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MODIFICATION OF EXTREME SOCIAL ISOLATION BY CONTINGENT SOCIAL REINFORCEMENT

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Two socially isolated patients were placed on a program where social reinforcement from staff members was made dependent on social interaction with other patients or staff members. This procedure was imposed in a setting where only limited control was possible. The level of social interaction and a concomitant alternate behavior in each patient was increased when the contingency for social reinforcement was imposed. The study provides another example of the efficacy of social reinforcement where there is little control over other reinforcers. Implications for use of similar procedures to increase generalization in the community are discussed.

Many recent studies of operant conditioning treatment for severe psychological disorders have made use of tokens that could be used to purchase meals, beds, and other events and have been conducted on wards where much control was possible (Ayllon and Azrin, 1965; Ayllon and Azrin, 1969; Ayllon and Haughton, 1962). However, initial efforts at operant conditioning treatment made effective use of social reinforcement (Ayllon and Michael, 1959), and more recently, the ubiquity of unscheduled social reinforcement has been implicated as a powerful source of reinforcement for maladaptive behavior in the typical psychiatric hospital (Gelfand, Gelfand, and Dobson, 1967).

The present study attempted to modify the social interaction behavior of two extremely isolated patients on a psychiatric ward where only limited control was possible and where the only reinforcement employed was contingent social reinforcement.

METHOD

Subjects

Two adult male patients at the Veteran's Administration Hospital, Birmingham, Alabama, were used. Subject 1 was a 37-yr-old Negro diagnosed chronic undifferentiated schizophrenia. He had a long history of a psychiatric disorder, part-time employment, or no employment. He had few contacts with members of the opposite sex and was generally socially isolated. Before admission, he began to have grand mal convulsions that were unresponsive to low doses of anti-convulsant medication. He was admitted to the hospital primarily because of the seizure disorder. Throughout the experiment he underwent various diagnostic procedures and was maintained on anti-convulsant, and tranquilizing medication.

Subject 2 was a 38-yr-old Caucasian male diagnosed as chronic undifferentiated schizophrenia with a peripheral vascular disorder with eitology undetermined. He had an 8-yr history of psychiatric disorder with symptoms of hallucinations, frightening dreams, feelings of impending loss of consciousness, fear of crowds, few contacts with members of the other sex, and general social isolation. Throughout the experiment, he was maintained on tranquilizing medication.

Apparatus

Social interaction patterns were recorded on mimeographed data sheets and by Lafayette model 99-9031 multi-channel counters.

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Procedure

Social behavior was defined as "talking to, working with, or playing with another patient or staff member at any time during the 2-min sample period." It was measured by calculating the percentage of the 12 daily samples during which social interaction was observed. Thus, if during six of 12 samples, a subject was observed interacting, his per cent response would be 50%.

A baseline of 13 days of social interaction was recorded for S-1 and a 17-day baseline was recorded for S-2. In addition, social interaction patterns of several selected patients were observed to gather normative data for socialization in patients considered not socially isolated by the psychiatric treatment team. Reliability measures were taken periodically on each subject as well as on some other selected patients to insure agreement on the response measure. Reliability was assessed by two independent observers taking simultaneous samples throughout the day. It was expressed as per cent agreement as to whether the response did or did not occur during the simultaneous sample periods. Typically, five simultaneous samples were gathered per day during several days of the baseline period, and then, if reliability was good, only occasionally during the reinforcement procedure.

After relatively stable frequencies of social interaction were observed, the approval of the nursing assistants and other staff members was made contingent upon social behavior. Thus, staff members would reinforce social behavior by "going in close proximity to, looking at, nodding to, and talking with the patient in an approving manner."

After relatively high rates of social interaction were observed during the approval-contingent procedure, alternate baselines were observed for a second response. After new baselines were determined, and while maintaining relatively high levels of social interaction, the social approval was also made dependent upon the second class of behavior.

Because most of S-1's socialization took place in a combination dayroom-music room, the alternative behavior of "being in the music room" was selected. It was hoped that the approval and attention for being in the music room would increase the likelihood of socialization. Being in the room was defined as "the patient having more than 50% of his body across the threshhold of the music room." A baseline for this behavior was observed for 17 days and then the social approval of the staff was made contingent upon its occurrence.

Much of S-2's socialization occurred when he was in a small recreation room, which housed a pool table. This alternative behavior of "being in the pool room", similarly defined as for S-1, was selected for 21 days of baseline observation and later contingent social reinforcement.

Recording

Recording of social interaction responses was done by taking twelve 2-min time samples. The samples were prescheduled twice a day to insure that a total of 12 samples could be observed daily. Only rarely were fewer than 12 samples taken, but no samples were possible during subjects' occasional weekend passes.

