

Receptive Communication in Psychiatric Nurse Supervision^{1,2}

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Methods for studying interpersonal relationships have focused largely on verbal content. The technique utilized in this research, conjugately programmed closed-circuit television, records both verbal content and operant looking, listening and talking responses by members of dyadic relationships. The technique examined patterns of operant interpersonal communication—looking, listening and talking behavior—generated by three student nurses and their supervisor. Results indicated that changes in the students' looking and listening rates over 10 weeks were positively related to the supervisor's evaluation of her relationships with them, that the supervisor's menstrual cycle altered her communication with the students, and that significant verbal content often temporarily decreased looking and listening behavior. Implications for research in consulting and psychotherapy are discussed.

During the past 25 years there have been numerous applications of *free-operant methods* to the behavior of small animals (Skinner, 1938, 1959). These methods, which emphasize environmental control and direct measurement of behavior, have been progressively refined for application to normal and pathological, individual and social human behavior (e.g.: Lindsley, 1956; Azrin, 1958; Long, 1959; Orlando & Bijou, 1960; Ferster, 1961; Cohen, 1962; Ellis, 1962; Weiner, 1964).

The development of *conjugate reinforcement* has allowed examination of more complex and more socially and clinically relevant behavior than was possible with episodic reinforcement (Lindsley, 1957, 1961). In conjugate programming of reinforcement, the subject's rate of respond-

ing directly and immediately controls the intensity of a continuously available stimulus. This technique is highly sensitive to moment-to-moment fluctuations in the reinforcement value of a wide variety of stimuli (Lindsley, 1962a, 1963). It is particularly useful with narrative stimuli which cannot be broken into segments for episodic presentation without a significant loss of reinforcement value.

Conjugately programmed *closed-circuit television* has especially facilitated analysis of interpersonal communication (Lindsley, 1962b; Nathan, Schneller, & Lindsley, 1964). Social interactions can be programmed as continuously available direct functions of operant responding. This technique is called *Televised Reciprocal Analysis of Conjugate Communication (TRACCOM)*.

Both *receptive* and *transmissive communication* can be measured using TRACCOM. In receptive communication, each subject responds in order to "bring in" or receive his partner's voice and picture. In transmissive communication, a subject re-

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Each subject had two footswitches (operanda) which she operated to see and hear her partner. By a single press of one of the switches, a subject briefly illuminated the television screen in front of her and saw her partner momentarily. Pressing at intermediate rates produced faint images on the screen. By pressing at a high rate (over 120 responses per minute), the subject maintained her partner's image on the screen at maximum brightness. If a subject failed to respond for about two seconds, her partner's image faded from the screen. By pressing the other foot-switch, a subject controlled in the same way the intensity of sound coming over a loudspeaker. Thus, by pressing at a high rate, a subject heard her partner's talking at maximum intensity.

These looking and listening responses of each subject were automatically and continuously recorded on separate counters and cumulative response records. Because the brightness of the image on each television screen and the sound intensity coming from each loudspeaker were direct functions of the rates of responding, each single cumulative record indicated both rate of responding and stimulus intensity at any given moment.

Each subject's vocal responses were filtered through a voice-operated relay and digitally recorded on additional counters and cumulative recorders. Each subject's talking was also recorded on one channel of a two-channel audio tape recorder for later content analysis.

Results and Discussion

During supervisory TRACCOM sessions, both student and supervisor evaluated the student's professional work on the hospital wards. Sessions between student and friend consisted primarily of discussions of extra-hospital topics—boys and dating.

Interession Supervisory and Conversational Communication

Although the three supervisory relationships shared common purpose and physical surroundings, records of the operant com-

munication behavior of the three dyads differ markedly. Figures 2 through 7 show the rates of looking, listening and talking, session-by-session, for each dyad. Week-to-week changes in communication between the supervisor and each of the three students can be compared with communication during the same weeks between each student and her friend. To facilitate inter-dyad and intra-dyad comparisons, each graph is plotted to the same scale and contains a reference line at 5,000 responses per hour.

