1975

Youths as behavior change agents in an institution

Susan J. Carstens
University of the Pacific

Youths as Behavior Change Agents in an Institution

A Thesis

Presented to

the Graduate Faculty

of the

University of the Pacific

In Partial Fulfillment

of the Requirements of the Degree

Master of Arts

Susan J. Carstens

December, 1975

This thesis, written and submitted by

Susan J. Tandeau

is approved for recommendation to the Committee on Graduate Studies, University of the Pacific.

Department Chair:

Thesis Committee:

Mary Lynn Young Chair

Tom L. Atkinson

John R. Furgeson

Dated 12/4/15

Acknowledgements

The author wished to express her appreciation to thesis committee members Tom S. Allison, John R. Lutzker, and Martin Gipson for their assistance in this study. The author is particularly greatful to thesis committee chairone, Mary Lynn Young for her assistance and comments and her supportive nature and patience throughout the study.

Thanks are due to Cathee Williams who served as the experimental assistant and to the Youth Counselors who allowed the author the opportunity to be a part of the daily routine on El Dorado Hall. Special thanks are due to Bill Lemen, Youth Counselor, for his moral support and his interest in the study.

Finally, the author must extend her great appreciation to all the residents of El Dorado Hall, O.H. Close School, for their interest, cooperation, enthusiasm, and helpful suggestions throughout the study.

Abstract

Behavioral studies have shown that youths in various settings can function effectively as behavior change agents. This study used five 15 to 18 year old male youths in a closed institutional setting as behavior change agents for five male Youth Counselors. Youths specified staff behaviors they wanted to change, collected frequency data on each specified staff behavior, and suggested and implemented treatments to change staff behavior. A multiple baseline design across staff members was used to demonstrate the effects of youths' interventions on staff behaviors. Staff increased their frequency of positive verbal comments and decreased their frequency of negative verbal comments and threats regarding loss of privileges following a one-time feedback from youths regarding staff's baseline frequency of responses. Two staff members received a second treatment consisting of verbal feedback and praise immediately following each data collection session. This treatment was too short to have an effect on positive and negative verbal comments, but appeared to decrease staff's frequency of threats to a near zero rate. Follow-up revealed that frequency of responses did not return to the baseline rate in most cases. Consistent with past studies that have used youths as behavioral change agents, the present findings demonstrate that "delinquent" youths can be (a) accurate and reliable data collectors, and (b) effective behavior change agents for staff.

Youths as Behavior Change Agents in an Institution

Several behavioral studies have demonstrated that youths may be trained to use behavioral techniques effectively. Sherman and Cormier (1974) used tangible rewards to increase the percentage of appropriate student behaviors which resulted in an increase in the percentage of positive verbal responses and a decrease in negative verbal responses by the teacher. Halfacre, Cummins, and Thompson (Note 1) shaped students to identify and efficiently reduce undesirable behaviors in their teacher. Halfacre also found correlative changes in the students' undesirable behaviors. Thus, both the students and the teacher acquired more appropriate classroom behaviors. Graubard, Rosenberg, and Miller (1971) taught "deviant" children to increase their teacher's use of praise and decrease his use of negative comments and punishment. The children recorded all client-teacher remarks and sorted them into positive and negative groups. They were then taught to use eye contact and reinforcing behavior contingent on positive teacher performance and to break eye contact and ignore negative teacher performance.

Outside of the school setting, similar procedures have been employed. Werner, Minkin, Minkin, Fixsen, Phillips, and Wolf (1975) trained youths to respond to police officers with verbal statements of understanding and cooperation and a verbal statement of reform, coupled with politeness and appropriate facial orientation. A policeman rated these youths as less likely to be taken into custody, less likely to be stop-

ped again in the future, less likely to be considered troublemakers, and less "suspicious" than before training.

When attempts to get parents to implement a treatment program for their disruptive teenage son failed, Fedorvicius (1973) trained the son to effectively use reinforcement and extinction principles to alter parental responses to his behavior. Shunk, Dickinson, and Lutzker (Note 2) trained a class of institutionalized delinquents to use behavioral procedures to decrease a teacher's smoking behavior.

While such changes have been demonstrated in several different settings, little has been done in the way of training youths in a closed institutional juvenile hall to alter the behavior of the staff who monitor them. In such a setting, the youths often have long lists of rules to follow. The staff has control of most of the contingencies that could be manipulated to increase youths' socially desirable behaviors. However, institutional staff members sometimes are inconsistent in their interactions with youths (Buehler, Patterson, & Furniss, 1966; Feldman, Wodarski, Flax, & Goodman, 1972; Sanford, 1973). They also tend to use existing incentive systems as tools for managing and controlling youths' inappropriate behaviors rather than for teaching appropriate behaviors. (Costello,1972; Karacki & Levinson, 1970). In addition, peer reinforcement for "delinquent" behaviors and peer punishment for socially acceptable behaviors tends to overide staff influence (Buehler, et al., 1966; Feldman, et al., 1972). Formal mechanisms exist whereby youths can present grievances and suggestions for change, but such mechanisms may be complicated and slow (Sloane & Ralph, in press).

Buehler, et al. (1966) have hypothesized that delinquent peer groups not only shape and control other peers, but that they also shape and control the behavior of the staff. A systematic program using youths as change agents for staff behaviors should result in behavioral changes that are mutually reinforcing and therefore, more likely to maintain across situations.

The present study used a systematic program to examine (a) the extent to which institutional youths would use new behaviors when interacting with staff members, and (b) the extent to which the staff members' behaviors would change as a result of the youths' new behaviors.

Method

Setting

The present study was carried out at the O.H. Close School, a California Youth Authority institution near Stockton. The current treatment program for this institution is based on trasactional analysis (Berne, 1961; Campos & McCormick, 1972). In addition, the hall from which the subjects were chosen has a phase level incentive program and a participatory management system (El Dorado Hall, Note 3).

Subjects

Primary. The hall contains approximately 50 youths ranging in age from 14.5 to 18.5. The average length of stay for a youth in this hall is 34.8 weeks. The offenses for which the youths are serving time include murder, rape, child molesting, assault with a deadly weapon, armed robbery, burglery, and various petty and grand thefts. From a group of approximately 20 volunteers, five youths were chosen to participate in the study on the basis of their agreement on the staff behavior they would like to change. A second selection factor was the youths' expected length of stay; each youth expected to remain on the hall for at least five months which insured that he would remain for the full length of the project.

Secondary. The staff members monitored consisted of five male Youth Counselors ranging in age from 27 to 31. These men had been employed by the Youth Authority for three to seven years, and their educational level ranged from one to four years of college. They were chosen to participate in the study on the basis of availability. Two

or three of these Counselors worked during the times when the data were collected. All five Counselors were not on duty during any one data collection session. Prior to implementation of the study, Counselors were informed of its purpose and consented to participate.

Procedures

Behavioral definitions. Prior to the construction and implementation of any behavioral program, an analysis of the response to be modified and its antecedent and consequent conditions must be undertaken. In the present study, the experimenter met with the five youths and helped them to specify the staff behaviors they would like to change. In those initial meetings, three of the youths chose to work on increasing staffs' use of positive strokes and decreasing staffs' use of negative strokes.

The youths defined a positive stroke as a "pat on the back or a word of recognition that makes you feel good". The positive strokes measured were generally directed at the total group of youths, but occasionally, a staff member would direct a positive stroke to an individual youth in front of the group. The following are examples of positive strokes:

1. The dorm area looks good today.
2. The tone of the hall has been good all day.
3. I would like to stroke you all for your good behavior during the bedline last night.
4. Those of you on the work crew did a good job cleaning the day room today.

