Social Learning for Chronic Mental Inpatients

*by Shirley Glynn and
Kim T. Mueser*

Abstract

With chronic institutionalized psychiatric patients, an intensive social learning program resulted in greater increases in adaptive functioning, reductions in bizarre behavior, less prescribed medication, and over 98 percent of patients being successfully discharged into the community. The social-learning program was more cost-effective than custodial hospital care, and nonprofessional staff were able to apply the treatment with a high degree of competence. Especially effective elements of the social-learning program included (1) integrated procedures emphasizing the acquisition of patient skills and the reduction of bizarre, inappropriate behavior; (2) a token economy structure; and (3) consistent pacing and generalization training. More recent research in the area has sought to identify the remediative aspects of social-learning programs, to specify patient variables that are related to improvement in a token economy, and to offer patients more specialized interventions (e.g., social skills training) in conjunction with a standard token economy. With the demonstrated and operationalized efficacy of social-learning procedures, the rehabilitation of chronic psychiatric patients has become more feasible.

The rehabilitation of long-term institutionalized psychiatric patients poses an ongoing challenge to mental health practitioners. Almost 10 years after its publication, the comparative study of a social-learning program for chronic psychiatric patients reported by Paul and Lentz (1977) remains unmatched in both its comprehensiveness and methodological rigor (see Rhoades 1981). Social-learning procedures appear to be the most cost-effective approach to meeting the treatment needs of low-functioning, institutionalized psychiatric patients. The inadequacy of existing services for the chronically mentally ill is reflected in at least three disturbing facts: (1) many psychiatric patients are unable to maintain community tenure; (2) even "rehabilitated" chronic patients often have severe deficits in self-care and social skills; and (3) patients in traditional institutional settings are understimulated and frequently lead barren lives.

Rehospitalization rates for psychiatric patients range from 35 to 50 percent within the first year postdischarge (e.g., Friedman, Von Mering, and Hinko 1966; Wolkon, Karman, and Tanaka 1968). About 60 percent of public psychiatric beds are occupied by patients who have been continuously hospitalized for more than 1 year, and as many as 90 percent of these patients are unresponsive to pharmacological treatment (Paul 1984). However, even the ability to live in the community is not a guarantee of satisfactory social functioning. Psychiatric patients frequently reside in dismal social conditions in the community (Kirk and Therrien 1975), and the functioning of many chronic patients living in community residential settings actually declines over time (Kohen and Paul 1976; Dickey et al. 1981; Spivack et al. 1982).

The inadequacy of chronic patients' social skills may limit their ability to cope with and blunt the noxious effects of stressors, making them more vulnerable to symptom exacerbations (Liberman 1982). While social deficits of patients in the community lead to social rejection

Reprint requests should be sent to
Dr S Glynn, Camarillo/UCLA Research
Center, Box A, Camarillo, CA 93011

and a higher risk of rehospitalization, they are also indicative of the impoverished quality of their lives (Lehman, Ward, and Linn 1982; Lehman 1983). In fact, social competence is the best single predictor of successful community tenure following discharge from psychiatric facilities (Paul, in press a). Treatment programs that strive to remediate the social deficits of chronic patients may be expected to improve their clinical condition, social adjustment, and potential for community tenure.

Just as overstimulating, stressful environments worsen the symptoms of many psychiatric patients, understimulating and unstructured environments also promote maladaptive behavior (Wing and Freudenberg 1961; Rosen et al. 1981; Wong et al. 1985). Many programs for the chronically ill include few structured activities and minimal patient-staff contact. Patient-staff interaction in State and VA hospitals accounts for less than 11 percent of patient waking hours, and less than 15 percent of staff working hours (Paul 1986a). Increased interaction of appropriate types and levels between patients and staff in structured or semistructured environments could lessen inappropriate behaviors that present obstacles to community survival (Mechanic 1969; Paul 1986b).

Thus, the high proportion of chronic psychiatric patients with severe social deficits who reside in understimulating environments that maintain, rather than rehabilitate, suggests the need for programs that actively seek to improve these patients' skills competency (Bellack and Mueser, in press). The social-learning program of Paul and Lentz (1977, in preparation), because of its demonstrated efficacy and relevance to community as well as hospital-

based programs for disabled chronic mental patients, deserves a renewed focus and descriptive evaluation.

