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# Effective Supervision in Community-Based Services from the Developmentally Disabled

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# EFFECTIVE SUPERVISION IN COMMUNITY-BASED SERVICES FOR THE DEVELOPMENTALLY DISABLED

by

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# EFFECTIVE SUPERVISION IN COMMUNITY-BASED SERVICES FOR THE DEVELOPMENTALLY DISABLED

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This study investigated the effects of a supervisor training program on the subsequent use of objective measures and contingent consequences by a manager when monitoring and evaluating the performance of supervisors, and by supervisors when monitoring and evaluating the performance of direct care staff in a human service agency. Data also were collected to examine whether changes in supervisor performance produced changes in the direct care staff's use of contingent consequences for client performance and changes in client behaviors. One manager, 4 supervisors, 7 staff and 16 clients from an employment training center and a group home participated in the study. Increases in the use of contingent performance consequences were observed for all subjects at the supervisory/management level, and for six of the seven staff. Desired decreases in target behaviors occurred for 9 of 16 clients, and desired increases for 8 of 13 clients.

TABLE OF CONTENTS

Table Of Contents--Continued

Table Of Contents--Continued

APPENDICES

LIST OF TABLES

LIST OF FIGURES

# INTRODUCTION

## Statement of the Problem

### Human Service and the Mediator Model

Community agencies serving persons with developmental disabilities rely largely on the mediator model for service delivery. The mediator model entails the use of parents, therapists, direct care workers and other professionals and paraprofessionals to effect change in important client behaviors. In residential and day programs, the mediator is most often an individual employed in direct care activities at the "front-line" level. This necessitates acquisition and implementation of a variety of skills by staff to impact upon client development in an effective manner. The need for staff training and development in human service settings was recognized early in the "deinstitutionalization" era (Bensberg & Barnett, 1966), and remains an area of concern today (Reid & Green, 1990).

### Research in Staff Skill Training

Staff skills training generates a large portion of the articles published in journals that concentrate on applied behavior analysis and mental retardation (e.g., Burch, Reiss, & Bailey, 1987; Ducharme & Feldman, 1992; Hundert & Hopkins, 1992; Zlomke & Benjamin, 1983). Unfortunately, few empirical studies of staff skill maintenance over protracted periods have been done, particularly in the area of community-based human services. In a review of 30 years of behavioral staff training research, Wu and Williams (1990) analyzed nearly 100 articles and book chapters and concluded that less than 25% discussed maintenance strategies or presented data for

periods of greater than three months following intervention. Further, most of the studies that included maintenance demonstrations were conducted in large institutional settings, not community-based centers, and many included arrangements in which at least one of the authors was in a supervisory or management position.

A lack of performance data to support conclusions concerning the efficacy of training also is cited, and very few studies link staff training to client or organizationally important outcomes (Reid, Parsons, & Green, 1989; Ziarnik & Bernstein, 1982). At best, the data suggest that staff training results in small changes in behaviors immediately following training, and only for specifically trained skills.

Reid et al. (1989) suggested three reasons for unsatisfactory staff training outcomes. First, training programs may not teach the actual performance of skills to a sufficient level to engender maintenance over time in the applied setting. Second, competing contingencies and other post-training variables may conflict with the execution of trained performance. Third, conditions at the job site are typically different from the training situation and thus, do not support skill generalization. Although there are examples where organizations have implemented procedures to promote maintenance of staff behavior, clear methods for setting up such contingencies have yet to be validated (Harchik, Sherman, Hopkins, Strouse, & Sheldon, 1989). These observations indicate a need for research and demonstration projects concerning supervisory and management strategies for supporting critical staff behaviors.

## Solutions Proposed in Organizational and Applied Behavioral Literature

### Organizational Support for Staff Skill Use

Many researchers and practitioners in human services have asserted that organizational support is a necessary factor in successfully maintaining desired staff

performance over time (Burgio, Whitman, & Reid, 1983; Reid et al., 1989; Williams & Lloyd, 1992). Further, durable training effects have become increasingly important to administrators in times of rising costs and declining resources. In the 1980s, researchers began to focus on general supervisory interaction skills as an essential source of support for staff on-the-job skill use after training (e.g., Clark, Wood, Kuehnel, Flanagan, Mosk, & Northrup, 1985; Frisch, 1989; Ziarnik & Bernstein, 1982). Taking a systems-wide approach, Reid and Green (1990) and Williams and Lloyd (1992) argue that staff performance is the most important factor in determining the effectiveness of the human service delivered. In both cases the authors assert that if human service staff are to perform their duties effectively, then they must have the skills necessary to do so. Development of staff skills, however, is a necessary but not sufficient condition to ensure execution of skills during staff-client interactions; management support is required to ensure ongoing use of skills in the work environment.

## Performance Management in Private Sector Organizations

Performance management in private organizations provides a useful model for investigating and evaluating the supervisor skills essential to quality service delivery. The topic of performance feedback has generated numerous research and review papers in applied behavior analysis journals (e.g., Balcazar, Hopkins, & Suarez, 1986; Prue & Fairbank, 1981; Richman, Riordan, Reiss, Pyles, & Bailey, 1988). Prue, Frederiksen & Bacon (1978) defined feedback as "information provided to individuals about the quantity or quality of their performance (p. 216)." Balcazar et al. (1986) concluded that performance feedback to staff is a necessary component in changing on-the-job skills of employees, but is most effective when used in combination with other behavior change procedures.

In a series of investigations in academic, business and simulated laboratory settings, Komaki and her colleagues provide perhaps the most refined analysis in the literature of the use of performance feedback combinations to motivate employee behavior (Komaki, 1986; Komaki, Desselles, & Schepman, 1991; Komaki, Zlotnick, & Jensen, 1986). They began by developing the Operant Supervisory Taxonomy and Index (the OSTI) for measuring the frequency of seven categories of supervisor behavior, including providing instructions for performance to staff, monitoring staff performance, and providing performance consequences (Komaki et al., 1986). This tool facilitates analysis of both the amount of time supervisors engage in the seven categories of behavior, and the specific nature of the behaviors (e.g., feedback can be related to actual staff performance, or subjective opinions of staff performance). Results of a second study indicated that effective managers used objective performance monitors (e.g., observing a person working on a computer) up to 50% more often than managers who were ranked as "marginal" by their superiors (Komaki, 1986). No difference in the evaluation of the consequences (i.e., positive, negative or neutral), or in the overall time devoted to consequences, was found between marginal and effective managers. In a subsequent study, Komaki et al. (1991) proposed an operant model of supervision, concluding that to motivate others effectively, managers should use a combination of monitoring and contingent performance consequences. That is, by objectively monitoring the performance of subordinates, a manager or supervisor can provide informative feedback based on actual employee behaviors or outputs.