5. I would like to stroke Jim for the way he handled himself at case conference today.
6. I would like to thank Mr. Smith and Mr. White for their help in breaking up the fight in the day room today.

A negative stroke was defined as "a statement that says that you have done something wrong". Like the positive strokes, negative strokes were generally directed at the whole group, but occasionally, negative strokes were given to an individual. The following are examples of negative strokes:

1. The day room is a mess today.
2. There are too many cigarette butts on the floor.
3. The tone of the hall has been loud today.
4. There has been too much horseplay today.
5. The following people were talking during the mealtime today.
6. Mr. Brown, you have a one-hour early-bed for talking without permission.
7. The bedline was terrible last night.
8. I have a report that some of you were noisy and were throwing things last night after the bedtime.

A second group of these youths, one of whom was in the first group, chose to work on decreasing the number of threatening statements that staff members used when speaking to the youths.

A threat was defined by the youths as "a statement that tells us

that if we don't do something, we will be punished." Examples of threats are:

1. If the tone in the hall is not quiet tonight, you will all receive an early bed.
2. If you don't get your feet off that chair, you are going to get an early bed.
3. I want you all to beware that if you don't act more like adults, you will get burnt.
4. The next person caught smoking without a butt can will receive a two-hour early bed.
5. We will be taking down names of those who are seen talking in the dining room tonight, and they will all receive early beds for talking.
6. The evening program will not be continued if the hall area is not clean after structure.

The collection of baseline data on the defined behaviors occurred prior to the development of the first treatment plan (Treatment I). Following baseline data collection, the experimenter met with the youths for approximately one hour during which time the youths, with treatment options proposed by the experimenter, designed an intervention. Possible alternative interventions were discussed in the event that Treatment I was ineffective in changing the staff member's frequency of responses. The actual development of the second treatment (Treatment II) occurred after Treatment I was implemented, and was based on the results of the data collected during Treatment I. Again,

the youths, with suggestions from the experimenter, designed Treatment II.

The method of letting the youths design their own treatments was based on a paper by Zimmerman and Zimmerman (1971). They suggest that encouraging participants to "do their own things" leads to more cooperative participants.

The overall design for the implementation of interventions was preplanned by the experimenter. A detailed explanation of the design, followed by the exact procedures used in Treatment I and II are outlined below.

Design. A multiple baseline design across staff members was used to evaluate the impact of the youths' interventions on frequency of positive and negative strokes, and on frequency of threats. Baseline data were collected on the specified behaviors for all five staff members simultaneously. When the baseline appeared stable for a staff member, Treatment I was begun while the other four staff members remained in the baseline condition. Subsequently, Treatment I was begun on the second staff member, while three remained in the baseline condition, and so on. Treatment II was introduced for positive and negative strokes when the frequency of the behavior appeared to stablize under Treatment I. Treatment II, then, was an attempt to increase positive strokes and decrease negative strokes more than Treatment I had done. Treatment II was introduced for threats when Treatment I appeared to have little effect on the frequency of the behavior.

Treatment II was discontinued in both cases when three of the

youths, one of whom was a primary data collector, were about to be paroled.

Follow-up data collection sessions were conducted by the experimenter, the youths, and one of the five staff members.

Baseline. The frequency of the staff members' responses defined above were recorded during daily structure periods that usually occurred just prior to mealtime. During these sessions (approximately 10 to 20 minutes of time), the staff members stood in front of the seated youths, took attendance, informed the youths of the program activities that would follow mealtime, and gave the youths feedback concerning their behavior prior to the structure period. The youths might be given feedback about the behavior that had occurred at anytime prior to the structure period. The staff member might say, for example, "The tone was getting pretty loud tonight," or "I understand that you gentlemen did a good job last night keeping the noise down during the bedline." Sometimes, staff would discuss a particular issue that hadn't been resolved, "We are still waiting for the fork and spoon that has been missing from the dining room for three days to be returned." Occasionally, structure periods were called at times other than mealtime. These special group structure periods occurred when the staff members wanted to inform the youths of something immediately. Most of the data for the present study were collected during the structure period prior to the evening meal (81 out of 95 sessions for positive and negative strokes, and 85 out of 102 sessions for threats). Data on positive and negative strokes were collected in sessions prior to the

noontime meal five times and during special structure sessions nine times. Data on threats were collected prior to the noontime meal seven times and during special structure sessions ten times.

The experimenter trained the five youths to count the absolute frequencies of the specified behaviors for each staff member during each session. Each youth was given a data card (see Figures 1 & 2) and instructed to write the names of staff members present at each session and to tally any occurrence of the specified behavior for each staff member.

Although direct occurrence verses nonoccurrence data is most desirable, straight frequency recording was used in this study because it was (a) easier to explain to the youths, and (b) easier to control since the sessions were limited in time, and since several observers recorded data simultaneously.

Three youths worked in a group. Group I counted the frequency of positive and negative strokes verbalized by each staff member. Group II counted the frequency of threats delivered by each staff member who was present. One youth worked in both groups and counted both the frequency of positive and negative strokes and the frequency of threats for all staff members present during a structure session (see Figure 3). Prior to the collection of data, one youth from each group was designated as the primary data collector for the group.

The experimenter collected baseline data on both staff behaviors concurrently with the youths (see Tables 3 & 4). These independent observations were used to compute the reliability of the observations

Youth's Name	Day_____ Date_____
Positive	Negative
Staff Member I ++++	||
Staff Member II ||	||||
Staff Member V |	0

Fig. 1. A sample data collection card for recording the frequency of positive and negative strokes across staff members.

Youth's Name	Day_____ Date_____
Counselors	Number of Threats
Staff Member I	///
Staff Member II	/
Staff Member V	0

Fig. 2. A sample data collection card for recording the frequency of threats across staff members.

Youth's Name _____ Day_____ Date_____

Counselor	Positive	Negative	Threats	Prompts	Feedback
I	1	0	0	No	Positive & Negative Staff I - Y Staff II -Y
II	///	1	1		
III	0	//	0		Threats Staff I - Y Staff II - Y

Fig. 3. A sample data collection card used by youth who participated in both groups. The "Prompts" column was added after youths introduced the first verbal prompt. The feedback column was added after Treatment II was implemented and refers to youths' implementation of feedback and praise to staff members.

collected by the youth who was designated as the primary data collector.

Experimental conditions. After the youths had collected baseline data on the behavior of all five staff members, the youths and the experimenter discussed a possible plan for modifying the behavior of concern.

Treatment I. The youths decided they would like to graph the baseline data and show the graphs to each staff member asking for a change in the frequency of responses (i.e. Group I asked for an increase in positive strokes and a decrease in negative strokes; Group II asked for a decrease in threats). Thus, Treatment I consisted of one interaction between a staff member and the youths. The youths and the experimenter continued to collect data on each staff member following this single feedback session. During this phase of the study, the youths introduced an unplanned procedure. In an effort to increase the number of strokes the staff members gave, the youths gave occasional verbal prompts to the staff members in the form of questions that might elicit positive or negative strokes. Examples of such questions are as follows:

1. How was the tone of the hall today?
2. How does the day room look today?
3. Does the bed area look clean enough today?