Psychosocial Programs

The study of Paul and Lentz (1977) compared traditional hospital treatment and two comprehensive psychosocial treatment programs for psychiatric inpatients that actively sought to enhance patients' functional independence: a social-learning program, based on learning principles such as associative learning, problem solving, reinforcement, modeling, punishment, and shaping; and a milieu therapy program based on communication theory and the therapeutic community model that promotes prosocial behavior through communicating attainable expectations, stimulating patient involvement, and group cohesiveness. Both psychosocial programs aimed at resocializing patients by developing self-maintenance and interpersonal skills; decreasing bizarre, inappropriate behaviors; and facilitating discharge and maintenance in the community. Successful community tenure was defined as a spectrum of levels of functioning including independent living, residence in board-and-care homes, and gainful or sheltered employment. Declining-contact aftercare in the community was an important treatment component that was provided to patients discharged from traditional hospital wards as well as to those discharged from the psychosocial units. The declining-contact aftercare consultation was provided directly to discharged patients and their significant others for those living independently and to the facilities for those living in community placements.

The comparative study was conducted with chronically institutionalized, severely debilitated, aggressive, and psychotic psychiatric patients. The specific, comprehensive social-learning and milieu programs that were developed and evaluated employed the same clinical staff members, who rotated between the two programs on a daily basis to equate time and exposure. These programs engaged patients in structured therapeutic and training activities much of their waking hours (85 percent), unlike the traditional hospital group (5 percent). The psychosocial programs were conducted concurrently for 4½ years with a minimum 18-month declining-contact followup while the control hospital program continued "as usual" with monitoring of patients for 6 years.

Patients and Staff. The patients were 18 to 55 years old, equally divided in gender, and had been residing continuously for at least 2 years in one of four State hospitals in Illinois. The great majority of patients were divorced or had never been married, and all were low in socioeconomic status. All had diagnoses of chronic "process" schizophrenia and had few or no friends or relatives in the community. Overall, the patient group had spent an average of 17 years—about two-thirds of their adult lives—in psychiatric hospitals. As a group, the patients demonstrated higher levels of inappropriate, "crazy" behavior and greater deficits in self-care, interpersonal, and communication skills than any previous psychiatric group that had been subject to programmatic study. This population had received many prior somatic treatments and all had received chemotherapy, although they were clearly "hard-core" chronic mental patients for whom neuroleptic

medications are largely not beneficial (Paul, Tobias, and Holly 1972; Gardos and Cole 1976). Initially, three patient groups of 28 each were equated on 16 variables and randomly assigned to the three treatment programs. "New" patients were admitted from the original chronic population to maintain 28 inpatients in each program with equation at the entry assessment for additional patients as well.

The clinical staff who implemented the social-learning and milieu programs were 20 percent professionals (e.g., psychologists, social workers, nurses, and occupational therapists) and 80 percent nonprofessionals (aide-level with a high school degree). The staffing level and staff-patient ratios were purposely equal to those in the traditional hospital treatment, and all were considerably lower than the average staffing ratios in public mental hospitals nationwide.

Treatment Setting. The two inpatient psychosocial programs were located in identical adjacent 28-bed units in a regional mental health center. These units were coeducational, and had been designed to facilitate staff-patient interaction. Unique features of the units included a kitchen, bedrooms that varied from six-bed dormitory-type rooms to private ones, a living room, a TV room, a classroom-lounge, and a sunken "activity pit" in the center of an open area of the ward. Administrative structure and patient care services were totally decentralized to treatment units.

The regional State hospital that served as the control inpatient treatment housed approximately 1,000 residents, and contained a wide variety of departments, treatment facilities, and support services, including occupational, industrial,

and educational programs as well as recreational and art facilities. The 28 comparison beds and patients were located on wards that were segregated by sex, and varied in size from 16 to 84 beds. The declining-contact aftercare for discharged patients from both center programs and the hospital comparison group was provided by the psychosocial staff, who traveled to the community residence of ex-patients for on-site consultations.