Figure 2 summarizes communication between student NF 55 and the supervisor. The student's looking and listening rates increased markedly, especially over the first three sessions. The greatest change recorded was this student's increase from 4,250 listening responses per hour in the first supervisory session to 14,750 responses per hour in the last. Both subjects maintained a moderate and fairly consistent rate of talking over the 10 sessions.

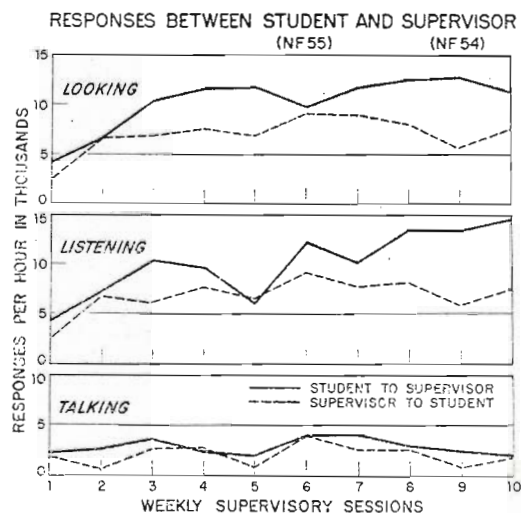


Fig. 2. A mutually growing supervisory relationship with more interest shown by student.

Figure 3 summarizes conversational sessions between the same student (NF 55) and her friend. In this relationship also, the student increased her rates of looking and listening over the 10 weekly sessions and especially increased her listening rate

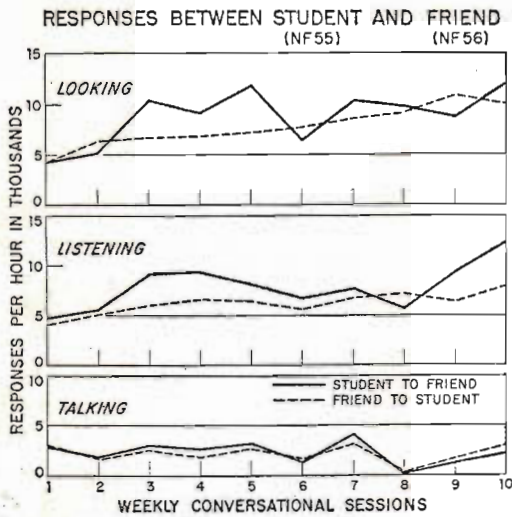


Fig. 3. A mutually growing conversational relationship showing balanced interest as both girls increased their looking and listening rates.

in the last two sessions. Except for the eighth session, in which little talking occurred, talking remained at a moderate level from session to session. The student's listening rate also dropped in the eighth session, indicating a lack of interest in the conversation rather than an interesting but slow conversation.

Looking and listening rates of the supervisor (Fig. 2) and NF 55's friend (Fig. 3) also increased over the 10 weeks. The increases in the supervisor's looking and listening rates were particularly marked. Talking rates by supervisor and friend remained at moderate levels except in the eighth session between student and friend (Fig. 3), where little talking occurred.

Figures 4 and 5 differ markedly from Figs. 2 and 3. Student NF 57's response rates to look at and listen to the supervisor did not increase over the 10 weekly sessions, and her looking rate even showed a slight decrease during the period (Fig. 4). However, the supervisor's looking and listening rates did increase during the 10 weeks. In NF 57's relationship with her friend, neither subject significantly increased her looking or listening rate through the 10 sessions (Fig. 5). Talking

behavior in both relationships changed little (until the tenth session in Fig. 5).

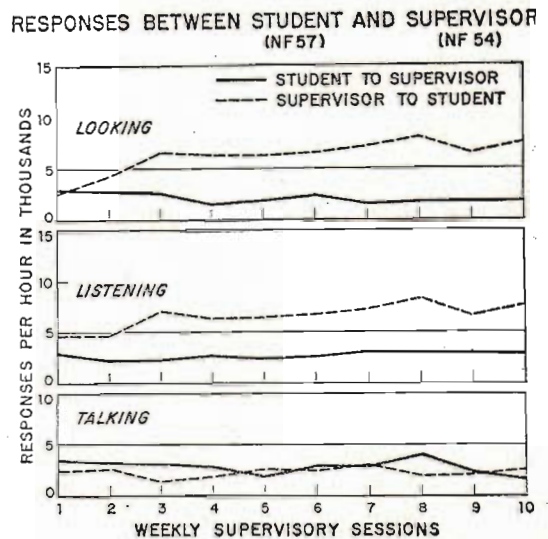


Fig. 4. A supervisory relationship showing growth and high interest in supervisor's behavior but none in student's behavior.

