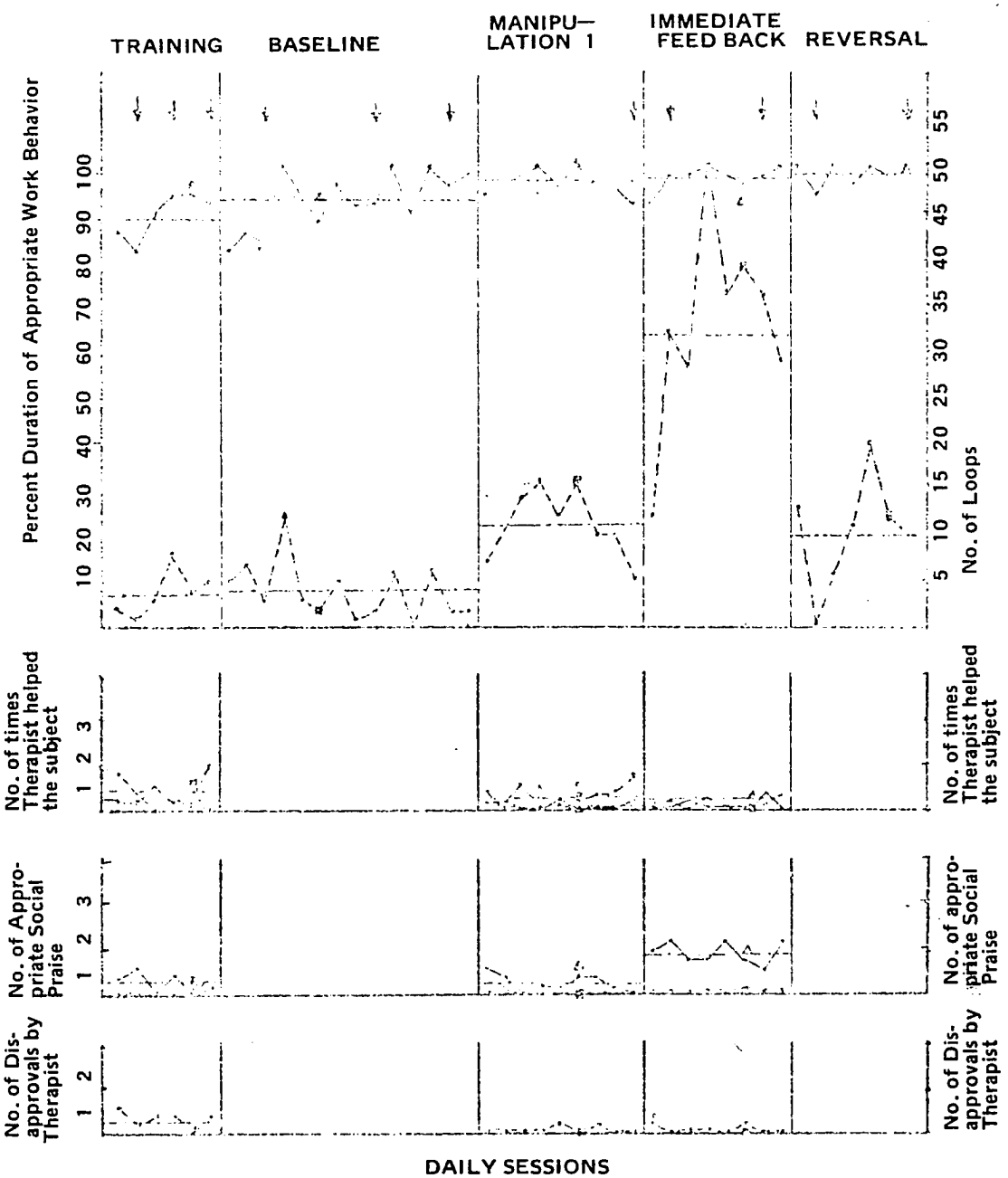


Figure 3