The social-learning and milieu therapy programs shared several features and basic aims. Both inpatient psychosocial programs used a level system where residents promoted to higher steps were gradually exposed to less structured situations, earned greater privileges, and carried added responsibility. Both programs covered all aspects of patients' lives and functioning with consistent interactional-educational conceptual models, including integrated principles, procedures, and assessments 24 hours per day, 7 days per week. Participants in the programs were referred to as "residents" rather than "patients," and an emphasis was placed on the use of descriptive, action-oriented language. A list of 10 rules (see table 1) was conspicuously posted around both units to cue the residents to attend to the expected norms of behavior. Patient schedules included individual times and places for assessment and training of specified aspects of cognitive, social, and instrumental functioning. The programs stressed the importance of residents acquiring desirable intra-personal, interpersonal, and instrumental aspects of functioning through continuous assessment of each resident's needs and progress, modeling appropriate social interactions, teaching vocational, house-keeping, communication, problem-

solving, coping, and self-care skills, gradually reacquainting the residents with the outside world, and programming for generalization into the community. Both psychosocial programs were "high technology" in the sense of requiring very precise specification of appropriate staff interactions with patients demon-

Table 1. Psychosocial program rules

As a resident of the rehabilitation unit, you are expected to:

1. Care for yourself and present a desirable appearance
2. Perform your own house-keeping chores and share in those of the unit
3. Think, talk, and act straight (in ways that make sense to others)
4. Show gentlemanly or ladylike behavior
5. Show respect for the rights of others, for yourself, and for your property
6. Interact cooperatively and actively with residents, staff, and others
7. Attend and participate in all scheduled activities (be where you're supposed to be)
8. Acquire and demonstrate work habits and skills that will provide for an income after you leave
9. Move through the 4 step levels of the program and return permanently to the outside community
10. *Not* act "crazy"!

From Paul, G, and Lentz, R *Psychosocial Treatment of Chronic Mental Patients Milieu vs Social-Learning Programs* Cambridge, MA. Harvard University Press, 1977 p 47

strating a variety of behaviors in a number of settings. What discriminated between the social-learning and milieu therapy inpatient programs was the specific nature and content of staff/patient interactions.

Social-Learning Inpatient Program.
The social-learning inpatient program was based on a token economy motivational structure. Residents in the first three step levels earned tokens (colored strips of plastic) redeemable for goods or privileges contingent upon engaging in appropriate behaviors. Consistent verbal and nonverbal staff-patient interactions were paired with token exchanges. As patients progressed to higher steps, the number of tokens they could earn grew, as did the availability of increasingly more desirable privileges. For example, tokens could be earned by attending and participating in meetings and classes, engaging in appropriate informal conversations, cleaning the unit, good mealtime behavior, maintaining one's personal appearance, and working in vocational training positions; tokens could be spent on more pleasant sleeping quarters, passes, privacy time, food, appointments with staff members, and promotion to a higher step. Throughout the program, the particular performances necessary to obtain a set number of tokens were clearly specified in objective, readily observable terms for each patient, as were the privileges for which the tokens could be exchanged. As patients were promoted, gradual delays of reinforcement were introduced to enhance internal planning and control.

Guidelines governing the operation of the social-learning program were derived from two basic learning principles: the *law of effect*, and the *law of association by contiguity*. The

law of effect was applied in the social-learning program by arranging for desired behavior to be followed by social and material *positive reinforcement* or by the removal of *negative reinforcers*, and for undesired behavior to be followed by either punishment (*aversion*), loss of positive reinforcers (*response cost*), or no consequence at all (*extinction*). The law of association by contiguity was incorporated into the program in many ways: to assure that a resident's desirable or undesirable behavior was met immediately with the appropriate consequence; to develop new affective and cognitive learning and problem-solving skills; to establish social stimuli as positive or reinforcing events; and to shift or generalize new skills and coping responses from dependence on tokens to internal and verbal controls.

In addition to these laws, other learning principles were systematically integrated in the social-learning program to facilitate the acquisition of appropriate behavior, including *shaping* (reinforcing successive behavioral approximations to a criterion), *chaining* (teaching a new behavior by systematically linking components in a sequence), and *positive and negative prompts* (instructing desired performance through physical guidance, demonstration and modeling, and written or verbal means, along with verbal specification of resulting consequences). Direct verbal instruction and modeling were also incorporated in classes and therapy groups to provide new knowledge and skills.