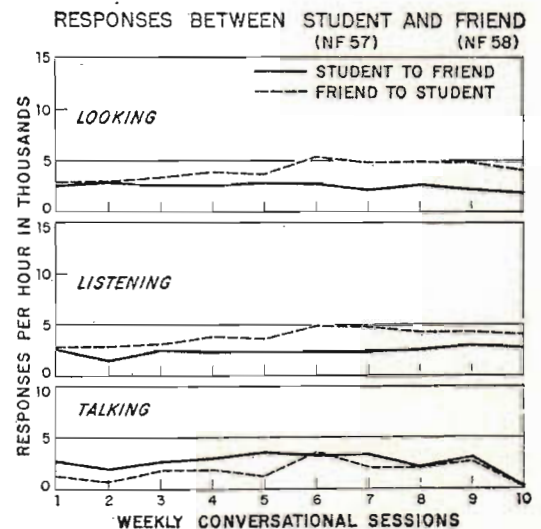


Fig. 5. A stable conversational relationship showing no growth and low interest over 10 weeks.

Figures 6 and 7 show that student NF 59 increased her rates of responding to look at and listen to her friend more than she did to communicate with her supervisor. However, both supervisor and friend

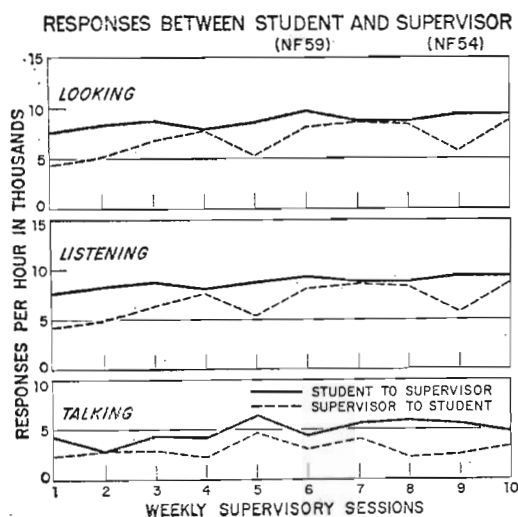


Fig. 6. A supervisory relationship with more growth in supervisor's behavior than in student's, which was dominant and high throughout.

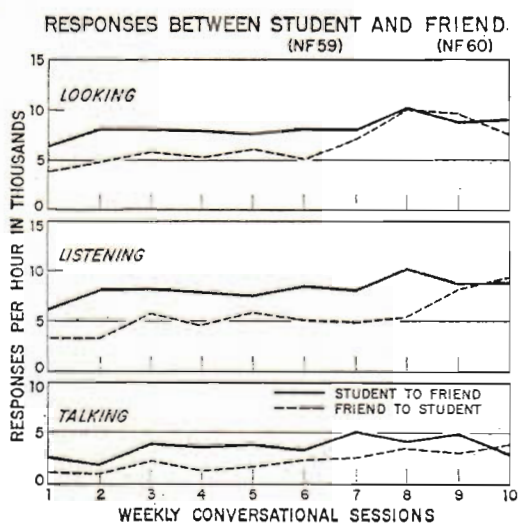


Fig. 7. A mutually growing conversational relationship with higher initial interest by one girl but high, balanced interest at end of 10 weeks.

increased their communication responses more during the 10 weeks than did student NF 59 in either relationship. Graphs of talking in Figs. 6 and 7 show that NF 59 talked at consistently higher rates to the supervisor than to her friend—and that she talked more to her partners than they did to her. In other words, she dominated the conversation.