Subject 3

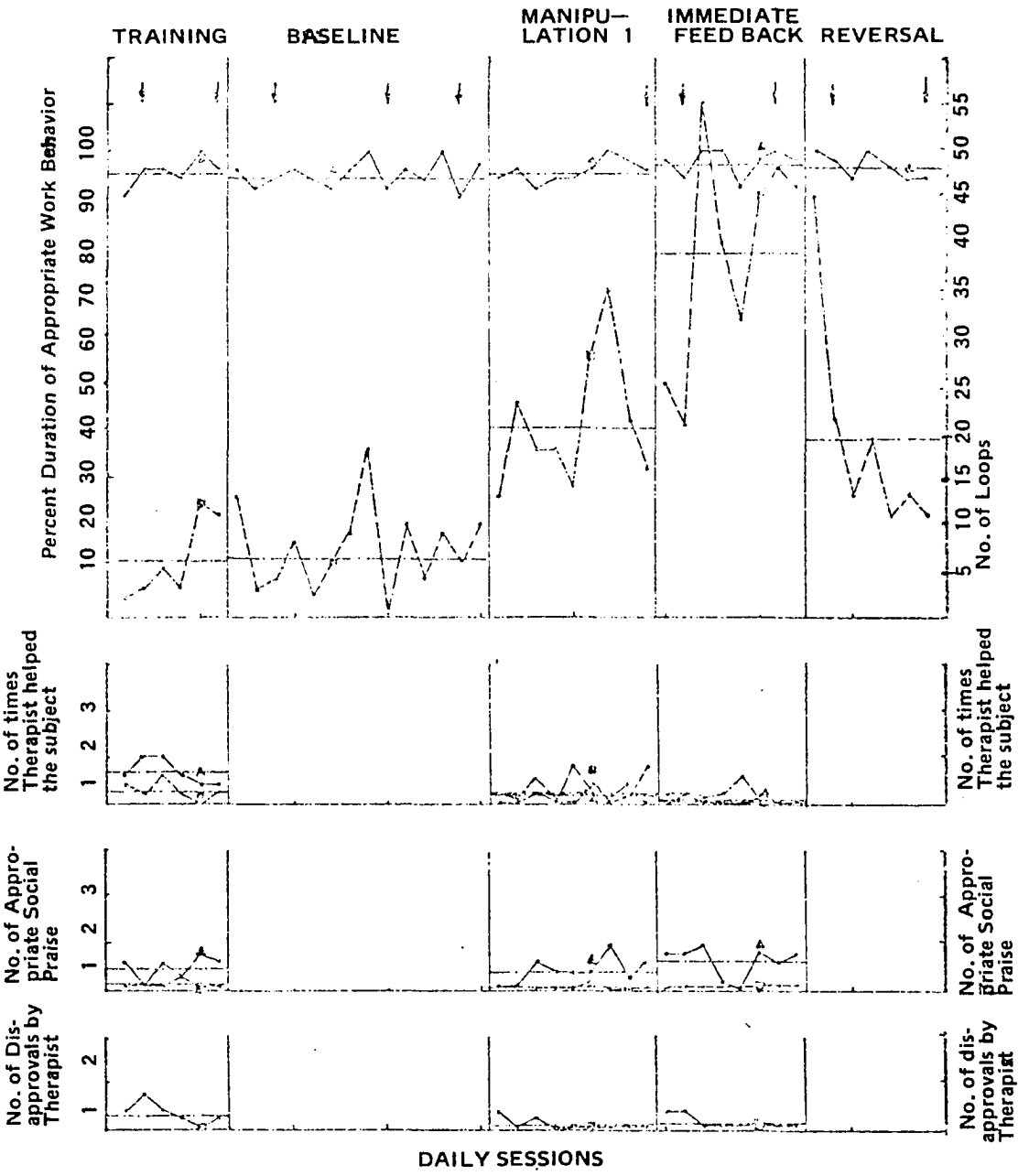