Milieu Therapy Inpatient Program.
The milieu program was based on a therapeutic community structure wherein all patients were members of 9- to 10-person "living groups" which were assigned the tasks of identifying problems and promoting change

among individual members. Unit tasks such as meal preparation were assigned by living groups, and attempts were made to keep group members on similar daily schedules for training classes and activities. Members were also encouraged to spend free time and passes together. The major vehicle for promoting change was the social and group pressure exerted by each living group on its members. All patients and staff were also members of the unit-wide community group which, through discussion and majority vote, dealt with any decisions affecting the entire community, while an executive council with elected members from each living group was responsible for agendas.

The milieu treatment program was based on three laws: *expectancy, involvement*, and *group cohesiveness*. The *law of expectancy* was operationalized by the staff's use of *positive statements* that specified and encouraged performance of desirable behavior before it occurred, *positive feedback* that verbally acknowledged a recent desirable performance and/or the value of the person, and *negative feedback* that acknowledged and discouraged a recent undesirable act or verbalization. Clarification and interpretation of metacommunicative aspects of behavior were important. Since the use of *negative statements* could communicate to the resident an expectation that he or she would engage in an undesirable behavior, these were not used in either treatment program. Unlike the social-learning program, staff applied no nonsocial or material consequences whatsoever (except for "expelling" patients from the group to seclusion as a consequence for assaults) and contingent social consequences occurred only incidentally when positive feedback coincided with a

particular patient performance.

On the basis of the *law of involvement*, residents in the milieu program always assumed the maximum responsibility for making decisions and implementing them, frequently practiced problem solving, and were encouraged to engage in behaviors in which they had previously experienced failure. *Group cohesion* was enhanced by the entire community and living-group structure, encouraging an "us" and "them" attitude within the groups, and the endorsement of group pressure as a vehicle for change in group members. Milieu therapy patients attended identical classes as social-learning patients and received verbal instruction and modeling to provide new knowledge and skills; however, classes were assigned by living groups rather than by individuals.

Community Aftercare Component. The inpatient psychosocial programs focused on preparing patients for community functioning by establishing minimal levels of competence in self-care, interpersonal, communications, and instrumental role skills, and by reducing or eliminating psychotic manifestations and other extremely bizarre behavior. The inpatient programs also attempted to bridge the gap from residential treatment to community living by training for generalization to natural support systems and establishing living arrangements, training or vocational positions, and at least one supportive friend or relative in the community before discharge. An aftercare program involving scheduled contacts in the community on a declining basis by trained psychosocial staff was an equally important component to ensure generalization of inpatient gains and maintenance of functioning and

community tenure. Early on, it became clear that social-learning principles were the most promising on which to base aftercare consultations; consequently, patients discharged from all three inpatient programs were provided with declining-contact followup employing social-learning principles and technology. At least 4 weekly, 5 biweekly, and 3 monthly contacts followed by semiannual contacts were scheduled, with additional contacts as needed. Declining-contact aftercare was provided for at least 2 years to each patient discharged to independent functioning and self-support, and for 18 months to board-and-care facilities that accepted community placements from any of the three inpatient programs.

Assessment and Evaluation Procedures

A comprehensive set of assessment and evaluation procedures is necessary to ensure coverage of patient, staff, and program functioning, as well as to evaluate the impact of interventions in residential and community treatment (see Paul and Mariotto 1986). In the comparative study, a battery of standardized rating instruments and structured interviews was obtained on all patients in all three treatment groups before and after entry to study programs, every 6 months thereafter during inpatient treatment, immediately before discharge, and every 6 months after discharge. Ongoing reliability checks were obtained for each measure. Along with demographic variables, these measures served to equate treatment groups on initial patient entry and to sample levels of adjustment during and after inpatient treatment on common instruments at identical time periods. Measures of staff attitudes,

opinions, and personality characteristics were similarly obtained on all clinical staff.