## Extending the Private Sector Model of Supervision to Human Services

Although the OSTI has not been tested in human service settings, it has been found to be sensitive in distinguishing between effective and marginal managers while incorporating subtle interpersonal interactions into the definition of performance

consequences (Komaki et al., 1986). Further, researchers and practitioners in human service settings contend that management support entails clear performance contingencies for staff, performance monitoring and evaluation by supervisors and managers, and feedback to staff regarding evaluations of their performance (e.g., Reid & Green,1990; Williams & Lloyd,1992). The OSTI, developed by Komaki et al. (1986), facilitates investigation of the amount of time managers spend monitoring staff performance and providing evaluate feedback, as well as the nature of these behaviors (e.g., whether monitoring consisted of work sampling or self reporting). The first purpose of the present investigation was to evaluate the effects of a supervisor training program designed to increase the extent to which supervisors use objective measures and contingent consequences when monitoring and evaluating the performance of direct care staff in human service agencies. This was achieved through measuring generalization of skills from the training context to on-the-job interactions with staff. Portions of the OSTI related to monitoring and providing consequences were used for this purpose. Second, the ultimate goal of changing supervisory behavior was to improve the services provided to clients by producing changes in the performance of the direct care staff. Thus, measures of performance at management and supervisor levels were collected in order to assess the generalization of manager and supervisor performance outside of the training setting. Additional data were collected to examine whether improvements in supervisor performance produced noticeable changes in direct care staff and client behaviors.

# METHOD

## Participants

### Managers and Supervisors

The study was conducted in an employment training center (ETC) and a residential facility for persons with developmental disabilities. An ETC manager, three ETC supervisors and one residential supervisor participated in the training. The subjects were three females and two males, ranging in age from 25 to 45 years old. The amount of formal education of the participants ranged from a high school diploma to a Master of Arts degree, and experience in supervisory and management positions varied from 2 to 15 years.

### Direct Care Staff

Seven direct-care staff participated in the evaluation, there were four males and three females, ranging in age from 20 to 43 years. Formal education for this group varied from a high school diploma to a four year college degree, and experience in direct care ranged from 6 months to 18 years. All were full time staff, and worked day or evening shifts.

### Clients

Sixteen clients (8 from each site), ranging in age from 18 to 64 years, with mild to profound developmental disability, participated in the evaluation. Clients had received services from the ETC or residential center from 1 to 15 years. They exhibited a variety of behaviors targeted for decrease including stereotypy, severe self-injury and

aggression. Table 1 shows subject label designations for all participants and target behaviors for client subjects. Due to availability of volunteer participants among the staff, observations were only possible for staff for three of the four supervisors (i.e., no staff associated with subject SV2 were observed).

Table 1

Subject Label Designations for All Participants and Target Behaviors for Client Subjects

| Supervisor | Staff | Client | Target behavior |
|---|---|---|---|
| SV1 | S1.1 | 1.1a | self stimulation |
| | | 1.1b | leaving work area |
| SV2 | none | 2.1a | inappropriate verbals |
| | | 2.1b | inappropriate verbals |
| SV3 | S3.1 | 3.1a | self injury |
| | | 3.1b | noncompliance |
| | | 3.1c | screaming |
| | S3.2 | 3.2a | aggression |
| SV4 | S4.1 | 4.1a | self stimulation |
| | | 4.1b | self stimulation |
| | S4.2 | 4.2a | screaming |
| | | 4.2b | self stimulation |
| | S4.3 | 4.3a | inappropriate verbals |
| | | 4.3b | self injury |
| | S4.4 | 4.4a | noncompliance |
| | | 4.4b | none |
| M | SV1 | | |

Table 1--Continued

| Supervisor | Staff | Client | Target behavior |
|---|---|---|---|
| | SV2 | | |
| | SV3 | | |

Recruitment of Participants

Participants were recruited from all levels on a volunteer basis. They (or their guardians in the case of some clients) were informed that the purpose of the study was to investigate the components of effective supervision. Each of the potential recruits was given the following information:

> We will be implementing a training program for supervisors at [your site] to study the components of effective professional supervision. Because the ultimate aim of the training program is to improve client services, we will be looking at how the training program affects the skills of the supervisors and whether changes in their skills are accompanied by changes in the way staff interact with clients and changes in client behavior. Your participation in this evaluation is voluntary. If you agree to participate, your individual data will remain confidential. None of the information collected as part of the evaluation will affect [your annual performance appraisal or your employment status with / the service you receive from your site], nor will your refusal to participate. If you agree to participate, you may withdraw at any time by contacting the researchers.

## Settings

Observation Protocol for Residential and Employment Training Sites

All sites had private offices for supervisors and meeting rooms ranging from 16 to 36 square meters where training sessions were conducted. Evaluation observations were made throughout the work and living areas of the ETC and residence. No observations were made of residential or ETC staff or ETC clients during their

scheduled break times, with the exception of those ETC clients who were targeted for change of social behaviors. All training and observation sessions were conducted at the ETC or residence.

### Residential Sites

The residential sites included two seven-bedroom townhouses, housing eight residents each. Each house had a large dining area, kitchen, living room, laundry room, and three bathrooms in addition to the private bedrooms. The townhouses were part of a three house complex, sharing a common entrance foyer and large meeting room and offices. A large yard, to which the residents had access, surrounded the complex.

### Employment Training Center

The ETC included a warehouse of approximately 2000 square meters, including a large open work area with a variety of work tables. Tables were approximately 1.5 meters wide by 4 meters long, and were typically arranged in groups of three or four in a row or a square. Client work groups comprised 10 to 30 individuals. Staff desks were arranged around the perimeter of the workshop, located close to their client work stations. The ETC contracted out to other companies for jobs including packaging, shrink wrapping, and assembly of a variety of items from nuts and bolts to clocks.