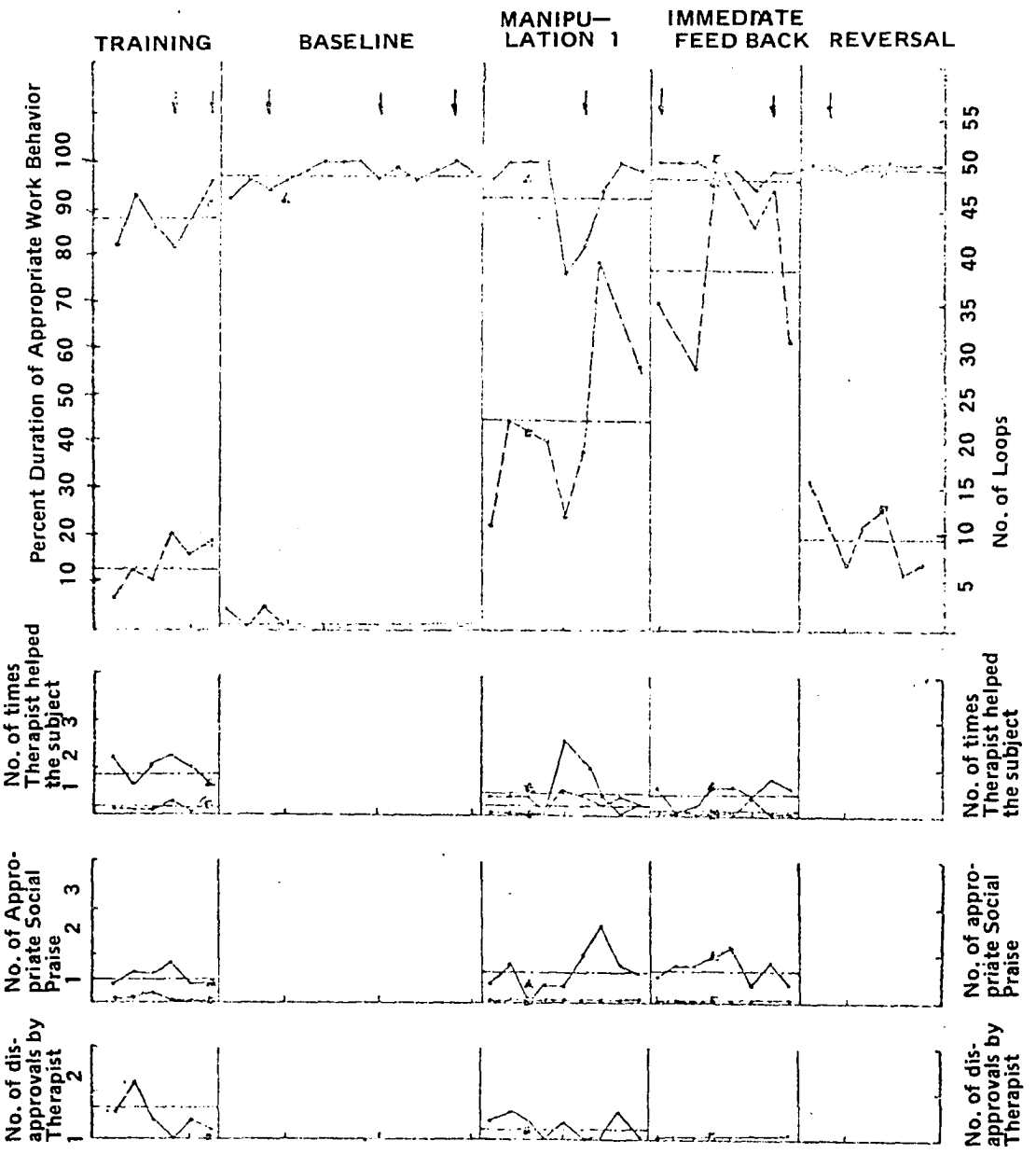