In addition to the above assessments, three direct observational coding systems were continuously employed in both inpatient psychosocial programs. The *Clinical Frequencies Recording System (CFRS)* (see Paul and Licht, in press *a*; Paul and Shelite, in preparation) was an integral part of the application of both comprehensive social-learning and milieu programs. The CFRS consists of a set of standardized time-place-situation specific forms completed by clinical staff concurrent with therapeutic activities. CFRS forms provide 100 percent event-recording of low-frequency critical acts (e.g., assaults and other intolerable behavior) and of setting-dependent aspects of patient functioning (e.g., on time, on task, progress toward normal appearance) as well as staff responses to each patient's behavior. Higher-order CFRS scores combine recordings over forms and weekly periods to provide objective data for program evaluation on the rate with which different classes of behavior were performed. The detailed daily records ensured consistent identification and monitoring of each patient's level of achievement, subtargets for clinical programming, and consistency of staff response.

Two multivariate direct observational systems employed by a small cadre of independent noninteractive observers provided continuous objective assessment of staff and patients in both psychosocial programs through stratified hourly time sampling of all patient waking hours for the entire 4½-year inpatient phase. Full-week samples of resident and staff functioning in community board-and-care facilities were also obtained every 3 months

during the followup period. The *Time-Sample Behavioral Checklist (TSBC)* (see Paul, in press *a*; Paul and Licht, in press *b*) records the context of each observation as well as the presence/absence of 69 specific codes within 7 content categories: Location, Position, Awake-Asleep, Facial Expression, Social Orientation, Appropriate Concurrent Activities, and Crazy Behaviors. Weekly summarization of TSBC data provides objective rates of occurrence for each individual code as well as higher-order components of functioning, both appropriate (e.g., Interpersonal Interaction, Total Appropriate Behavior) and inappropriate (e.g., Cognitive Distortion, Total Inappropriate Behavior) for each patient and treatment unit as well as documenting how and where time is spent.

The *Staff-Resident Interaction Chronograph (SRIC)* (see also Paul, in press *b*; Licht and Paul, in press) records the context of each observation, and the nature, content, and frequency of 21 classes of staff verbal and nonverbal response to four classes of resident functioning (Appropriate, Inappropriate Failure, Inappropriate Crazy, "Straight" Requests) or of staff-initiated interactive or noninteractive activity (Resident-"Neutral"). Weekly summarization of SRIC data provides objective rates of occurrence for each cell of the 5 (resident behavior) $\times$ 21 (staff behavior) matrix, and higher-order scores reflecting total staff activity, total staff-resident interactions, actual resident/staff ratios and attention received by all residents in a program to document the psychosocial treatment provided. SRIC summaries for individual staff or staff groups were also used for monitoring and feedback. TSBC/SRIC observers were trained to 100 percent accuracy on both

instruments, and the obtained data were highly reliable.

Rehabilitation Outcomes

Because the patients who participated in this study exhibited such bizarre behaviors and deficits in adaptive functioning, the relative efficacy of the social-learning and milieu programs compared to traditional hospital treatment needs to be evaluated with regard to three practical goals that are critical for such a disabled population:

- Increasing patients' adaptive functioning (e.g., self-care and social skills) and decreasing patients' psychotic functioning and extremely bizarre behavior.
- Reducing the psychotropic medications necessary to stabilize patients.
- Facilitating discharge and successful maintenance in the community.

In all three domains, milieu therapy resulted in greater gains than seen in the hospital comparison group, and the social-learning program yielded strikingly better results than the milieu treatment. Furthermore, the improvement in social-learning patients was not related to any individual characteristics, pretreatment level of functioning, or diagnosis, and was obtained in the relative absence of psychotropic medication. The structured, comprehensive, and integrated procedures of the social-learning program led to the development of personal and interpersonal skills which were remarkable on an absolute level for this chronic group, the reduction of idiosyncratic and "crazy" motor and verbal behavior to fractions of initial levels, a radical decrease in the