## Apparatus and Materials

### Operant Supervisory Taxonomy and Index

The Operant Supervisory Taxonomy and Index (OSTI) developed by Komaki and her colleagues (see Komaki et al., 1986) was adapted for use in this study. The OSTI comprises 7 taxonomic categories considered to be related to effective

supervision, including providing performance antecedents and consequences, conducting performance monitors, a supervisor discussing one's own performance, engaging in work related behaviors, nonwork related discussion, and solitary activities. A partial interval recording method that incorporated the portions of the OSTI (Komaki et al., 1986) related to the categories performance consequences and performance monitors was used to measure manager-to-supervisor, supervisor-to-staff and staff-to-client interactions (see Appendix A). The data form was divided into 20 intervals, each composed of 30 seconds observing time and 30 seconds recording time and will be described in a later section. Observers were five behavioral consultants, all trained to criterion in the use of the OSTI. Training involved viewing 20 minute video tapes of supervisors and staff at work and scoring the relevant behaviors using the OSTI. Tapes were scored by this investigator, and 85% agreement with this score on a minimum of three consecutive sessions was required for each observer prior to conducting on-site observation sessions. Observers wore a small earphone attached to a portable cassette player. A tape-recorded cue instructed the observer when to observe and record.

Interval Recording of Client Target Behaviors

Client target behaviors were observed using a partial interval recording device, similar to that described above. The client data form was divided into 20 intervals, each composed of 30 seconds observing time and 30 seconds recording time. The same observers and observe-record cuing tape described above were used. All subjects at all levels were observed for two 20-minute periods per week each for up to 34 weeks.

## Behavior Definitions and Interobserver Agreement

### Managers, Supervisors, and Direct Care Staff

Contingent performance consequences from managers to supervisors, supervisors to staff, and from staff to clients included statements related to performance, and met the following criteria: (a) consequences were delivered directly to the person about his/her own performance; (b) consequences were contingent if the relevant staff/client behavior occurred immediately prior to the consequence (within the observation interval), or the supervisor or staff providing the consequence referred specifically to some earlier behavior or product immediately prior to the feedback; and (c) consequences were based on directly observing the performer or inspection of data records, video tapes of subordinate performance or other permanent records describing the behavior or performance of a subordinate. In order for an interval to be scored as including performance-contingent consequences, both an objective monitor (e.g., work sampling) and a related contingent consequence (e.g., a supervisor says to a staff in the employment training center "I looked at your production report, your group is keeping pace very well.") had to present in the same interval. Performance consequences could be evaluated as positive (e.g., "Your group did a very good job on that last batch."), negative (e.g., "You need to be better organized when the residents arrive home."), or neutral (e.g., "I see you turned in the report on time.") and be scored as contingent.

### Client Target Behaviors

Target behaviors were defined for each individual according to their Individual Program Plan (IPP), and included a variety of behaviors targeted for decrease (e.g., aggression, self injury, or oppositional behaviors, see Table 1 for a list of target behaviors). On-task behavior was defined for each individual based on the demands of

their setting (i.e., work tasks assigned at the ETC or residence) and appropriate leisure activities relative to their IPP and setting (e.g., engaging in art activity, watching television, assembling puzzles).

### Interobserver Agreement

Interobserver agreement (IOA) was calculated on 22% of manager, supervisor and staff observations, and 30% of client target and on-task observation sessions. IOA observations could not be conducted unobtrusively (i.e., without the knowledge of the primary observer) as it was necessary for both observers to be cued by the same audio tape. A second earplug was spliced into the primary observer's portable cassette player that allowed the second observer to sit or stand up to five feet away from the primary observer. Each observer used a metal clip board with a 8.5" by 11" flip-up top that blocked their data sheet from the view of other observers.

## Experimental Design and Conditions

### Manager and Supervisor Baseline and Training Schedule

Supervisors were exposed to the training program at staggered times during the study. Subjects SV1 and SV2 received training after five weeks of baseline, subjects SV3 and SV4 received training after ten weeks of baseline, and subject M received training after 16 weeks of baseline. After training, subjects SV1 and SV2 were observed for an additional 29 weeks and subject SV3 for 24 weeks. Subject SV4 dropped out of the study 13 weeks following training due to being transferred to another job site, and subject M was observed for an additional 18 weeks. Staff and client subjects were observed for the duration of the participation of each of their supervisors. For subject SV4's staff and clients, that constituted 23 weeks, and for the remainder of the subjects, 39 weeks.

During baseline observations, no specific instructions were provided for supervisors. Supervisors conducted their regular supervisory practices during this period. No instructions, other than those described in the informed consent, were given to staff or clients at any point during the study.

## Manager and Supervisor Training Protocol

### Group Training Sessions

Following baseline, each supervisor participated in a three hour training session wherein they received a didactic presentation outlining the needs for goal setting and feedback in individual sessions with staff. This presentation emphasized the benefits of negotiating goals between supervisors and staff, the behavioral components of a feedback meeting, and objective monitoring of staff performance. After the presentation, subjects viewed a video tape that described the form and content of performance feedback in human service settings. The training was designed and conducted by two independent consultants who were not involved in data collection or analysis for this study. The video described and demonstrated 10 components of a formal supervision meeting, with examples and nonexamples of desired supervisor behaviors, focusing on objective performance monitoring and contingent feedback to subordinates. The 10 components are described in Appendix B. Each segment of the video demonstrated an example and nonexample for each of the components. Participants were required to identify which key supervisor behaviors occurred on a video segment, and whether they were executed correctly or incorrectly. After the participants discussed their answers with the group, the video demonstration was shown again, this time with the key behavior and the correct answer highlighted. This procedure was repeated for each of the remaining components. The participants were provided with a checklist outlining the 10 components and a recording form for use in

supervision meetings. They were then instructed to conduct regular meetings with their respective staff members, using the checklist as a guide.

Individual Follow-up Sessions

A follow-up meeting with the trainers was conducted for subjects SV1, SV3, and SV4 at the time that subject M, the site manager, was trained. Subject SV2 was not available for this follow-up meeting. Subjects SV1, SV3, and SV4 provided the trainers with a minimum of three video tapes each of supervision sessions conducted with their staff subjects after their initial training sessions. The trainers viewed the tapes and judged whether each of the 10 component behaviors were exhibited, by checking off a supervisor's meeting checklist. At the follow-up session the trainers summarized supervisor execution of the meeting procedure, as viewed in their video-taped meetings with staff. Trainers provided feedback to supervisors on the extent to which they followed the meeting checklist format, and the appropriateness of their performance with respect to those components.

# RESULTS

## General Statement of Results

In general, behavior changes in desired directions were observed for all subjects at the supervisory/management level, for 6 of 7 staff subjects, for 9 of 15 clients on target behavior measures, and for 8 of 12 clients on on-task measures. Further analysis of the findings follows.