Following are excerpts from the supervisor's final evaluations of the three supervisory relationships. Her evaluations included both an estimation of technical progress made by the students in dealing with psychiatric nursing problems and an evaluation of the intensity and significance of each supervisory relationship to both its members. At no time prior to making these evaluations had the supervisor seen or been informed of the looking and listening records.

1. *Supervision of NF 55* (See Fig. 2): "I had much stronger and warmer feelings toward her than toward the other students. This can be explained partly by my response to her obviously strong dependency needs. . . . I arranged for her to see a psychiatrist during her fifth week. [Note drop in student's listening rate in this fifth session.] The sessions to this time were on a very personal level and the intensity of our relationship had increased rapidly. The sessions after this time continued with greatly increased rapport but centered more around patient issues."
2. *Supervision of NF 57* (See Fig. 4): "This relationship developed very slowly and with little change. . . . My own reactions in the relationship were often of boredom. This became stronger as I realized more and more that there was little change taking place in our relationship. The boredom perhaps was a reaction to the lack of success I was having in the relationship. I do think that the experience had some impact on her and that minimal growth occurred."
3. *Supervision of NF 59* (See Fig. 6): "Supervision with this student was an enjoyable, interesting and relatively easy experience. . . . I felt that our relationship did not really have any climax but merely stabilized gradually and remained steady throughout. . . . Her response to me reinforced an awareness of mine when she commented on the fact that she felt supported by me as contrasted to other situations she had been in at other times."

Before this study began, each student-supervisor dyad was a potentially dynamic relationship in which the "reinforcement value"³ of one subject to the other had not reached its limit. Since the student-super-

³The best measure of the value of an event to an individual is the rate at which he will perform a task to acquire it.

visor relationships were new, the reinforcing value of the partner's visage and voice should have increased as the relationship developed. Therefore, the looking and listening rates of student and supervisor should have increased more markedly during the ten-week study than those of student and friend. These latter conversational relationships, because they existed well before the study, were thought to be stable and hence unlikely to develop further.

These predictions were not borne out in the results. We had predicted that the operant records of the three supervisory relationships would be more similar to each other than to the operant records of their counterparts (in this case, the conversational relationships). The results show, instead, that each student's supervisory and conversational relationships were more like each other than they were like any of the other relationships. Apparently, both supervisory and conversational relationships had equal potential for change.

Supervisor's Operant Communication Behavior

Figure 8 compares the supervisor's rates of looking, listening and talking with her three supervisees. It indicates that the supervisor's looking and listening rates increased during all three relationships and that these rates were highest with NF 55 more often than they were with either of the other two students. In addition, the graphs reflect marked decreases in the supervisor's looking and listening rates during the fifth and ninth sessions with all three students. Her talking behavior with the students was similar except in the fifth session, when a wide disparity among the three is apparent.

The supervisor's recorded operant behavior with the three students (Fig. 8) brings out several important points. The first is that her subjective evaluation of the three relationships parallels her operant behavior in them. Her overall response rates to look and listen to NF 55 were higher

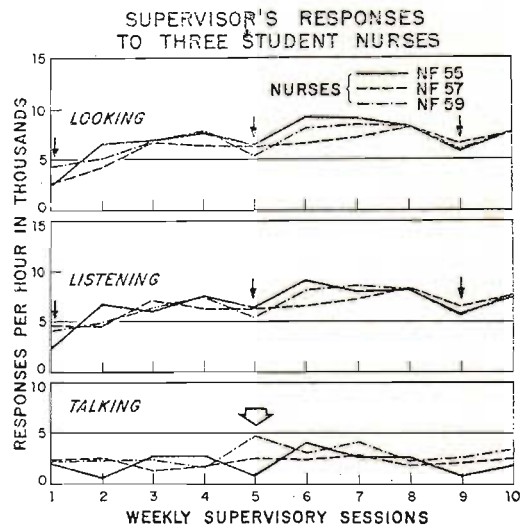


Fig. 8. Marked decreases in supervisor's looking at and listening to all three students in the first, fifth and ninth weeks—correlated with her menstruation (marked by small arrows). The supervisor's talking behavior became disparate in the fifth week (large open arrow).

than with the other two students. This finding serves to validate TRACCOM indices of relationship intensity. It also demonstrates objectively that a supervisor's presumably equivalent relationships with her students can often be subjectively skewed.