After the first verbal prompt was given, the experimenter added a column to her data card and recorded the occurrence or nonoccurrence of a verbal prompt for each session. The youth collecting on both categories of staff behaviors (strokes and threats) volunteered to

also collect data on the occurrence of verbal prompts. Thus, a column was added to his card (see Figure 3), and he served as a reliability observer for the experimenter recording verbal prompts. These data are reported in the "observer agreement" section of this report.

When Treatment I did not produce the desired amount of change in staff behavior, the youths implemented Treatment II. Two staff members were chosen to receive Treatment II.

Treatment II. The youths informed each staff member of the frequency of his identified responses during the session immediately after the session ended. Group I gave the staff member verbal praise if he had increased positive strokes or gave no negative strokes:

1. You did a good job tonight. You gave two positive strokes and you didn't give any negative strokes.
2. I want to stroke you for not giving any negative strokes, but we would like to see you give more positive strokes.
3. You did good on the positive strokes tonight, but you still gave two negative strokes. We would like to see you decrease the negative strokes.

Group II gave praise to a staff member selected for treatment if he gave no threats during the session, or if he decreased from the previous session:

1. I want to stroke you, Mr. Brown. You only gave one threat tonight.
2. Right on. You didn't give any threats tonight.

3. That's five structures in a row without any threats. Keep it up, man.

Thus, during Treatment II, both groups gave feedback to a staff member after every session regardless of change in the frequency of the specified response. Feedback and reinforcement were given if change occurred.

The youths and the experimenter continued to collect data on each staff member's responses. The experimenter also collected data on the youths' implementation of feedback and praise to the staff members. The youth collecting on both staff behaviors and on verbal prompts asked if he could also collect on youth implementation of feedback and praise. Again, an extra column was added to his data card (see Figure 3). These data are analyzed as a part of the reliability data collected in the study and are reported in the "observer agreement" section of this report.

On three occasions during the treatment phase of the study, youths gave unplanned positive strokes to staff members during the data collection session. These instances occurred after a staff member had given a number of positive strokes to the youths, and are noted on the graphic presentation of results and discussed in the results section.

Follow-up. Follow-up data collection sessions began immediately after the final treatment during a period of time when no explicit treatment procedures were in effect. Unlike a reversal, follow-up sessions involved no instructions to youths regarding discontinuation of treatment procedures. Observations by the experimenter indicated

that, by in large, youths did not continue treatment procedures during this time period. The follow-up sessions were distributed over a 60 day period of time with an average of seven days between sessions for a particular staff member. (The minimum time period between sessions was a few hours when two sessions occurred on the same day while the maximum time period between sessions was 35 days.) Data in the first five follow-up sessions were collected by the youths and the experimenter. Data in the next four sessions were collected by one of the staff members who volunteered to help. Unfortunately, there were no reliability checks on these data points (these points are starred on the graphic presentation of results). The experimenter collected data on positive and negative strokes during the last six sessions and data on threats during the last seven sessions.

Measurement system. Although variations in scheduling of the staff members made it impossible for sessions to occur at the same point in time for each staff member, the gap between sessions for a particular staff member was usually not more than three or four days. Breaks in the lines on the graphic presentation of results indicate longer time periods between sessions. All sessions occurred within a six-month time period and treatments were introduced sequentially in time across staff members (see Tables 1 & 2). Since the scheduling variations of the staff members were random (days off, vacations, training time off, sick time, etc.), there is no reason to believe there are any variables that would result in systematic bias of the results.

Table 1

General time period involved for measuring positive and negative strokes.

Staff Member	Experimental Condition	Total Sessions	Total Time Span	Months
I	Baseline	4	27 days	Feb. - Mar.
	Treatment I	23	42 days	Mar. - Apr.
	Treatment II	5	21 days	Apr. - May
	Follow-up	5	60 days	May - July
		37	150 days	6 months
II	Baseline	12	40 days	Feb. - Mar.
	Treatment I	25	44 days	Mar. - May
	Treatment II	3	6 days	May - May
	Follow-up	12	60 days	May - July
		52	150 days	6 months
III	Baseline	13	52 days	Feb. - Apr.
	Treatment I	12	38 days	Apr. - May
	Follow-up	1	60 days	May - July
		26	150 days	6 months
IV	Baseline	19	62 days	Feb. - Apr.
	Treatment I	9	28 days	Apr. - May
	Follow-up	9	60 days	May - July
		37	150 days	6 months
V	Baseline	19	72 days	Feb. - Apr.
	Treatment I	15	18 days	Apr. - May
	Follow-up	6	60 days	May - July
		40	150 days	6 months

Table 2

General time period involved for measuring threats.

Staff Member	Experimental Condition	Total Sessions	Total Time Span	Months
I	Baseline	11	28 days	Feb. - Mar.
	Treatment I	10	33 days	Mar. - Apr.
	Treatment II	11	27 days	Apr. - May
	Follow-up	8	61 days	May - July
		40	149 days	6 months
II	Baseline	11	44 days	Feb. - Mar.
	Treatment I	12	25 days	Mar. - Apr.
	Treatment II	15	19 days	Apr. - May
	Follow-up	6	61 days	May - July
		44	149 days	6 months
III	Baseline	21	58 days	Feb. - Apr.
	Treatment I	11	30 days	Apr. - May
	Follow-up	5	61 days	May - July
		37	149 days	6 months
IV	Baseline	27	65 days	Feb. - Apr.
	Treatment I	10	23 days	Apr. - May
	Follow-up	12	61 days	May - July
		49	149 days	6 months

Observer agreement: staff behaviors. The experimenter served as a reliability observer for the youth designated as the primary data collector for each of the two groups. When the primary data collector was absent from a session, another youth from the group was appointed the primary data collector for that session, and the experimenter served as his reliability observer. In all cases, the youths' data, rather than the experimenter's data were plotted.

Two youths from each group served as the primary data collector's reliability observers. Due to commitments such as kitchen duty, lock-up for a violation of the institutional rules, absence from the hall on a day pass, visits from family members, and so forth, all five of the youths were not always present at a session. On those occasions where three youths from one group were present, each youth's data were compared separately with the primary data collector's data for reliability purposes.

An experimental assistant served as an occasional reliability observer for the experimenter. In these instances, the assistant recorded the frequency of staff member responses which were compared with the experimenter's data for reliability purposes.

Reliability was computed using the following formula:

$$\text{Percent Agreement} = \frac{\text{Number of agreements}}{\text{Number of agreements plus disagreements}} \times 100$$

Observer agreement was always 100% for threats for experimenter-youth reliability, youth-youth reliability, and experimenter-assistant reliability. For positive and negative strokes, experimenter-youth

reliability averaged 99.4%, youth-youth reliability averaged 95.2%, and experimenter-assistant reliability averaged 88.3%. These data are summarized in Tables 3 and 4. However, the method used for determining reliability is not well adapted for dealing with low rate behaviors, so the figures need to be interpreted with caution (i.e. percentages are inflated by the low absolute numbers of occurrences of the behavior in any one session).

Observer agreement: youths' implementation. There were no reliability checks on the one-time data feedback and presentation of graphs for Treatment I. The experimenter alone observed the youths' implementation of Treatment I for all staff members.

After the first unplanned verbal prompt was introduced by the youths, the experimenter, the experimental assistant, and one youth recorded the occurrence or nonoccurrence of a verbal prompt for each of the following 53 sessions. On six of the sessions, the experimenter and the experimental assistant were both present and their agreement on whether or not a verbal prompt occurred was 100%. On 23 of the 53 sessions, both the youth and the experimenter were present and their agreement on occurrence or nonoccurrence of a verbal prompt was also 100%. This reliability was computed using the statistic Kappa (Hartmann, Note 4) which accounts for chance agreements between observers recording occurrence or nonoccurrence data.