Figure 4
Subject 4



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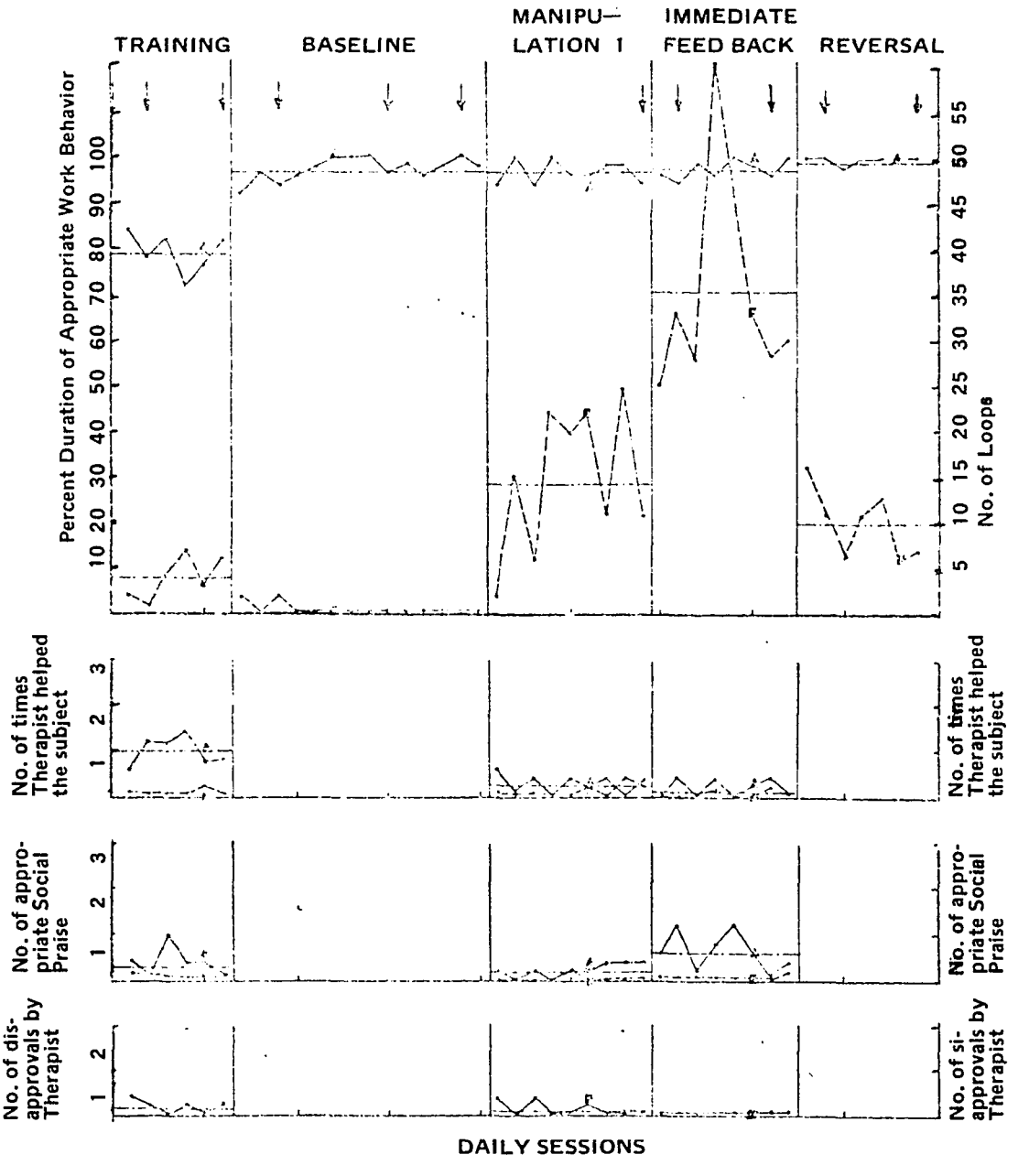
Subject 5