RESULTS

Inter-observer reliability consistently ranged between 88 and 100% agreement for each subject with a modal value of 100%.

Results of time samples made on selected patients not considered to be socially isolated ranged between means of 43% and 66% social interaction per 12 daily time samples.

The data for S-1 are summarized in Fig. 1. The mean frequency of social interaction for S-1 during baseline was 16%. Thus, in only 16% of all time samples recorded during the baseline period were social interactions observed. During the approval-contingent procedure, this frequency increased to twice baseline level and was maintained throughout at an overall mean frequency of 39%.

The mean frequency during baseline of "being in the music room" was 10%. This level increased to a mean of 16% during the approval-contingent procedure, administered while maintaining social interaction.

Data for S-2 are summarized in Fig. 2. This mean frequency of interaction during baseline was 18%. This rose and was maintained at a relatively high level during the reinforcement-contingent period, averaging 30%. The baseline mean frequency for being in the pool room was 5%. This rose dramatically during the first few days of the reinforcement procedure and then leveled off at an average of

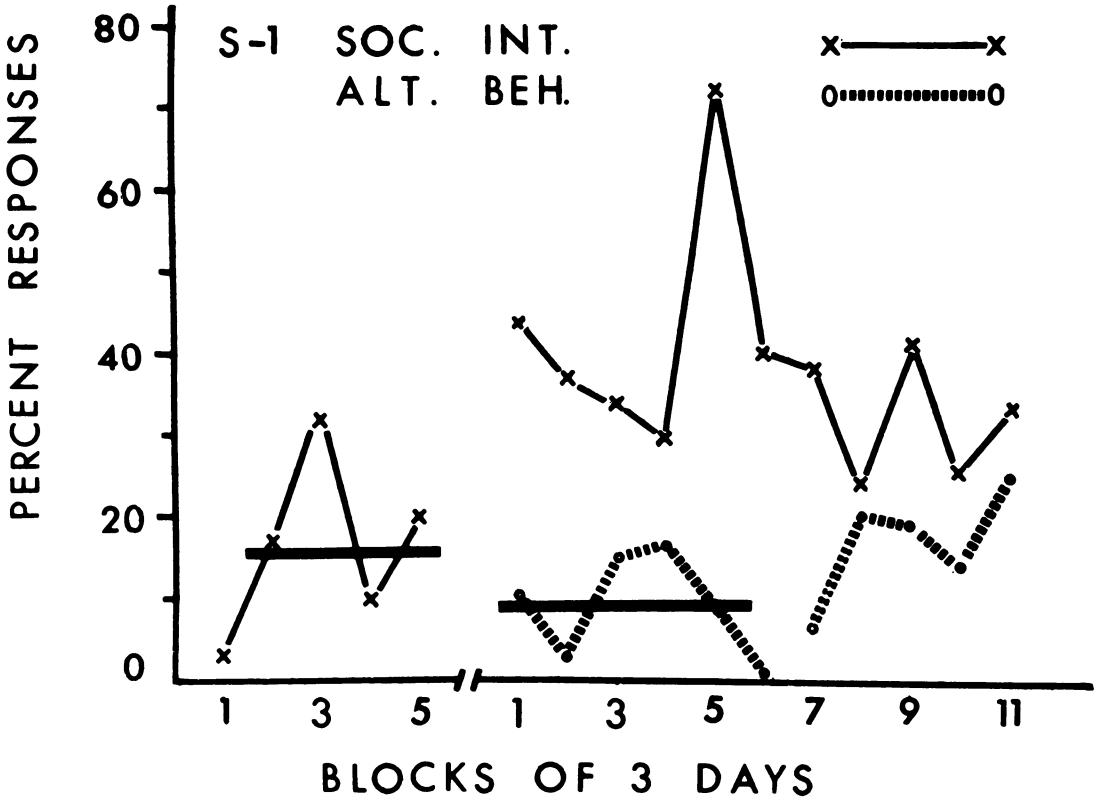

Fig. 1. Mean per cent social interaction and alternate behavior for Subject 1 observed in twelve 2-min time samples per day averaged over three days.

20%. This increase in the frequency of being in the pool room is actually four times greater than baseline.

Informal observations indicated that there were other changes in the subjects' behavior that were not reflected in the social interaction measure. Both subjects were described as increasing their initiation of social interaction with staff and especially with nursing assistants who made observations and delivered reinforcement. For S-2 it seemed that one nursing assistant may have become a discriminative stimulus for initiating verbal behavior. For S-1, informal observations not only suggested an increase in social interaction but also significant changes in other social behavior. For example, during baseline he rarely interacted with Caucasian patients on the ward, and he seemed to be fearful and timid even with the few Negro patients with whom he had contact. However, after the contingent-approval condition he was reported to be forceful and sometimes even demanding in his interactions with staff members and he interacted with most all patients regardless of race.