The experimenter collected the primary data on youths' implementation of Treatment II. The experimenter had planned to have reliability checks with the experimental assistant regarding youths' implemen-

Table 3

Summary of reliability data for positive and negative strokes.

Type	Reliability		
	Number of Checks	Range	Mean
1. Youth-Youth			
a. Overall	42 out of 95 sessions	75-100	95.2%
b. Baseline	6 out of 19 sessions	75-100	91.7%
c. Treatment I	20 out of 43 sessions*	75-100	97.9%
d. Treatment II	12 out of 18 sessions**	100	100%
e. Follow-up	4 out of 15 sessions	100	100%
2. Youth-Experimenter			
a. Overall	59 out of 95 sessions	75-100	99.4%
b. Baseline	13 out of 19 sessions	100	100%
c. Treatment I	28 out of 43 sessions	75-100	98.7%
d. Treatment II	13 out of 18 sessions	100	100%
e. Follow-up	5 out of 15 sessions	100	100%
3. Experimenter-Experimenter			
a. Overall	8 out of 95 sessions	59-100	88.3%
b. Baseline	1 out of 19 sessions	59	59.0%
c. Treatment I	7 out of 43 sessions	67-100	92.5%
d. Treatment II	0 out of 18 sessions	——	——
e. Follow-up	0 out of 15 sessions	——	——

*Three youths were present and collected data for seven of these 20 sessions. On two occasions, three youth observers disagreed. Their reliability was as follows:

1. Primary Data Collector and Youth I - 75% reliability.
   Primary Data Collector and Youth II - 100% reliability.
2. Primary Data Collector and Youth I - 92% reliability.
   Primary Data Collector and Youth II - 100% reliability.

**Three youths were present and collected data for five of these 12 sessions.

Table 4

Summary of reliability data for threats.

Type	Reliability	
	Number of Checks	Mean
1. Youth-Youth		
a. Overall	35 out of 102 sessions	100%
b. Baseline	7 out of 18 sessions	100%
c. Treatment I	8 out of 37 sessions*	100%
d. Treatment II	17 out of 31 sessions	100%
e. Follow-up	3 out of 16 sessions	100%
2. Youth-Experimenter		
a. Overall	62 out of 102 sessions	100%
b. Baseline	11 out of 18 sessions	100%
c. Treatment I	23 out of 37 sessions	100%
d. Treatment II	23 out of 31 sessions	100%
e. Follow-up	5 out of 16 sessions	100%
3. Experimenter-Experimenter		
a. Overall	7 out of 102 sessions	100%
b. Baseline	0 out of 18 sessions	____
c. Treatment I	4 out of 37 sessions	100%
d. Treatment II	3 out of 31 sessions	100%
e. Follow-up	0 out of 16 sessions	____

*Three youths were present and collected data in four out of these eight sessions.

tation during this phase of the study, but the assistant was unable to collect the data. There were, however, reliability checks with the youth who volunteered to collect youth implementation data concurrently with the experimenter. The youth obtained these data on 23 of the 44 sessions of this phase of the study. Using the Kappa statistic mentioned above to compute reliability percentages, there was 100% observer agreement on whether or not youth implementation of Treatment II occurred.

Results

Staff Behavior

Positive and negative strokes. The effects of the youths' interventions are depicted in Figures 4 and 5. Although Treatment I appeared to increase positive strokes in some sessions, the extreme variability across sessions makes it difficult to infer changes directly attributable to treatment. Negative strokes were not quite so variable and tended to remain close to zero for most staff members after Treatment I was introduced. Treatment I appeared to have the greatest effect on Staff Members I, II, and IV in increasing positive strokes and on Staff Member III in decreasing negative strokes (see Table 5).

The unplanned verbal prompts appeared to elicit strokes from most of the staff members, but the strokes were not always positive strokes. When the youths asked how they had done, the staff members tended to give the feedback on how they felt the youths had behaved, whether good or bad. The verbal prompts are indicated on the graphic presentation of results with arrows above the sessions in which the prompts occurred.

The unplanned positive strokes given by the youths had no apparent effect in increasing positive strokes given by staff members the next session. In fact, the rate decreased for each session following the youths' strokes. Sessions where youths gave strokes are indicated on the graphic presentation of results with a "P.S." above the session.

Treatment II was too short to infer any effect on responses and certainly could not be interpreted to have increased the rate of positive strokes over the baseline rate for the two staff members receiv-