## Interobserver Agreement

The overall percentage agreement score was calculated as (# of agreements/# of intervals observed) X 100. IOA data were collected for 132 of 601 observation sessions (22%) on manager, supervisor and staff behavior for the OSTI data. IOA on intervals scored for occurrences of contingent performance consequences averaged 96% and for intervals scored for occurrences and nonoccurrences the average was 99% agreement. IOA data were collected for 259 of 850 observation sessions (30%) for client target and on-task behaviors. Average agreement for occurrences only was 95% and for occurrences and nonoccurrences was 98%. For all IOA data, the median and the mode were 100%.

## Use of Contingent Performance Consequences

### Manager to Supervisors and Supervisors to Staff

Figure 1 shows the frequency of contingent performance consequences delivered by the supervisors and the manager to staff and supervisors, respectively. In general, all participants at this level increased their use of contingent consequences,

although variability on this measure was large following training. During baseline, only 0-50% of sessions across subjects show more than 5% use of contingent consequences, compared to 63-94% of the observation sessions following training. No change in supervisor behavior on this measure is apparent in Figure 1 after the point where the manager was trained and subjects SV1 and SV3 had their follow-up meetings. Table 2 shows individual changes on this measure, and indicates that subjects increased the number of sessions in which they delivered contingent consequences during more than 5% of the observation intervals by 18-69% from baseline to intervention.

Staff to Clients

The use of contingent performance consequences delivered by staff to clients is shown in Figure 2. Change at this level is less apparent than at the supervisor-manager level. Baseline levels of contingent consequences were variable across subjects. Similar patterns in staff behavior to those found at the supervisor-manager level can be seen when comparing the frequency of sessions in which delivery of contingent consequences was observed during greater than 5% of the observation intervals. During baseline, 40-100% of sessions across subjects show greater than 5% use of contingent consequences, compared to 66-100% of observation sessions following training of the supervisors. No change in staff behavior on this measure is apparent after the point where the manager was trained and subjects SV1 and SV3 had their follow-up meetings. Table 2 shows that 6 of 7 staff subjects increased the number of observation intervals in which contingent consequences were delivered by 12-47% from baseline to intervention, while one staff decreased by 12%.

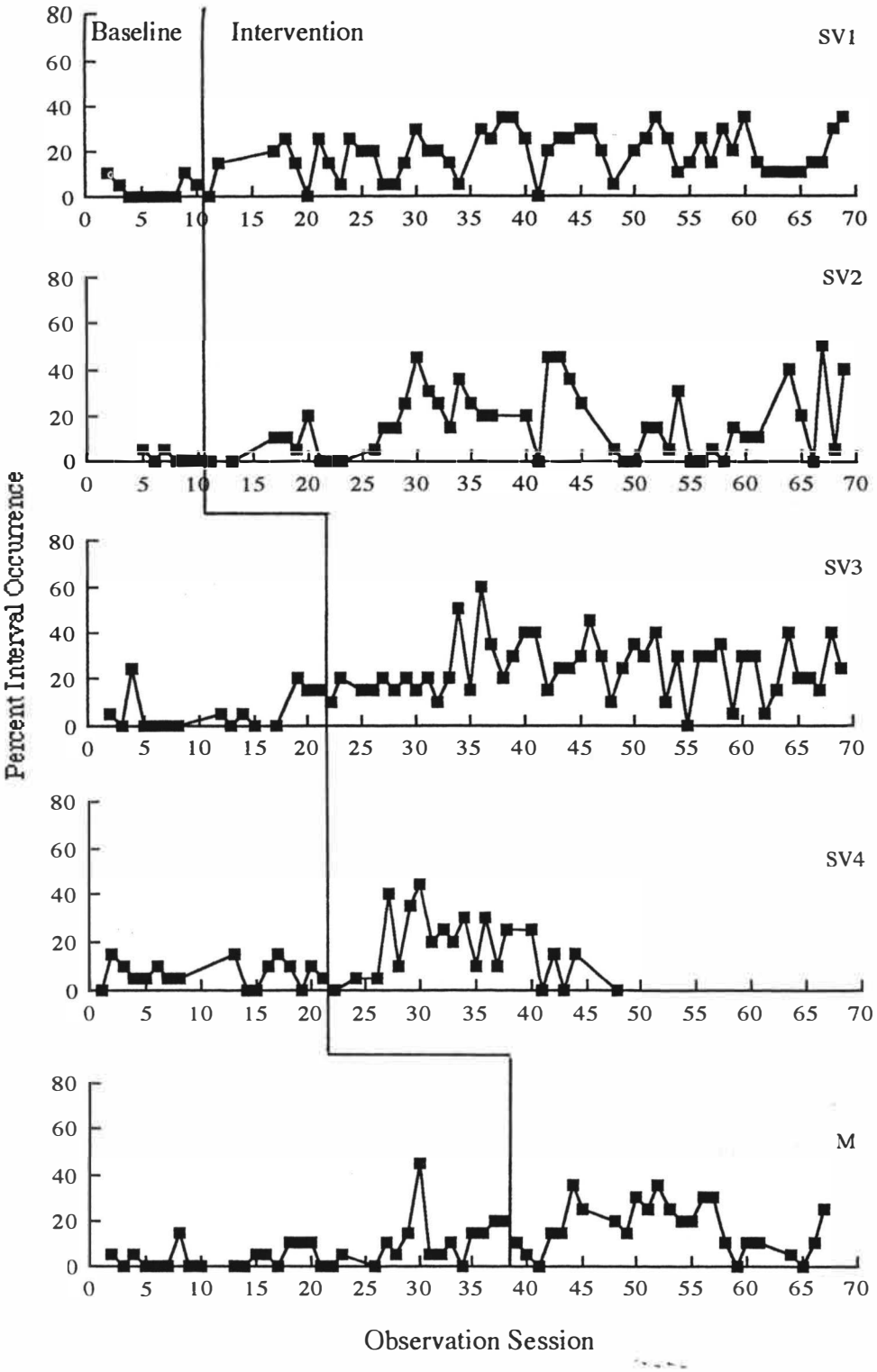



Figure 1. Use Of Contingent Performance Consequences By Supervisors During Interactions With Staff, And By The Site Manager During Interactions With Supervisors.