number of patients prescribed psychotropic medications, and to successful discharge or community placement without rehospitalization for the vast majority of patients.
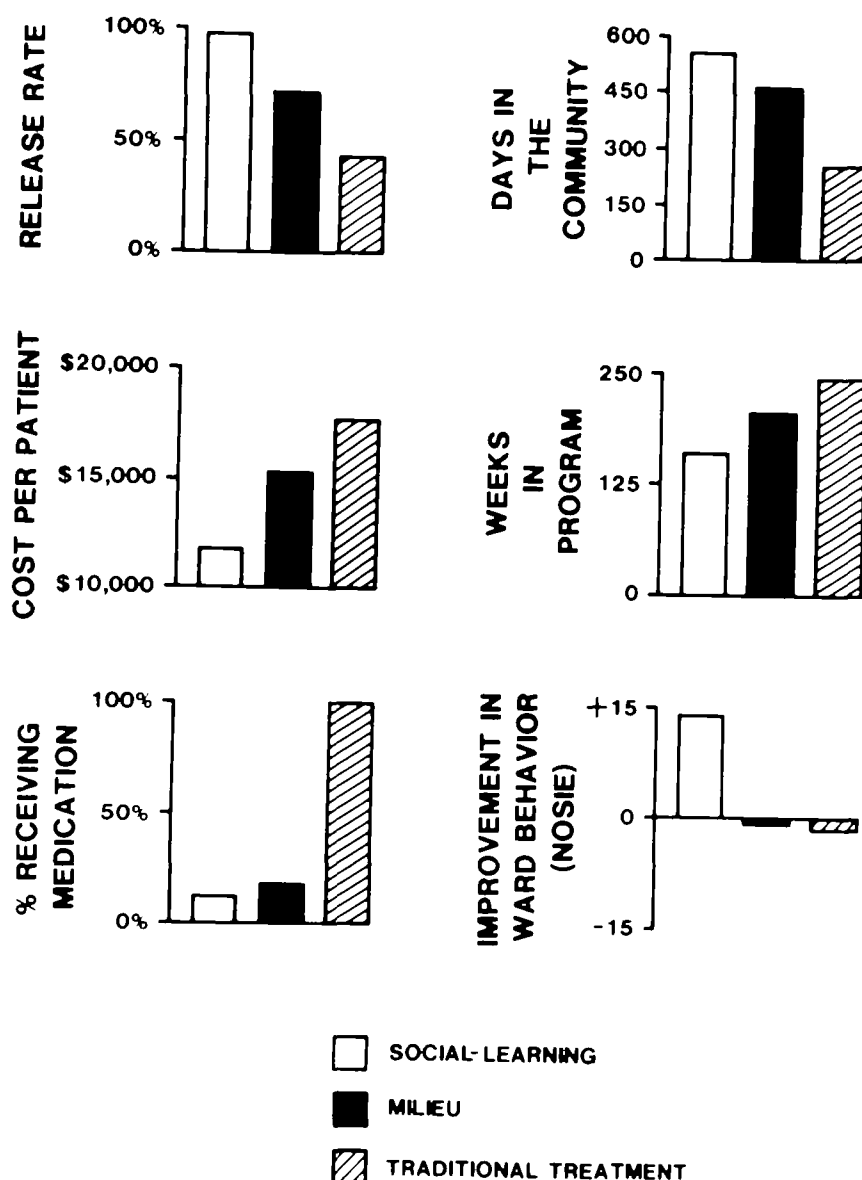
The social-learning program treated nearly 30 percent more patients than either the milieu or hospital programs with essentially identical resources. Consequently, it was three to four times as cost-effective as traditional programs and is thus also the treatment of choice on purely economic grounds. The explicit consequences within the comprehensive, constructive program resulted in social-learning patients receiving fewer aversive or intrusive events than other inpatients, with the program ensuring that least-restrictive or intrusive procedures were invoked; thus, it is also the treatment of choice based on ethical and humanitarian concerns. The specificity of procedures and precision of feedback provided by the integrated observational assessment systems allowed both professional and nonprofessional staff to be trained to exceptional levels of competency in implementing the program. This resulted in nearly errorless performance in the ongoing conduct of the comprehensive procedures—it was accessible to and accepted by the levels of staff already employed in the usual public psychiatric hospital. Figure 1 illustrates the outcomes for the three treatment groups, including release rate, days in the community, weeks in the treatment program, percent on psychotropic medications, and changes on a common ward rating scale, the Nurses Observation Scale for Inpatient Evaluation (NOSIE-30) (Honigfeld 1966). Declining-contact aftercare for discharged patients was successful in maintaining community tenure in more than 97 percent of cases, indicating unquestioned superi-

ority of the social-learning program over the milieu and hospital comparison groups.