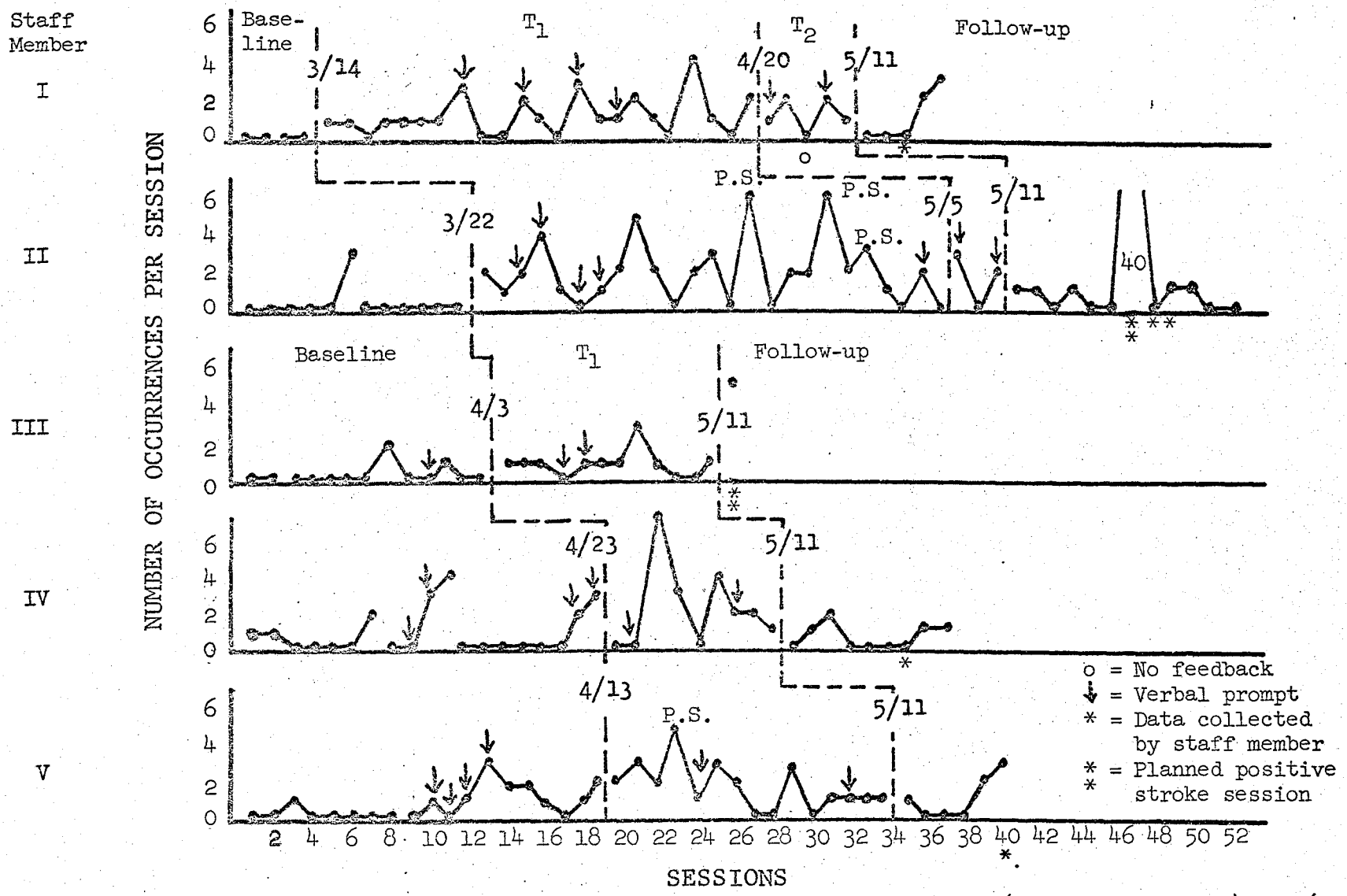

Fig. 4. The frequency of positive strokes per session during baseline, T_1 (one-time feedback), T_2 (feedback and reinforcement each session), and follow-up. Numbers between dotted lines indicate dates when a change in conditions occurred.

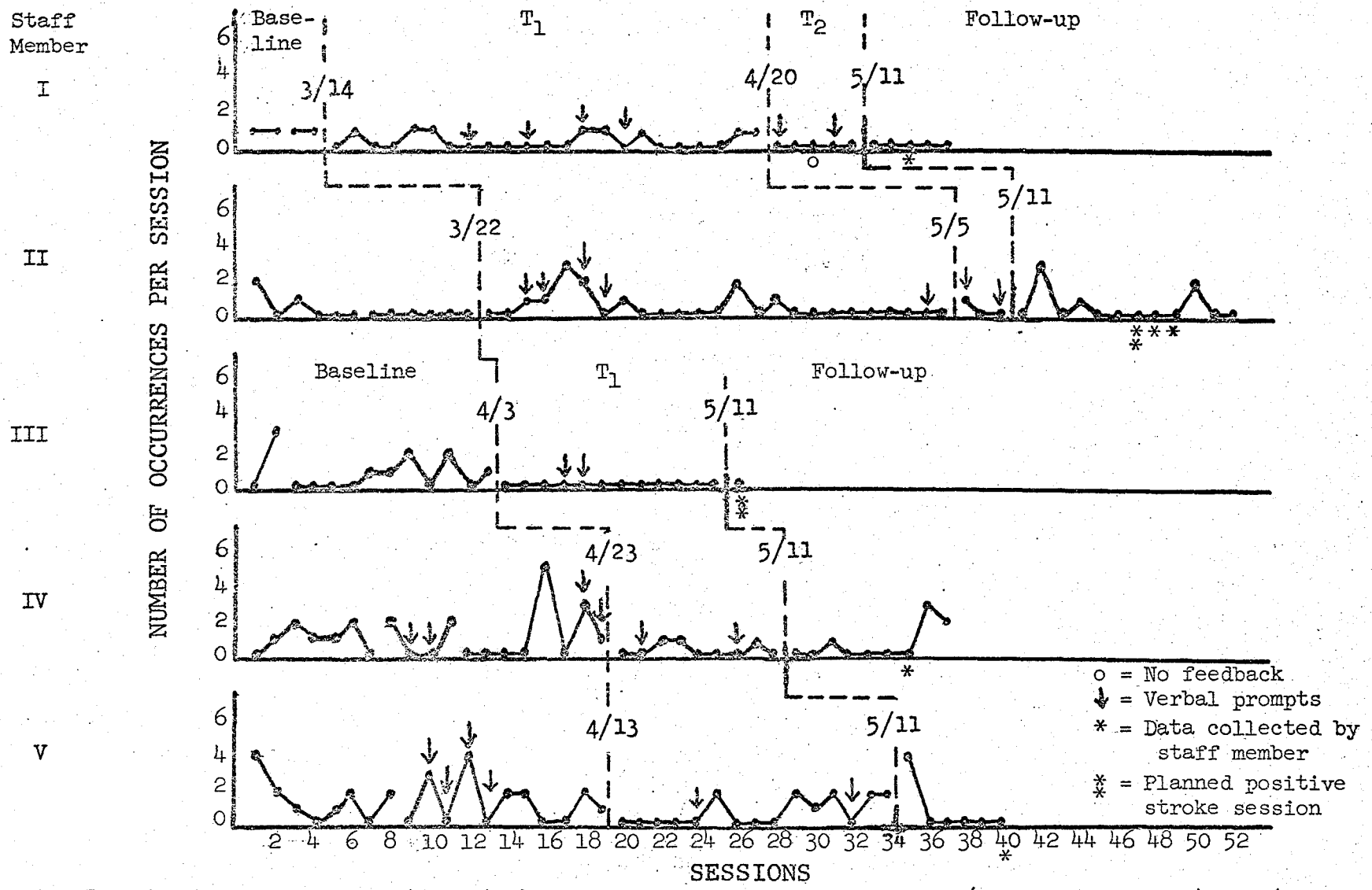

Fig. 5. The frequency of negative strokes per session during baseline, T_1 (one-time feedback), T_2 (feedback and reinforcement each session), and follow-up. Numbers between dotted lines indicate dates when a change in conditions occurred.

Table 5

Range and mean of positive and negative strokes for each experimental condition.

Staff Member	Strokes	Baseline		Treatment I		Treatment II		Follow-up	
		Range	Mean	Range	Mean	Range	Mean	Range	Mean
I	Positive	0	0	0-4	1.17	0-2	1.20	0-3	1.00
	Negative	1	1	0-1	.35	0	0	0	0
II	Positive	0-3	.25	0-6	1.88	0-3	1.67	0-40	3.75**
	Negative	0-2	.25	0-3	.44	0-1	.33	0-3	.50
III	Positive	0-2	.23	0-3	.92	*	*	0-5	5.00**
	Negative	0-3	.77	0	0	*	*	0	0
IV	Positive	0-4	.84	0-7	2.10	*	*	0-2	.56
	Negative	0-2	.79	0-3	.33	*	*	0-3	.67
V	Positive	0-3	.74	0-5	1.67	*	*	0-3	1.00
	Negative	0-4	1.32	0-2	.67	*	*	0-4	.67

*Treatment not implemented.

**Includes planned session of positive strokes given by staff members.

ing Treatment II.

In four out of five cases, the follow-up data showed higher rates of positive strokes and lower rates of negative strokes than the baseline rates. However, session 47 for Staff Member II and session 26 for Staff Member III were sessions where the staff members had planned ahead of time to give "lots of positive strokes" to the youths. They are indicated on the graphic presentation of results with two stars under the sessions.

Threats. The effects of the youths' interventions on the staff members' frequency of threats is depicted in Figure 6 for four staff members. One staff member (Staff Member V) had a low rate of threats during the baseline period (average of .2 per session), and thus, was not treated by the youths. The treatments had the least effect on Staff Member I. His rate of threats dropped slightly from baseline to Treatment I and again, a slight drop appeared after Treatment II was implemented (see Table 6). The rate dropped to zero during the follow-up phase of the study. Treatment I had little effect on Staff Member II, but his rate of threats dropped to zero shortly after Treatment II was implemented, and remained at an almost zero rate during follow-up. Staff Member III's rate of threats dropped somewhat after Staff Members I and II had received Treatment II, and remained at a near zero rate after he received Treatment I, and during the follow-up period. Staff Member IV's rate of responses was variable during the baseline period, but dropped to a zero rate after Treatment I and to near zero during follow-up.