Table 2

Percent Of Sessions In Which Subjects Delivered Contingent Consequences (Manager To Supervisors, Supervisors To Staff, And Staff To Clients) During More Than 5% Of The Observation Intervals

| Subject: | % of sessions in baseline | % of sessions after training | Amount & direction of change |
|---|---|---|---|
| SV1 | 20 | 85 | +65 |
| SV2 | 0 | 63 | +63 |
| SV3 | 25 | 94 | +69 |
| SV4 | 50 | 68 | +18 |
| M | 36 | 83 | +47 |
| S1.1 | 40 | 66 | +26 |
| S3.1 | 71 | 91 | +20 |
| S3.2 | 42 | 87 | +45 |
| S4.1 | 88 | 100 | +12 |
| S4.2 | 100 | 88 | -12 |
| S4.3 | 50 | 89 | +39 |
| S4.4 | 47 | 94 | +47 |

Frequency of Target and On-task Behaviors for Clients

The mean frequencies of target and on-task behaviors during baseline and intervention conditions across clients are shown in Figures 3 and 4. Although some changes in these behaviors in desired directions can be seen, they are not consistent across subjects. For those clients associated with subjects SV1, SV2, and SV3, and their staff members, 6 of 8 show desired decreases in overall levels of target behaviors ranging from 4-22%. For clients associated with subject SV4, who dropped out of the study, only 3 of 7 clients showed slight behavior change in the desired direction,

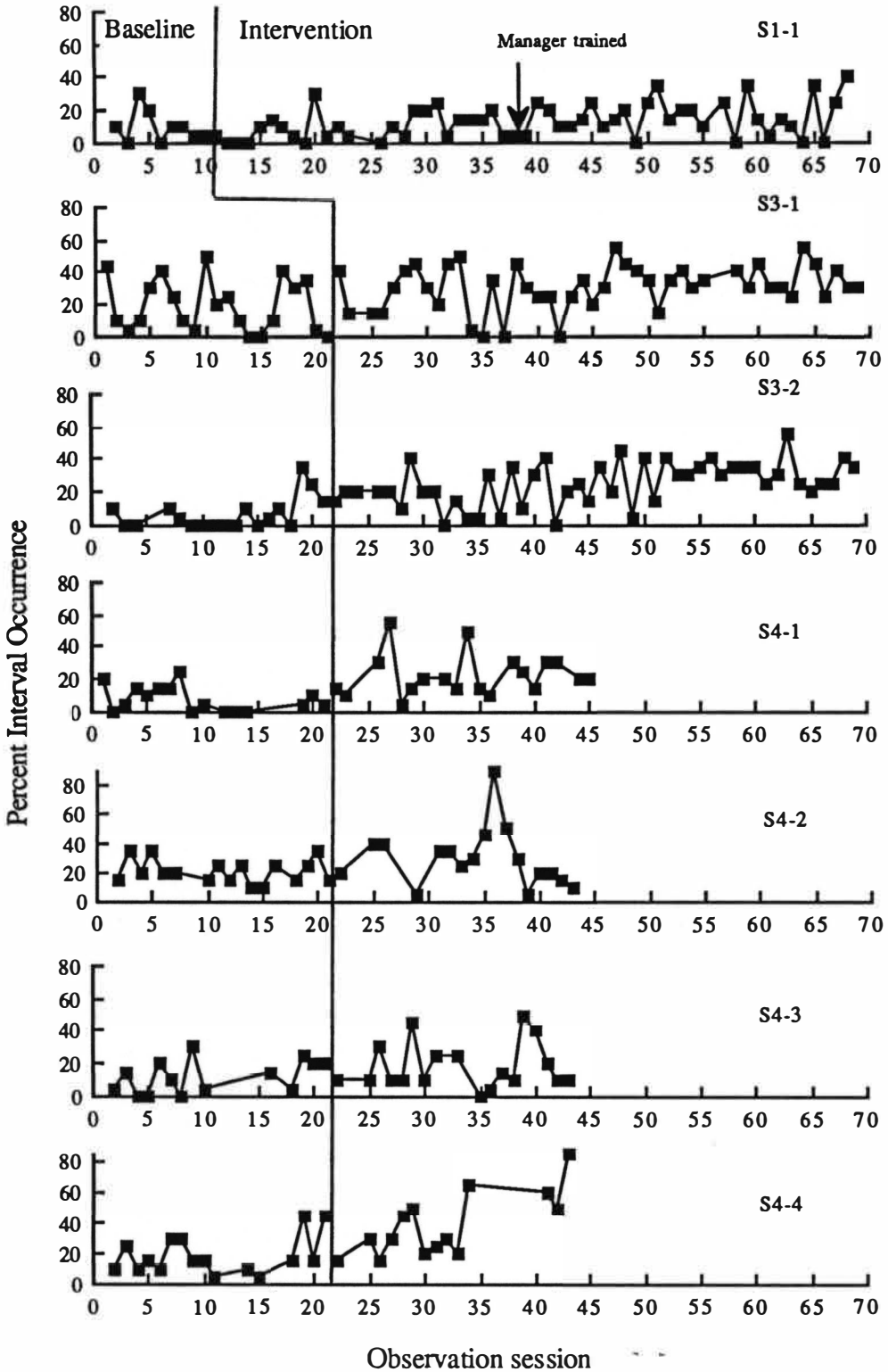



Figure 2. Use of Contingent Performance Consequences By Staff During Interactions With Clients.

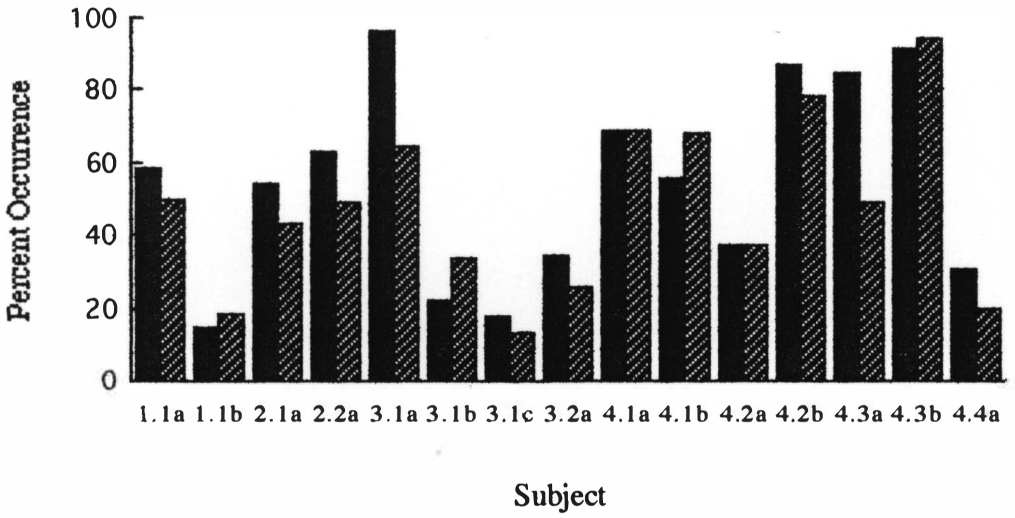



Figure 3. Mean Percent Interval Occurrence of Target Behaviors During Observation Sessions Across Clients.