In addition, Fig. 8 draws attention to marked decreases in the supervisor's looking and listening during all three supervisory sessions in the fifth and ninth weeks. Since none of the students showed marked changes in operant behavior during these sessions, the supervisor's decreases were not due to the students' behavior or to general environmental variables. When the supervisor was asked when she had last menstruated and the length of her menstrual cycle, she reported that she had menstruated through the first, fifth and ninth weeks of the study. The sensitivity of this laboratory technique in recording changes in interaction between *two* people when *one* has menstruated is surprising. We know of no other method that can record such subtle changes in interpersonal communication. The divergent rates at

which the supervisor talked to the students during session 5 could also have been a function of menstruation. Perhaps the increase in the supervisor's rate of talking to NF 59 occurred as a function of her reduced rate of talking with NF 55 earlier in the week. Perhaps stress, attendant upon maintaining close relationships during menstruation, intensifies compensatory behavior such as this.

Intersession-Intrasession Comparisons

Student NF 55 and Supervisor: Extremely variable patterns of intrasession responding, characterized by alternating periods of fast, moderate and slow rates, paralleled the unevenness of the student's intersession communication pattern. In addition, the supervisor judged this relationship dy-

namic and "meaningful," and it yielded TRACCOM records which showed marked increases in responding by both student and supervisor.

Students NF 57 and NF 59 and Supervisor: Stable patterns of intrasession responding by student and supervisor to look and listen were paralleled by minimal intersession variability. In addition, both relationships were judged relatively stable by the supervisor in her subjective evaluation of them and yielded TRACCOM records which showed minimal overall change through the 10 sessions.

Correlation with Verbal Content

Figure 9 shows the detailed changes in NF 55's moment-to-moment looking at and listening to her supervisor.