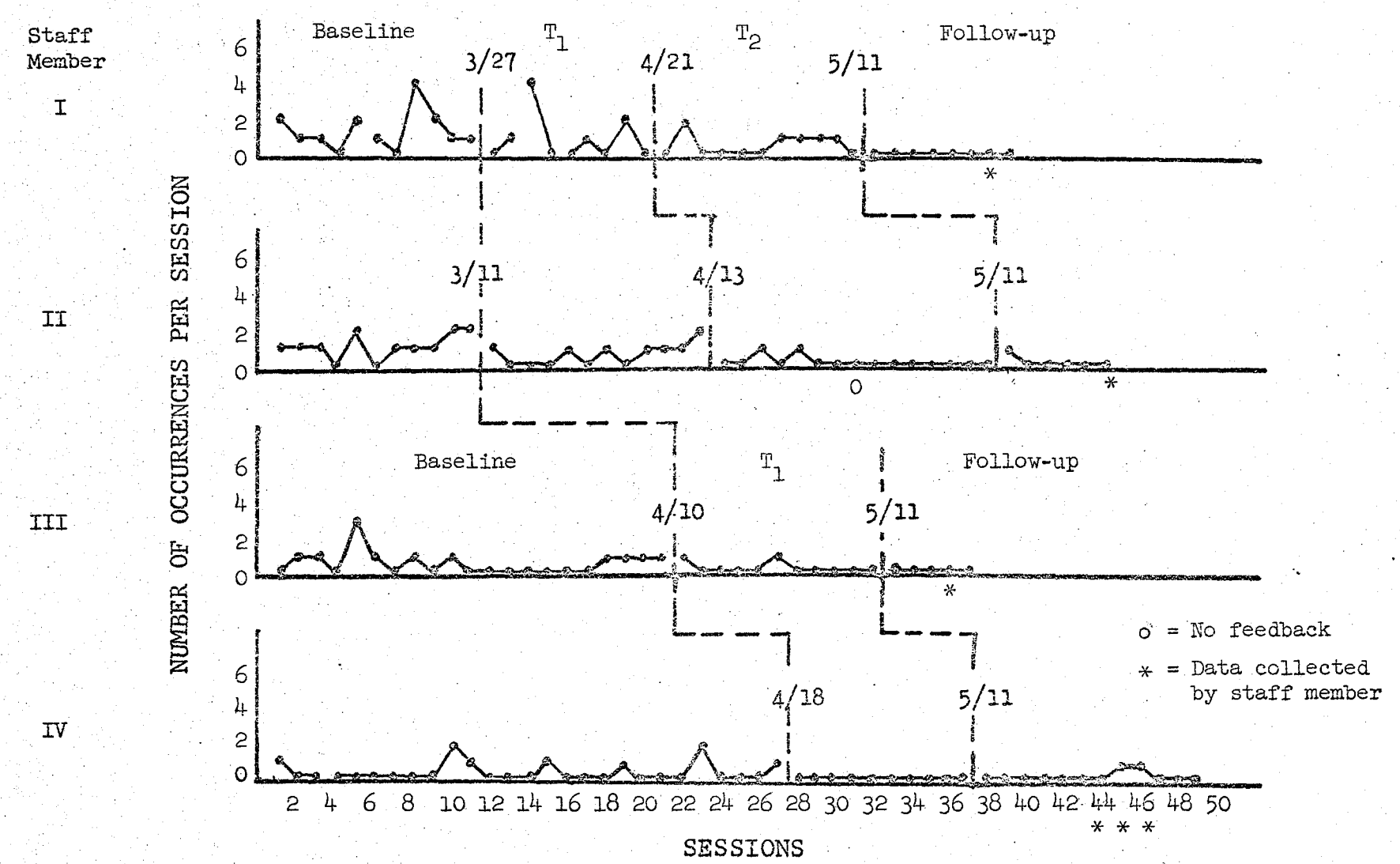

Fig. 6. The frequency of threats per session during baseline, T_1 (one-time feedback), T_2 (feedback and reinforcement each session), and follow-up. Numbers between dotted lines indicate dates when a change in conditions occurred.

Table 6

Range and mean of threats for each experimental condition.

Staff Member	Baseline		Treatment I		Treatment II		Follow-up	
	Range	Mean	Range	Mean	Range	Mean	Range	Mean
I	0-4	1.36	0-4	.89	0-2	.55	0	0
II	0-2	1.09	0-2	.67	0-1	.13	0-1	.17
III	0-3	.57	0-1	.18	*	*	0	0
IV	0-2	.33	0	0	*	*	0-1	.17
V	0-2	.22	*	*	*	*	0	0

*Treatment not implemented.

Analysis of the effects of possible extraneous variables. Plotting all staff members' data points on a single graph according to topography of responses, an analysis of the data was performed to evaluate whether there were interactions among the types of responses occurring in a given session. No apparent interaction was observed. That is, a large number of positive or negative strokes given in a session did not appear to suppress the number of threats given in the same session nor did a large number of threats suppress positive or negative stroke frequencies. Some interaction was observed between positive and negative strokes, however. High frequencies of positive strokes were often, but not always, associated with low frequencies or zero frequencies of negative strokes.

The experimenter also analyzed the data to see if the number and type of verbal responses given by one staff member in a session would have any effect on the number and type of responses given by another staff member during that same session. Analysis of the data did not reflect any systematic effects of the frequencies or types of responses, i.e. a high frequency of positive strokes by one staff member in a session did not suppress the frequency of positive strokes by another staff member for the same session.

Youth Implementation

The youths implemented Treatment I with each staff member as planned. During Treatment II, the youths implemented the feedback and praise procedures appropriately during 43 of the 44 sessions. The rea-

son for the one exception, the youths explained, was that the staff members had just announced that all youths had to go immediately to their beds and remain there the rest of the evening. The youths did not feel like talking with the staff members at this time, and thus, did not give the feedback and praise.

Discussion

In the present study, youths in a closed institutional setting were trained to use new behaviors when interacting with staff members, and as a result, altered certain staff behaviors. These findings are in accord with past studies that have found youths to be effective behavior change agents (Fedorvicius, 1973; Graubard, et al., 1971; Sherman & Cormier, 1974; Werner, et al., 1975; Halfacre, et al., Note 1; Shunk, et al., Note 2). The major new behaviors exhibited by the youths in this study were: (a) identification of staff behavior change objectives, (b) accurate and reliable data collection, and (c) consistent and systematic application of "treatments of choice." These "treatments of choice" were primarily verbal interventions that were consistent with the treatment philosphy of the hall, i.e. transactional analysis, and were a part of the residents' existing behavioral repertoire.

These youths did not seem to require much training in identifying the problem behaviors of staff. In response to the experimenter's question: "What behaviors would you like your counselors to use more often, or less often?", youths identified specific problem behaviors of the staff as well as behavior change objectives. They wanted to train staff to be more positive in their verbal behavior.

Training youths in data collection procedures proceeded more slowly. The experimenter spent some time with the youths explaining the use of a tally mark for each occurrence of the specified staff behavior. Youths were, however, capable of collecting accurate and reliable data after the training session. There was no indication that they inflated the

number of threats or negative strokes for staff members they disliked or deflated the number for staff members they liked.