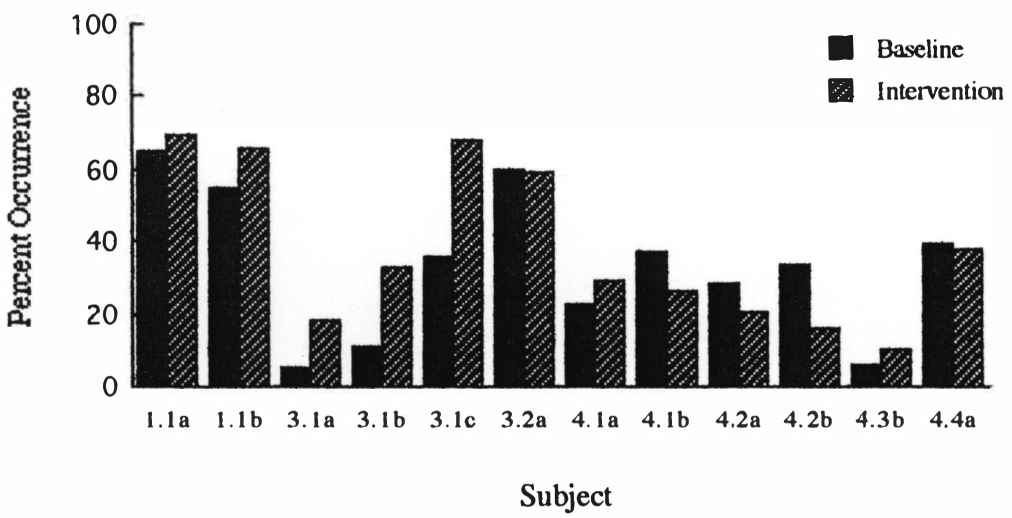



Figure 4. Mean Percent Interval Occurrence of On-task Behaviors During Observation Sessions Across Clients.

ranging from 6-24%. A similar pattern was found for on-task behaviors. Five of 6 clients associated with subjects SV1, SV2, and SV3 showed some increase in measures of on-task behavior, ranging from 4-24%. Only 3 of 6 clients for subject SV4 showed increases in on-task behavior, ranging from 3-5%; the remaining clients for this supervisor showed deficits in on-task behavior following supervisor training.

Figures 5 and 6 show representative client data graphed on a session-by-session basis. One subject at the client level for each of the four supervisors was chosen for display in these figures on the basis that they represented typical performance for their client group. As can be seen in Figure 5, the frequency of target behaviors for subjects 1.1a, 2.1a, and 3.1a decreased from baseline to intervention conditions. Variability in these measures within and between subjects can be seen, with all three subjects returning to baseline levels at points throughout the intervention condition. Subject 4.2a showed an initial increase in target behaviors following the intervention, followed by a decreasing trend in target behavior occurrence. Figure 6 shows desired increases in on-task behaviors for subjects 1.1a and 3.1a after supervisor training, but again the variability is large with behavior levels occasionally returning to those found in baseline. On-task behavior data were not collected for client subjects associated with subject SV2. On-task behavior showed an overall decrease from baseline to intervention, with a larger proportion of sessions with 0% on-task intervals observed during intervention (i.e., 0% on-task was observed for 3 of 18 sessions in baseline compared to 8 of 20 sessions following the intervention).