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Subject 6

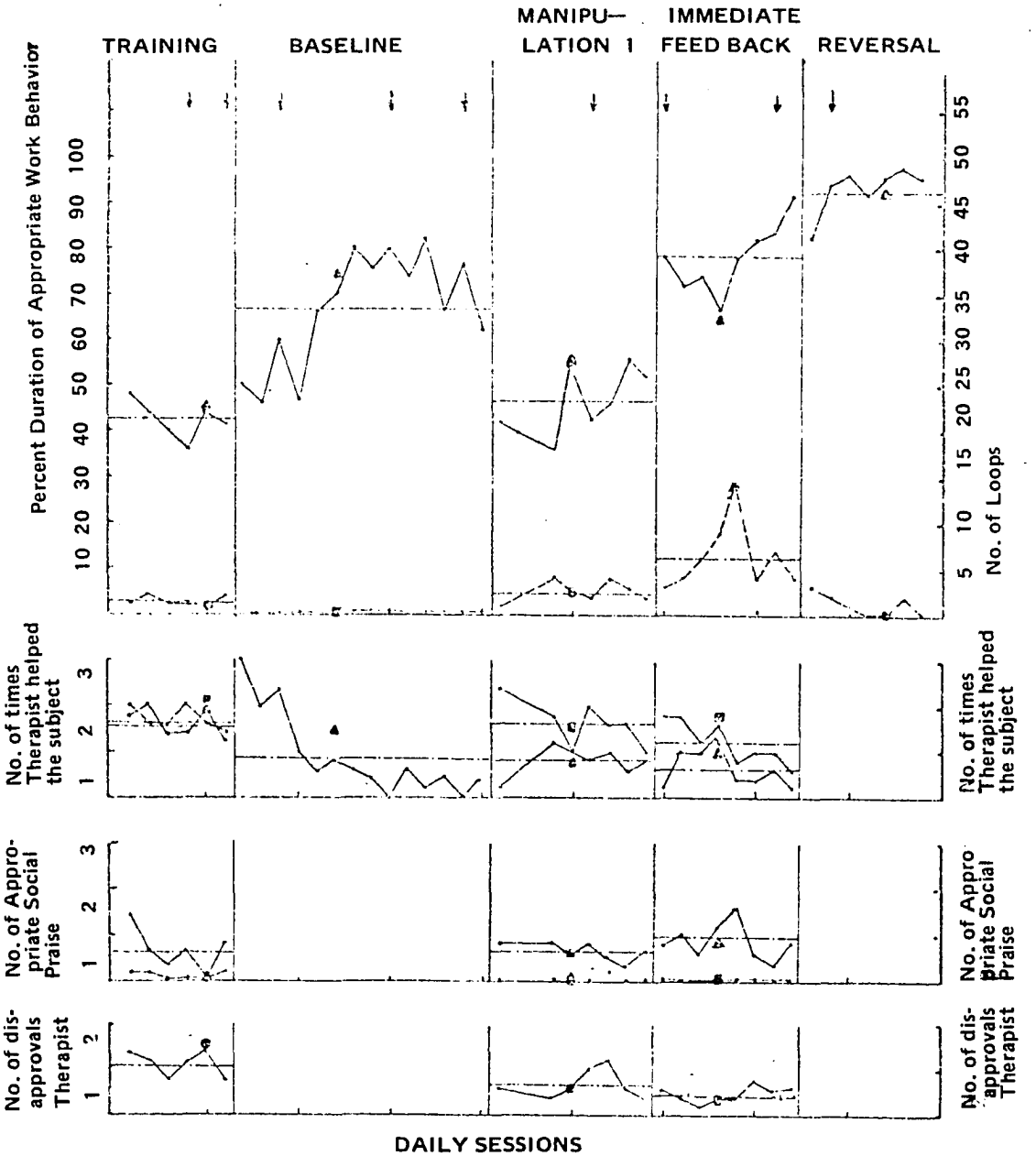

Figure 7
Subject 7

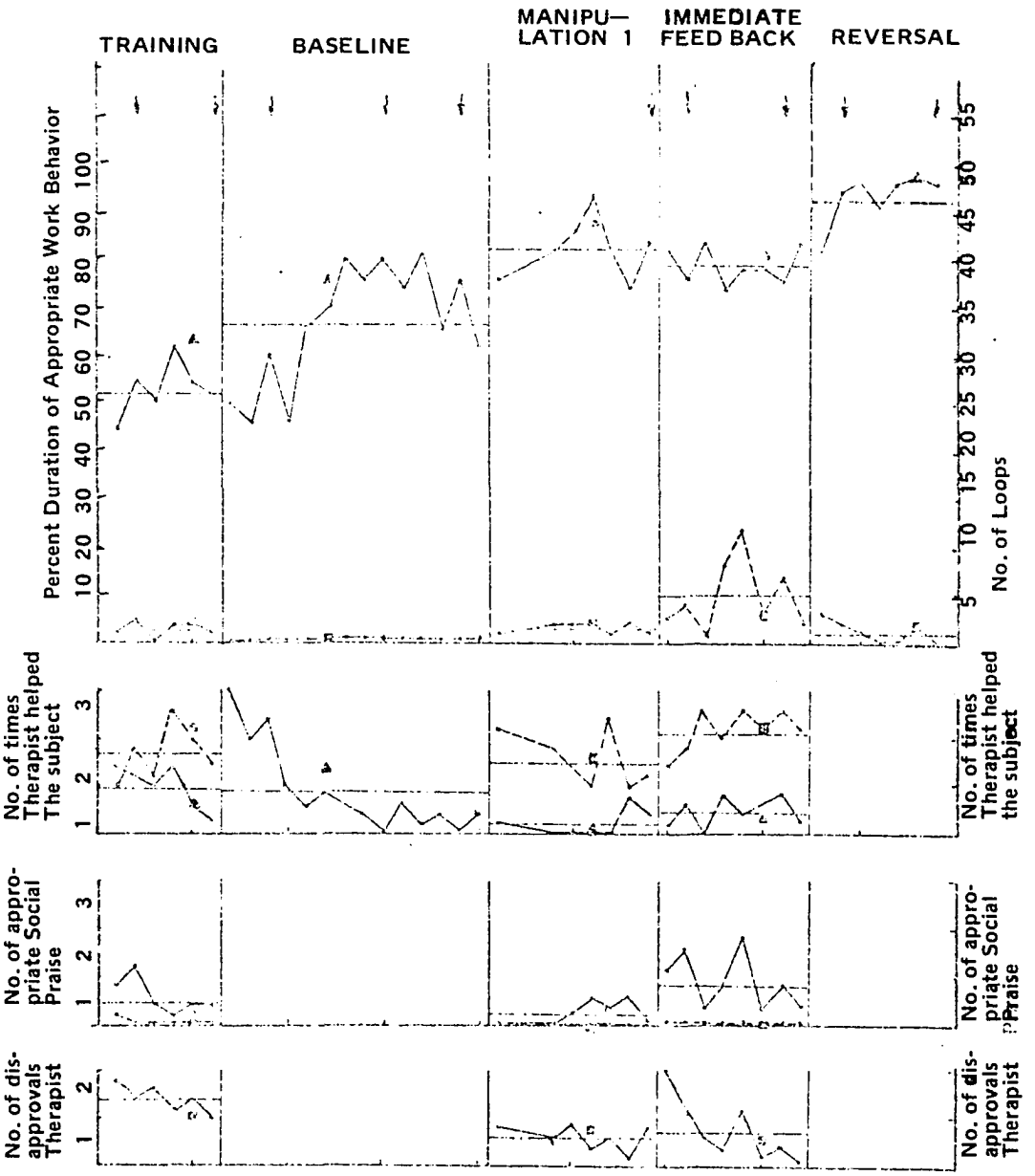

Figure 8
Subject 8

BIBLIOGRAPHY

Allen K.E. and Harris F.R. (1966) Elimination of a Child's Excessive Scratching by Training the Mother in Reinforcement Procedures. Behavioral Research and Therapy 4, 79-84.

Bailey, Joh S., Garry D. Timbers, Elary L. Phillips, and Monstrose, M. Wolf. Modification of Articulation Errors of Pre-Delinquents by Their Peers. University of Kansas, Journal of Applied Behavior Analysis (1971) No. 4, 265-281.

Becker, W.C., Madsen, C.H.,Jr., Arnold, C.R. and Thomas, D.R. "The Contingent Use of Teacher Attention and Praise in Reducing Classroom Behavior Problems" Journal of Special Education, I, (1967) 287-307.

Clement, P.W. "Elimination of Sleepwalking in a Seven-Year-Old Boy." Journal of Consulting and Clinical Psychology, XXXIV, I, (1970), 22-26.

Clement, P.W., "Please, Mother, I'd Rather You Did it Yourself". Training Parents to Treat Their Own Children. Journal of School Health.

Cockrill, V.K. and Bernal, M.D., "Operant Conditioning of Verbal Behavior in a Withdrawn Patient by a Patient-Peer". Perspectives in Psychiatric Care, VI, 5, (1968), 230-237.

Dilly, G.M. "Retarded Women Teach Self-help Skills". Hospital and Community Psychiatry. 1969, 154-155.

Guerney, B.G., Psychotherapeutic Agents: New Roles for Non-Professionals, Parents and Teachers, New York: Holt, Rinehart and Winston, 1969.

Hall, R. Vance, Connie Cristher, Sharon Cranston and Bonnie Tucker. Teachers and Parents as Researchers Using Multiple Baseline-Designs. Journal of Applied Behavior Analysis, 1970, No. 4, 247-255.

Hart, B.M., Allen, K.E., Buell, J.S., Harris, F.R. and

Wolf, M.M., "Effects of Social Reinforcement on Operant Crying". Journal of Experimental Child Psychology, I, 1966, 145-153.

Hawkins, R.P., Peterson, R.F., Schweid, E., and Bijou, S.W., "Behavior Therapy in the Home: Amelioration of Problem Parent-Child Relations with the Parent in a Therapeutic Role". Journal of Experimental Child Psychology, IV, I, 1966, 99-107.