Youths became more reliable in returning their completed data cards to the experimenter as the study progressed (see Figure 7). This increase was most rapid for the primary data collector (see Figure 8). Several youths who did not initially volunteer to participate in the study were curious to know what sort of things were being recorded on the data cards after the study had begun. These youths asked if they could record data and were given data cards on request. Many youths collected data on staff behaviors that were not treated in the experiment, and some collected frequency data on their own behaviors or the behavior of their peers. The demonstration that institutional youths may be trained to be accurate and reliable data collectors suggests that they might more often be trained as behavior change agents in institutional settings.

The youths who participated in this study were quick to suggest treatments that might alter staff behavior. They introduced verbal prompts (questions) on their own in an effort to elicit positive strokes from their counselors. They also gave out positive strokes to staff in an effort to reward appropriate verbal behavior before the experimenter had introduced the topic of reinforcement or behavior modification. Youths appeared eager to train staff members. For example, when staff members were told that they were giving too many threats, they defended themselves by saying that they were giving out "straight adult information". The youths corrected staffs' analysis by noting the difference

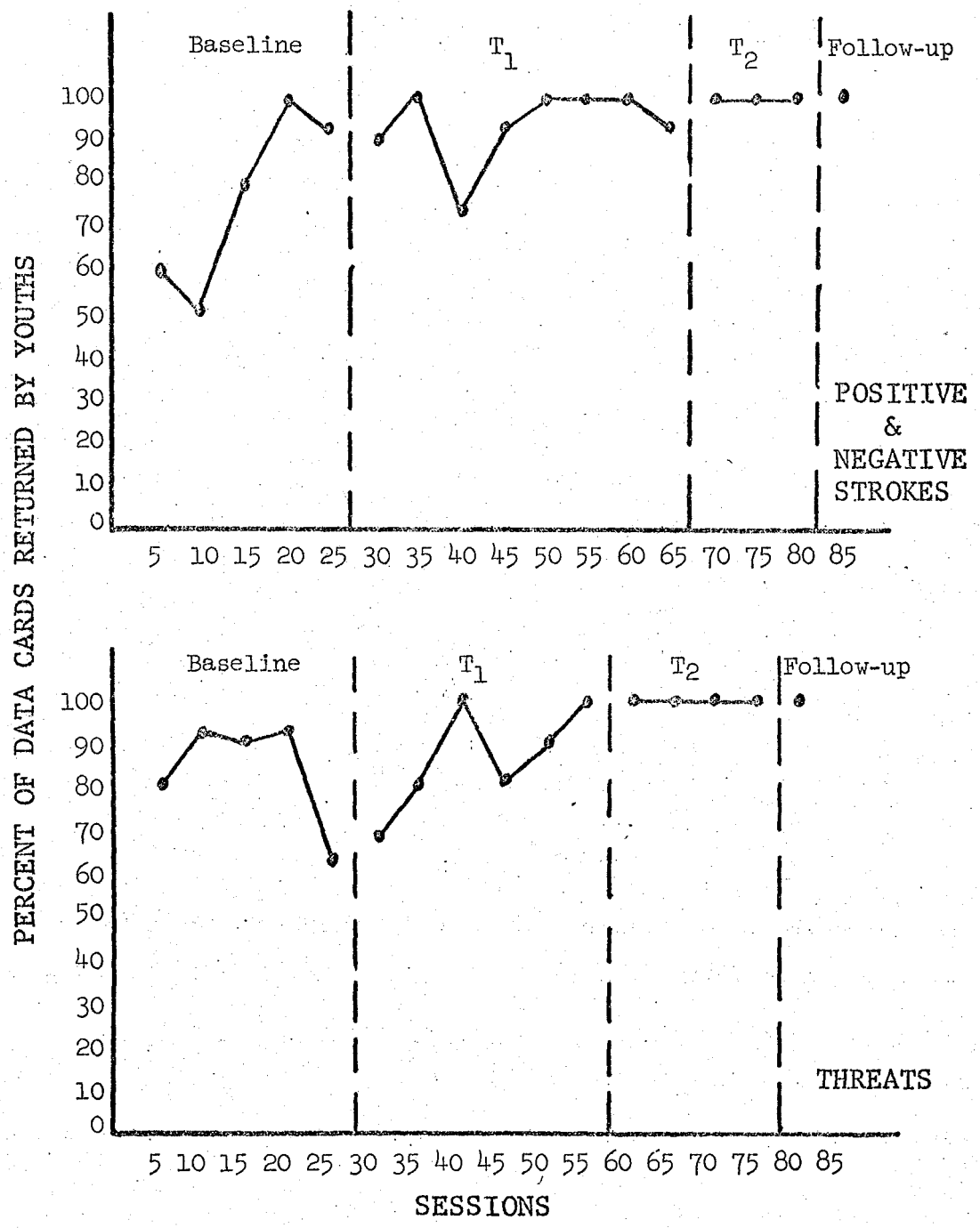

Fig. 7. Percent of data cards returned to the experimenter by all five youths throughout the study: Baseline, T_1 (one-time feedback), T_2 (feedback and reinforcement each session), and Follow-up.