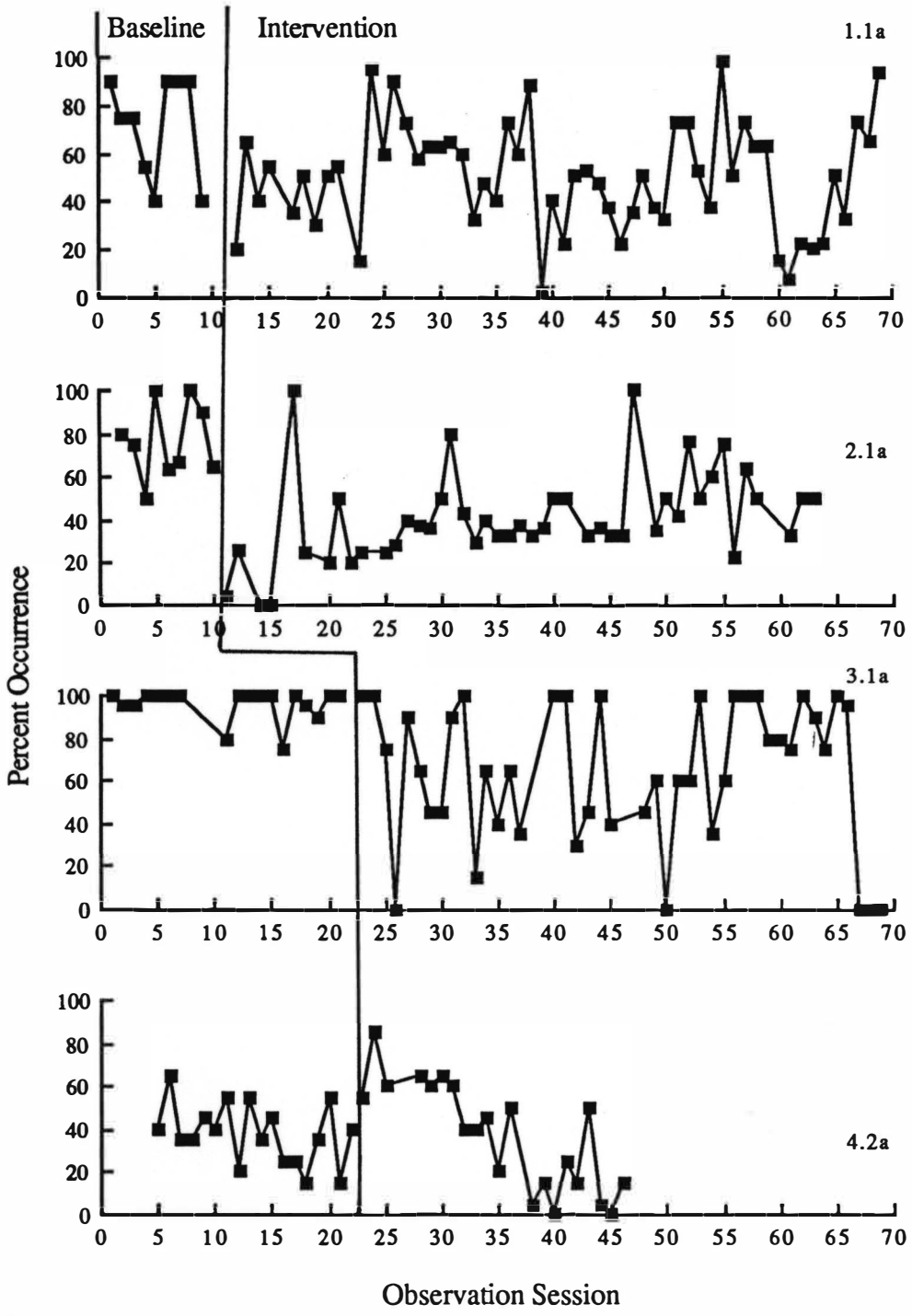
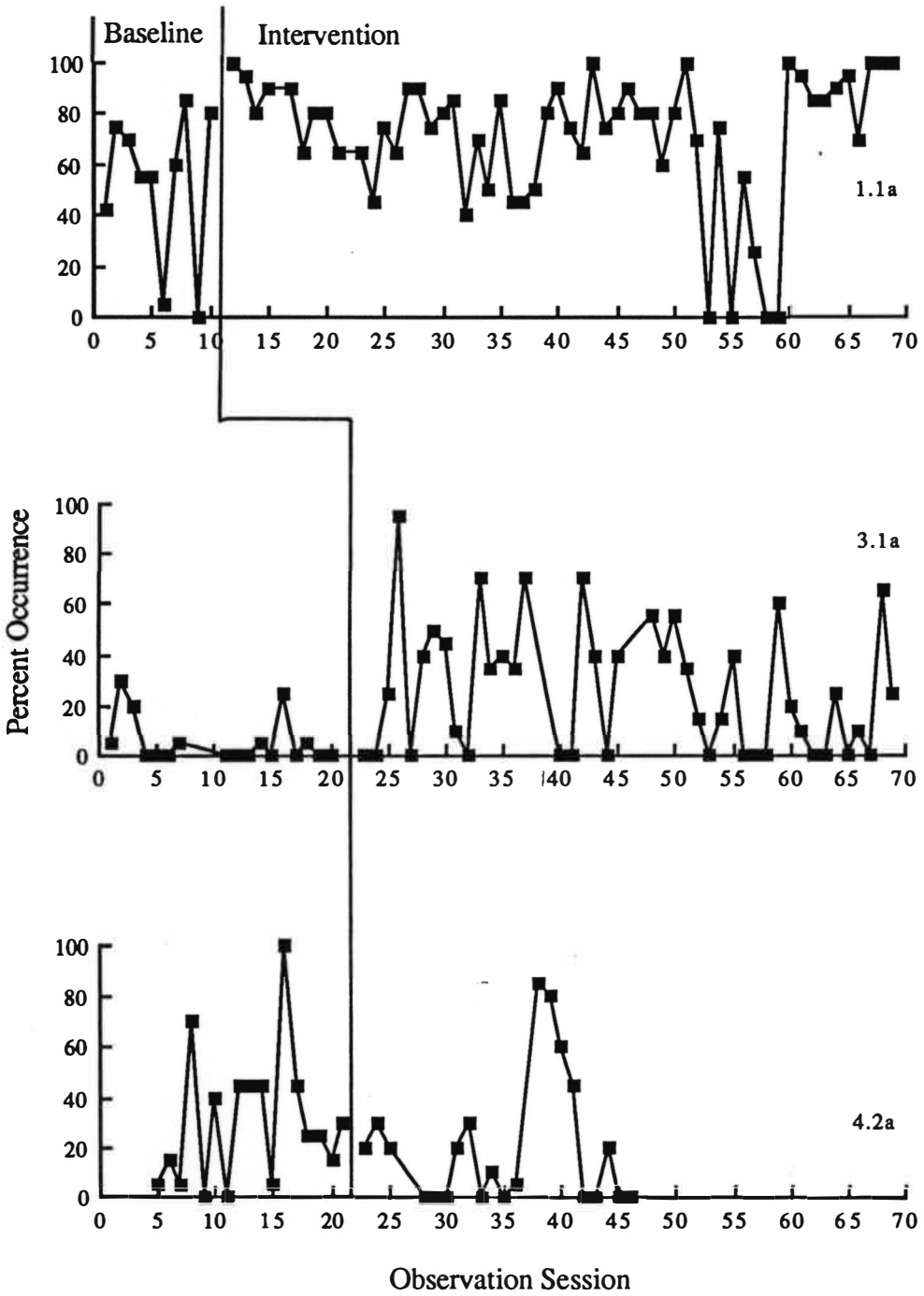



Figure 5. Percent Interval Occurrence of Target Behaviors During Observation Sessions Across Representative Clients.




(Note: clients associated with staff under the supervision of subject SV2 were not targeted for change in on-task behavior).

Figure 6. Percent Interval Occurrence of On-Task Behaviors During Observation Sessions Across Representative Clients.

# DISCUSSION

## General Issues and Links to Previous Research

### Magnitude of Results and Exposure to the Independent Variable

Recent investigations in the area of human service delivery (Reid et al., 1989; Reid & Green, 1990; Williams & Lloyd, 1992) suggest that staff performance is a critical factor influencing the quality of human service provided, but that few studies link staff training programs to outcomes critical to organizational survival. This study illustrates how a cost-effective supervisor training intervention can influence the supervisory process with effects that, in some cases, influenced performance at other levels in the organization. The intervention, requiring approximately five hours per supervisor or manager trained and the use of a structured meeting format, produced changes visible in the work environment, both in the performance of subjects trained and subjects supervised by those who were trained (i.e., the staff and client levels). Increases in the delivery of contingent performance consequences to subordinates was associated with positive, albeit variable, behavior changes in the recipients of the consequences for 3 of 4 supervisors. Komaki (1986) pointed out that effective managers and supervisors in business settings were more likely than their less effective counterparts to use contingent consequences that were founded on objective work monitoring (i.e., 2.9% of the supervisor's time compared to 2.0% of time respectively). In the present study, after training, subjects SV1, SV2, and SV3 provided more contingent consequences to staff, who in turn provided more of the same to clients. Subject SV4, however, provided more contingent consequences to staff but with highly variable effects on the amount of contingent consequences

provided by staff to clients. The results associated with supervisors and their respective staff indicate a relationship similar to that suggested by Komaki et al. (1991). That is, when a manager or supervisor gathers information on performance and follows up with feedback to the performer, performance of the subordinates will be affected positively.