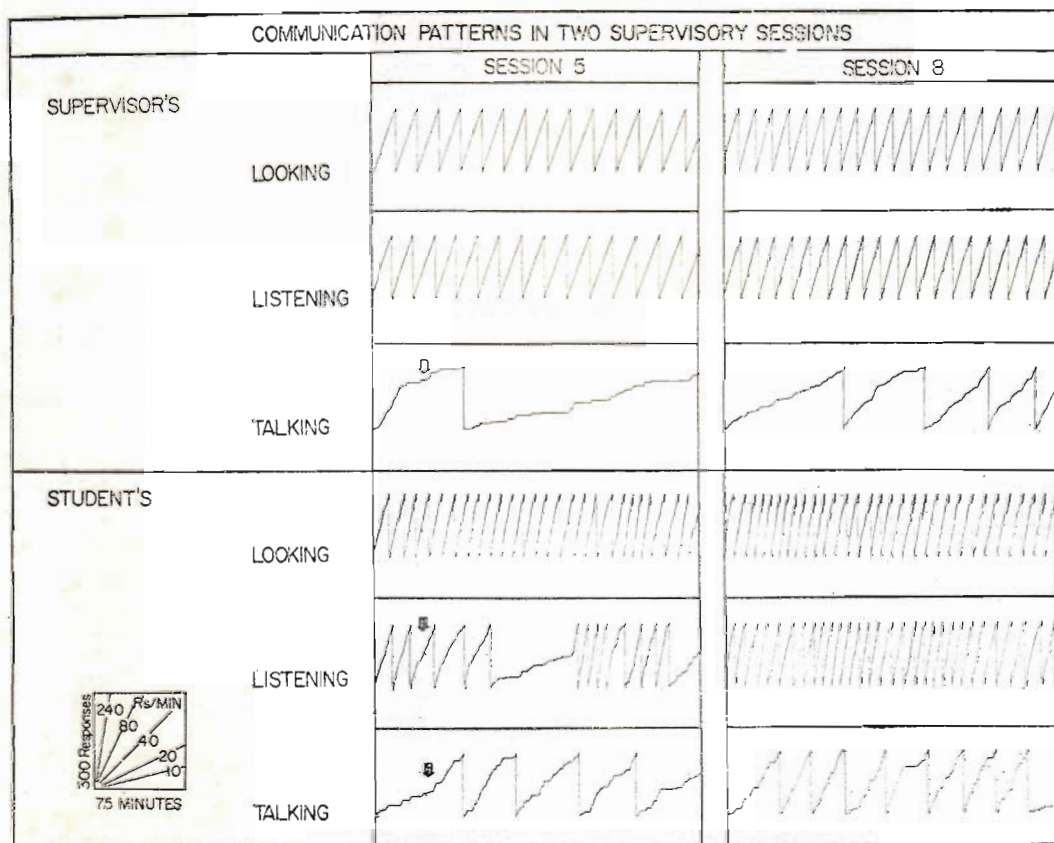


Fig. 9. The supervisor's patterns of communication during the fifth and eighth sessions with NF 55 are very similar, while the student's communication behavior varies greatly. The arrows mark the point where the supervisor suggested that the student see a psychiatrist.

Session 5 was chosen because it represents NF 55's behavior from the third through fifth session and because it demonstrates the sensitivity of TRACCOM to verbal content in communication. Arrows in Fig. 9 mark the point in session 5 that the supervisor suggested to the student that she see a psychiatrist because her emotional difficulties were interfering with her training. Immediately following this, the supervisor's rate of talking decreased and remained low for the rest of the session. The student's listening rate immediately decreased and became more variable, while her talking rate increased markedly and remained at high levels through the remainder of the session. Approximately five minutes later, the student virtually stopped listening to the supervisor for six minutes. Variable rates of listening concluded the session.

Conclusions and Suggestions for Further Research

Both supervisor and students indicated that the *required operant responses and closed-circuit television did not interfere with the process of supervision*. The supervisor's observation that her relationship with NF 55 was among the most significant and intense she had ever had with a supervisee further supports this conclusion.

Subjects' *operant responses to look and listen changed in time independently of each other*, demonstrating that looking and listening are independent communication modalities. Investigation of the relationship between these modalities and the course, progress, intensity and content of interpersonal communication should be undertaken.

Changes in talking rate are independent of changes in looking and listening or changes in intensity of a relationship. This finding conflicts with a clinical notion that frequency of talking by a patient in psychotherapy and the intensity of the therapeutic relationship are positively correlated. The fact that looking and listening rates correlated with the supervisor's evalu-

ation of relationship intensity and that talking rate did not, emphasizes the need to consider more than verbal content and frequency of speech in fully evaluating interpersonal relationships and communication.

TRACCOM can characterize *important differences in communication relationships* by recording subjects' differential patterns of responding to look at and listen to their partner. Further parametric research with this method might identify characteristic patterns of communication by which a variety of normal and psychopathological teams could be identified. The differential effects on communication relationships of changes in verbal content, activity and identity of partner, goal and length of relationship, and composition of communication teams can be studied.

Since TRACCOM can sensitively record changing patterns of communication in developing interpersonal relationships, it might serve as a *source of external criterion validity for changes in relationship intensity*. Such a measure might permit the therapist or supervisor early in prospective relationships to evaluate their potential for significant change and thereby increase his selection efficiency. In addition, TRACCOM might also evaluate or predict progress in continuing psychotherapy and supervision. To illustrate: Marked increases in communication continued through all 10 weeks of NF 55's supervisory relationship. The operant communication measures show clearly that the entire growth potential of this relationship had not been achieved at its conclusion. For this relationship to have provided each of its participants a maximal growth experience, one or more of the following changes should have been made: (1) Lengthening the duration of each supervisory session, (2) Scheduling more than 10 supervisory sessions during the 10 week course of supervision, (3) Extending the course of supervision beyond 10 weeks.

The method's *sensitivity to significant verbal content in communication* could aid both the researcher and clinician (see also:

Lindsley, 1962b; Nathan, Schneller, & Lindsley, 1964) both by providing feedback to the clinician on a patient's problem areas and by offering the researcher a new criterion measure against which to judge content categories. In such ways, with such methods, researcher and clinician alike will benefit from the laboratory.

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