DISCUSSION

This study demonstrated the efficacy of contingent social reinforcement in modifying extreme social isolation behavior in two psychiatric patients. Moreover, this behavior was modified in a setting where only limited control was possible, *i.e.*, where patients were free to leave the ward several hours during the day and where most activities were not contingent upon appropriate behavior. The present results are consistent with other recent research which continues to demonstrate the efficacy of social reinforcement in varied settings where only limited control is possible, for example (Buell, Stoddard, Harris, and Baer, 1968; Hopkins, 1968; Madsen, Becker, and Thomas, 1968).

The effect of social reinforcement observed by Gelfand *et al.* (1967) and demonstrated in this study and other recent research, would

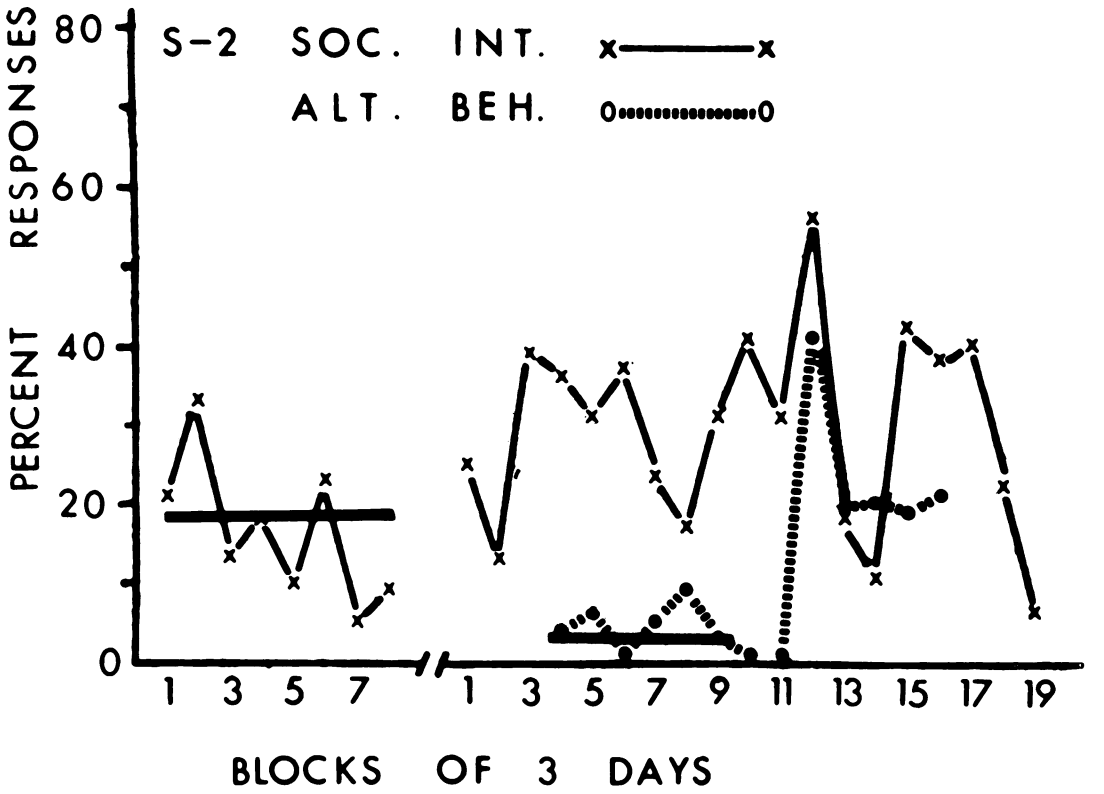

Fig. 2. Mean per cent social interaction and alternate behavior for Subject 2 observed in twelve 2-min time samples per day averaged over three days.

seem to be extremely important because it is social reinforcement that probably maintains much interpersonal behavior in the community. Thus, utilization of social reinforcement in treatment could increase the probability of generalization of adaptive behavior to the community where similar reinforcers and contingencies exist. Even in token economy treatment programs (Ayllon and Azrin, 1968; and Schaefer and Martin, 1968) where much greater control over reinforcers is possible, the utilization of contingent social reinforcement during the period before a patient's release could increase generalization of treatment effects. Patients would be leaving the treatment setting after exposure to reinforcement conditions and contingencies that more closely approximate those in the community.

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