## Variability and Overall Behavior Levels

That variability in behavior levels for most subjects is apparent should be qualified in terms of the amount and types of other duties involved in managing, supervising and delivering direct care to developmentally disabled clients. Each level of the organization, in addition to direct interaction with subordinates and/or clients, is required to engage in a number of administrative duties. Because of these additional duties, and the procedure of randomly sampling observation periods, one would not expect to find stable data on delivery of contingent consequences across observations. Observing supervisors and staff only when they are interacting with staff and clients, respectively, may provide finer-grained analyses of the amount and nature of effects of contingent consequences in community human service agencies. Such research would contribute to a useful molecular analysis of the relationship between contingent performance consequences and important client outcomes.

As Komaki (1986) pointed out, her subjects were rated as effective or marginal by their superiors (i.e., a subjective judgement), which raises the question of the external validity of her study. In the present investigation, effective supervision was directly measured by staff and client outcome data. In the case of subjects SV4 and M, the frequencies of occurrence of contingent performance consequences were less than those observed in subjects SV1, SV2, and SV3 after training. Subjects SV1, SV2, and SV3 were all observed to deliver consequences on average during more than 20% of all

intervals observed (range=20-25%), while subjects SV4 and M were observed delivering contingent consequences on average during less than 20% of all intervals observed (range=17-18%).

The levels of contingent consequence delivery by supervisors in this study were above the average 5% level indicated by Komaki and her colleagues (Komaki et al., 1986; Komaki, 1986; Komaki et al., 1991). Although it is generally agreed that performance feedback is an essential part of human service delivery, it is not clear how much is enough (e.g., Balcazar et al., 1986; Reid & Green, 1990, Reid et al., 1990, Ziarnik & Bernstein, 1982). The present study was conducted in a human service setting where client behavior change is the outcome of interest, which may require more interaction and feedback from supervisors to produce a quality outcome than in business or academic settings. More research in the area of human service delivery is needed to determine optimal levels of supervisory feedback.

Subject Reactivity to Observers

A concern with research into staff management is the potential reactivity of subjects to observers (Greene, Willis, Levy, & Bailey, 1978; Parsons, Schepis, Reid, McCarn & Green, 1987; Repp & Deitz, 1979). Reactivity was possible in the current study in that observers were in sight of subjects at all times, and occasionally with a second observer for agreement purposes. The fact that no subjects were aware of what the observers were looking for, or which staff or clients in the immediate vicinity were being observed at any time, may have provided some control for reactivity. Ivancic, Reid, Iwata, Faw, and Page (1981) conducted a staff management study using overt and covert observations. Their results indicated that the presence of observers for data collection did not produce uniform changes in staff behavior. They did, however,

suggest that the development of more sophisticated observation techniques and controlled studies on reactivity effects are warranted.

## Suggestions for Future Research

Inconsistencies in client behavior changes may have been a result of more than one factor. It is possible that increases in contingent performance consequences from supervisors to staff do not impact upon important client behaviors. A more plausible relationship, however, is that the client behaviors observed during this study were not directly targeted for change by supervisors and staff during their supervision meetings, thus one would not expect large changes in behavior to occur. Although Individual Program Plans were used to identify target behaviors for client subjects, no formal behavior change programs were in place for any of the clients involved in the study. The current study could be expanded upon by adding contingencies for setting specific performance goals for each staff and client which would be followed for change associated with supervisor and staff performance changes following training.

A further expansion might include incorporating a feedback loop to the participants at all levels. The current study observed subjects' performance on the job, but did not provide information to them on the performance measures being collected. This was done to avoid confounding the issue of generalization of training effects with that of performance feedback effects. A focus on client activity is a positive aspect of the current study that can be improved upon by adding an internal feedback loop such that the organization can respond to the data at the staff, supervisory and management levels in terms of critical client measures. In order to effect changes that contribute to quality human service delivery and organizational survival, behavior analysts need to focus increased research efforts on performance monitoring at the direct care level in

combination with policy level contingencies that support ongoing staff use of behavior change skills.

# Appendix A

## Operant Supervisory Taxonomy and Index (Revised)

Date: _____ Time: _____ Location: _____

Subject code: _____ Observer: _____ IOA: yes / no

Second observer: _____

intervals

| OSTI category | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| objective monitor | | | | | | | | | | | | | | | | | | | | |
| subjective monitor | | | | | | | | | | | | | | | | | | | | |
| contingent consequence | | | | | | | | | | | | | | | | | | | | |
| noncontingent consequence | | | | | | | | | | | | | | | | | | | | |

Objective monitor: subject observes a work sample, permanent product, or a data record

Subjective monitor: subject gathers performance data through self report of staff member or secondary source

Contingent consequence: supervisor provides consequence based on an objective monitor

Noncontingent consequence: supervisor provides consequence based on subjective monitor

## Appendix B

## Form and Content in Performance Feedback in Human Service Settings: Ten Components of a Formal Supervision Meeting

Form and Content in Performance Feedback in Human Service Settings: Ten Components of a Formal Supervision Meeting

1. Support--Effectively support participation in the performance feedback process.

2. Describe--Accurately describe relevant staff performance.

3. Verify--Verify that the performer understands and agrees with your description and evaluation of performance.

4. Empathy (evaluation)--Identify and reduce/encourage any negative/positive emotional responses on the performer's part to the description/ evaluation.

5. Goals--Allow the performer to establish relevant and reasonable future performance objectives.

6. Negotiate--Where necessary, allow for adjustment, editing, and negotiation of the goals without dictating to the performer.

7. Empathy (negotiation)--Identify and reduce/encourage any negative/positive emotional responses to the editing and negotiation process.

8. Product--Ensure that permanent product prompts will be available to assist the performer in attempting to engage in new performance goals/ activities.

9. Record--Provide an overall description of performance that emphasizes progress/accomplishment of the performer.

10. Reward--Effectively reward participating in the performance feedback process.

Appendix C

Human Subject Institutional Review Board Approval

Human Subjects Institutional Review Board

Kalamazoo, Michigan 49008-3899

# WESTERN MICHIGAN UNIVERSITY

Date: May 18, 1992

To: Laura Methot

From: Mary Anne Bunda, Chair Mary Anne Bunda

Re: HSIRB Project Number 92-05-14

This letter will serve as confirmation that your research protocol, "Evaluation of a supervisory training program in a human service setting for the developmentally disabled" has been approved after expedited review by a subcommittee of the HSIRB. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the approval application.

You must seek reapproval for any change in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

xc: Dickenson, Psychology

Approval Termination: May 18, 1993

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