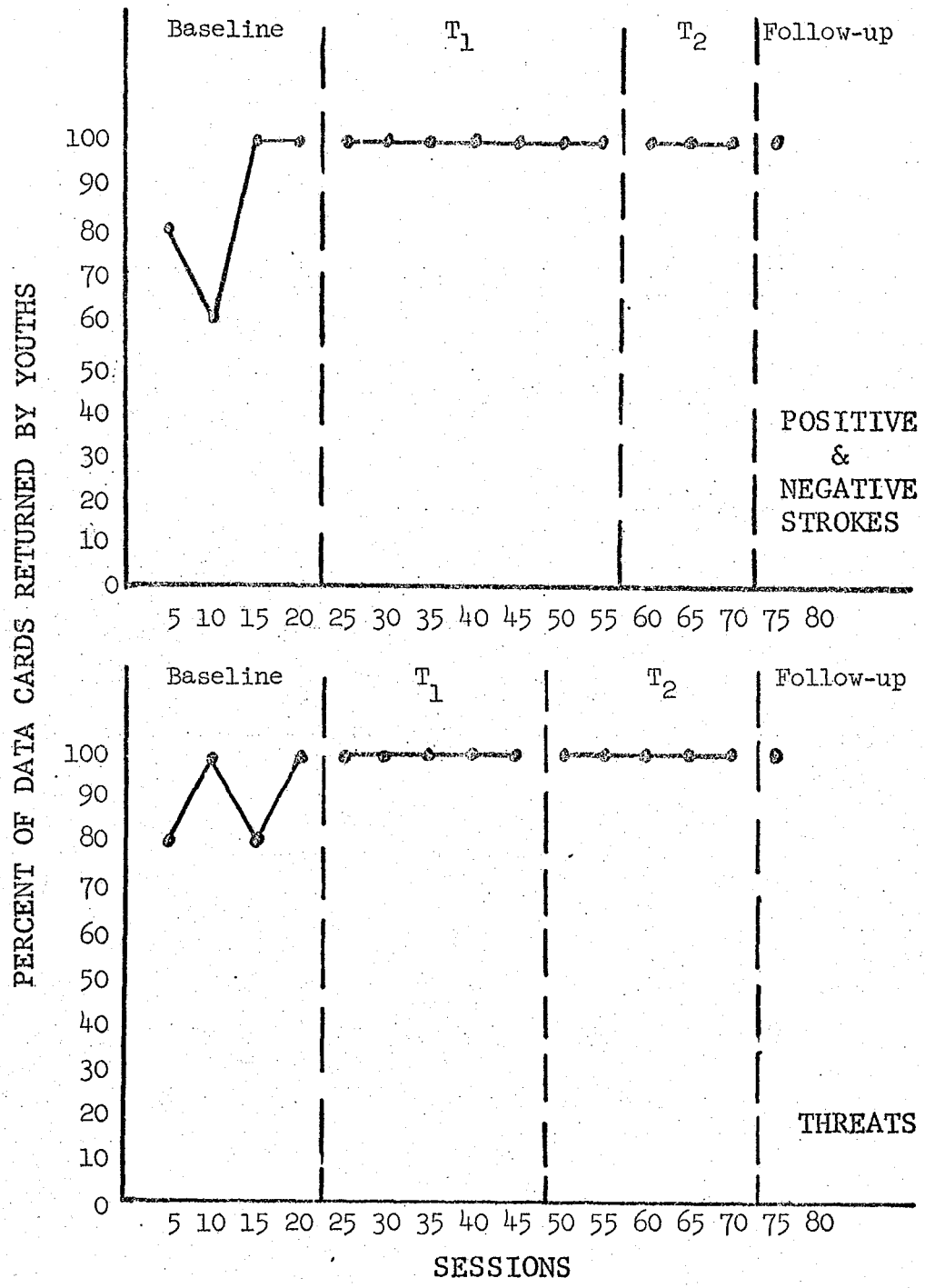

Fig. 8. Percent of data cards returned to the experimenter by the primary data collector throughout the study: Baseline, T_1 (one-time feedback), T_2 (feedback and reinforcement each session), and Follow-up.

between a threat and adult information. The youths explained to staff that a threat took the form of an "if..., then..." statement: "If you don't do something, then you will be punished", while "adult information" took the form of two statements of fact: "The rule is ____. The consequence for breaking the rule is ____."

Training youths to change their behavior in order to change the behaviors of others may be an important key to replacing delinquent behaviors with socially acceptable behavior. Werner, et al. (1975) have demonstrated that when delinquent youths were trained to respond to police officers with politeness, understanding, and cooperation, they decreased their chances of being taken into custody and of being stopped again in the future. If youths learn to exert some control over how others respond to them, the mutual behavior changes achieved might be quite long lasting. The present findings indicated that the effect of youths' interventions with staff were maintained during the follow-up phase of the study; frequencies of responses did not return to the baseline levels in most cases. Would such reciprocal behavior changes teach delinquent youths socially acceptable behaviors that are more generalizable to the natural environment? This is an area for future research.

Staff members appeared to attend more closely to their own verbal behavior as the study progressed. They tended to follow statements that might be interpreted as threatening with the words, "and that's not a threat". A subjective report from one staff member revealed that in an attempt to change his behavior following Treatment I (one-time feedback)

on strokes, he developed a rationale for being both positive and informative to youths; he reported looking for the positive, rather than the negative events and behaviors that had occurred in the day, and he reported positive events in the form of positive strokes to the youths. Thus, he was giving positive strokes that were earned, and at the same time, he was giving information to other youths regarding what they might do to earn positive strokes. Systematic investigation of this verbal approach to changing not only youths' behavior, but the behavior of others, might be an interesting area of study.

Subjective reports from staff members and volunteers on the hall indicated another side effect of the study. The youths appeared to be so busy collecting data during the structure sessions that they had little time for arguing with staff members. The sessions, some claimed, were more peaceful than before the study began. The experimenter can present no objective data to substantiate this report, but it implies that youths' data collection behaviors may be a positive alternative to other "unacceptable" behaviors.

The present findings confirm Buehler, et al's. (1966) hypothesis that youths shape and control staff behaviors. Youths used their existing behaviors consistently and systematically to demonstrate their influence on staff behavior. The fact that the staff behavior changes appeared to maintain during the follow-up phase of the study may indicate that the reciprocal changes in verbal behavior were mutually reinforcing, and therefore, more long lasting. For example, on one occasion during follow-up, two staff members preplanned a special session

where they gave "lots of positive strokes."

One variable that may have influenced the youths' behavior and participation in the study, was the sex of the experimenter. There is some question as to whether a male experimenter would have obtained the same cooperation as the female experimenter obtained from the male youths.

In conclusion, the present findings indicate that institutional youths were observed to be accurate and reliable data collectors and effective behavior change agents. Further research is needed to determine the extent to which youths may be influenced to change their behavior and the behavior of the staff, and the necessary conditions for obtaining and maintaining such reciprocal changes in behavior.

Reference Notes

1. Halfacre, J.D., Cummins, E.W., & Thompson, B.J. Teaching behavior modification to students: effects upon student and teacher behavior. Paper presented at the meeting of the American Psychological Association, New Orleans, September 1974.

2. Shunk, B.A., Dickinson, B.J., & Lutzker, J.R. The effects of student attention on the modification of a teacher's classroom smoking behavior in a correctional institution. Paper presented at the meeting of the Western Psychological Association, San Francisco, April 1974.

3. El Dorado Hall. An integrated correctional management and justice system, El Dorado Hall, O.H. Close School. Stockton, California Youth Authority, Northern California Youth Center, November 20, 1974.

4. Hartmann, D.P. Assessing the quality of observational data. In D.P. Hartmann (Chair), The quality of observational data. Symposium presented at the meeting of the Western Psychological Association, San Francisco, April 1974.

References

Berne, E. Transactional analysis in psychotherapy. New York: Grove Press, Inc., 1961.

Buehler, R.E., Patterson, G.R., & Furniss, J.M. The reinforcement of behavior in institutional settings. Behavior Research and Therapy, 1966, 4, 157-167.

Costello, J. Behavior modification and corrections. The Law Enforcement Assistance Administration, 1972. (NTIS No. PB-223-629/AS)

Campos, L. & McCormick, P. Introduce yourself to transactional analysis: A TA primer. Stockton, California: San Joaquin TA Institute, 1972.

Fedoravicius, A.S. The patient as a shaper of required parental behavior: A case study. Journal of Behavior Therapy and Experimental Psychiatry, 1973, 4, 395-396.

Feldman, R.A., Wodarski, J.S., Flax, N., & Goodman, M. Treating delinquents in traditional agencies. Social Work, 1972, 17, 71-78.

Graubard, P.D., Rosenberg, H., & Miller, M.B. Student applications of behavior modification to teachers and environments or ecological approaches to social deviancy. In R.A. Ramp & B.L. Hopkins (Eds.), A New Direction for Education: Behavior Analysis 1971. Lawrence, Kansas: Support and Development Center for Follow Through, 1971.

Karacki, L. & Levinson, R.B. A token economy in a correctional institution for youthful offenders. Howard Journal of Penology and Crime Prevention, 1970, 13, 20-30.

Sanford, D.A. An operant analysis of control procedures in a New Zealand borstal. British Journal of Criminology, 1973.

Sherman, T.M., & Cormier, W.H. An investigation of the influence of student behavior on teacher behavior. Journal of Applied Behavior Analysis, 1974, 7, 11-21.

Sloane, H.N. & Ralph, J.L. The grant dormitory: A case history. Journal of Offender Therapy, (in press).

Werner, J.S., Minkin, N., Minkin, B.L., Fixsen, D.L., Phillips, E.L., & Wolf, M.M. "Intervention Package" An analysis to prepare juvenile delinquents for encounters with police officers. Criminal Justice and Behavior, 1975, 2, 55-83.

Zimmerman, J. & Zimmerman, E. Doing your own thing with precision: the essence of behavior management in the classroom. Educational Technology, 1971, 11, 26-32.