Henker, B.A. and Whalen, C.K., "Pyramid Therapy in a Hospital for the Retarded". Proceedings of the 77th Annual Convention of the American Psychological Association, 1969, 779-780.

Houglan, M., "The Mentally Retarded Contributed, Also". Nursing School 1963, II, No. 3, 1975-176.

Lindsley, Ogden R. An Experiment with Parents Handling Behavior at Home. Johnstone Bulletin, 1966, Vol. IX, No. 1, 27-36. Edward Johnstone Training and Research Center, Bordentown, N.J.

Ludwig, Marx, Forad Small Group Responsibility in the Treatment of Chronic Schizophrenics. Psychiatric Quart. (Suppl.), 41, 1967, 262-280.

MacCormack, J.P., "Patient Contributions to a Therapeutic Environment: Use of Patients as Behavior Assistants in Occupational Therapy Setting" Unpublished Master's Thesis Western Michigan University, Kalamazoo, Michigan, December 1970.

Martin, G.L., "Short Term Participation by 130 Undergraduates vs. Operant Conditioners in an Ongoing Project with Autistic Children". The Psychological Record, 20, (1970), 327-336.

Ora, J.P., and Burgess, M.M., "Operant Conditioning of a Deviant Child by a Psychiatric Patient-Mother". Psychotherapy: Theory and Research and Practice, VIII, 1, (1971), 106-108.

Perlmutler, Felice and Dorothy Durham. Using Teen-Agers to Supplement Casework Service. Psychotherapeutic Agents: New Roles for Non-Professionals, Parents and Teachers. pp. 265-273.

Rowland, Marhta, A Pilot Study on the Use of Stigher-functioning Retardates as Language Acquisition Trainers of Lower functioning Retardates in Attendant Supervised Training Sessions on Institutional Wards. A Doctoral Dissertation. Michigan State University, 1972.

Ryback, D. and Stoats, A.W., "Parents as Behavior Therapy-Technician's in Treating Reading Deficits (Dyslicia)." Journal of Behavior Therapy and Experimental Psychiatry, I, (1970), 109-119.

Shan, A. Saleem. Training and Utilizing a Mother as the Therapist for her Child. Psychotherapeutic Agents: New Roles for Non-professionals, Parents and Teachers, pp. 401-407.

Surrat, Paul, Ulrich, R.E. and Hawkins, R.P. "An Elementary Student as a Behavioral Engineer. Journal of Applied Behavior Analysis, II, 2 (1969), 85-92.

Tahmisian, J.A. and McReynolds, W.T. "Use of Parents as Behavioral Engineers in the Treatment of a School-Pholic Girl". Journal of Counseling Psychology, XVIII, 3, (1971), 225-228.

Thomas, D.R., Becker, W.C. and Armstrong, M., "Production and Elimination of Disruptive Classroom Behavior by Systematically Varying Teacher's Behavior. Journal of Applied Behavior Analysis, I, 1, (1968) 35-46.

Wahler, R.G., Winkel, S.H., Peterson, R.F., and Morrison, D.C. "Mothers as Behavior Therapists for Their Own Children". Behavior Research and Therapy, 3, (1965), 113-124.

Whalen, C.E., and Henker, B.A., "Creating Therapeutic Pyramids Using Mentally Retarded Patients". American Journal of Mental Deficiency, 74, 1969, pp. 331-337.

Whalen, C.K., and Henkers, B.A. "Pyramid Therapy in a Hospital for the Retarded, Methods, Program, Evaluation, and Long-term Effects". American Journal of Mental Deficiency 75, No. 4, 1971, pp. 414-634.

Wilson, E.D. and McCulley, C., "The Use of Patient-Teachers in a Maximum-Security Psychiatric Unit." Hospital and Community Psychiatry, Vol. 21, January 1970, 37-38.

Zeilberger, J., Sampens, S.E. and Sloane, H.N., "Modification of a Child's Problem Behaviors in the Home with a Mother as Therapist". Journal of Applied Behavior Analysis, I, 1, (1968), 47-54.

Zimmerman, E.H. and Zimmerman, J., "The Alternation of Behavior in a Special Classroom Situation". Journal of the Experimental Analysis of Behavior, V, (1962), 59-60.