Increasing Adaptive Functioning and Decreasing Bizarre Behavior. Outcomes could not be clearer regarding the absolute efficacy of the social-learning program in achieving the goals of increasing patients' adaptive functioning and decreasing patients' psychotic functioning and extremely bizarre behavior, as well as its relative superiority to the milieu program conducted by the same staff. The detailed ongoing assessment of patient functioning with the TSBC and CFRS found the milieu program to produce significant reductions in all classes of bizarre and inappropriate behavior except for dangerous and aggressive acts, for which milieu procedures were ineffective. However, the social-learning program was even more effective in reducing excesses in bizarre and psychotic behavior, with all components of maladaptive functioning showing an average reduction from incidence at entry exceeding 60 percent. Comprehensive social-learning procedures were particularly effective in eliminating belligerence and dangerous and aggressive acts—producing an average reduction of 97 percent, reflecting complete elimination of such behavior for all but one patient, whose physical condition precluded participation in those procedures known to be effective. The only area of maladaptive functioning in which the milieu therapy program was ultimately as effective as the social-learning program was in the reduction of bizarre verbal statements and inappropriate facial expressions indicative of thought disorder (e.g., delusions, hallucinations, incoherent speech)—even here,

Figure 1. Practical outcomes of the long-term comparative study of Paul and Lentz

☐ SOCIAL-LEARNING

■ MILIEU

▨ TRADITIONAL TREATMENT

Note —On all 6 dimensions, the social-learning program achieved results better than the results of the milieu program, which were better than those of the standard treatment comparison

Source Paul, G , and Lentz, R *Psychosocial Treatment of Chronic Mental Patients Milieu vs Social-Learning Programs* Cambridge, MA. Harvard University Press, 1977

the social-learning program was more efficient, producing such reductions more rapidly and consistently.

Differential effectiveness of the social-learning program was even greater for increasing adaptive cognitive, social, and instrumental functioning. Whereas the milieu program only produced an average increase in overall competent functioning of about 25 percent above incidence at entry, the social-learning program was remarkably effective in overcoming the severe deficits in this chronic population—demonstrating improvements in overall competent functioning nearly 10 times the rate achieved by the milieu program. On an absolute level, the average social-learning patient increased interpersonal and communicative skills by over 1200 percent of their entry level.

Overall, the social-learning program produced significant improvement in functioning in every patient who was physically capable of participation, including those who had failed to improve in the milieu program. In fact, 25 percent of these severely disabled patients had improved to the point of being indistinguishable from the "normal" population. Sustained improvement in the milieu program was obtained for only 55 percent of the number improved in the social-learning program, while less than one-third that number showed any improvement in hospital programs. Further, no additional improvements were observed in milieu or hospital groups while nearly all classes of patient functioning continued to show improvement in the social-learning program until the time the inpatient units were closed. On the basis of the practical goals of increasing adaptive functioning and decreasing bizarre behavior, the social-learning program is the clear treatment of choice.

Reducing Psychotropic Medications. Since psychotropic medications frequently have deleterious side effects, and many institutionalized patients who are refractory to neuroleptic drugs received them on a "superstitious" basis, treatment programs that reduce the need for such medications are especially desirable. As might be expected given the chronic nature of the patients included in this study, the vast majority of all patients (91.7 percent) were receiving psychotropic medications at its inception. After 3½ years of operation of inpatient programs, however, 89 percent of the social-learning patients and 82 percent of the milieu patients were not prescribed such medications, and this low level was maintained through the end of the inpatient treatment phase. This low medication rate is particularly impressive in view of the fact that medications were held constant on psychosocial programs over the last year when significant improvements in functioning were obtained, and that *none* of the patients in the hospital comparison group were medication free at the end of the inpatient period. The reader will note, of course, that both alternative psychosocial programs yielded significant reductions in prescribed medications; by this criterion, both the social-learning and milieu programs were very effective, and the milieu program was nearly as effective as the social-learning program.

To assess whether psychotropic medications affected the clinical efficacy of either the social-learning or milieu treatments, Paul, Tobias, and Holly (1972) randomly assigned half of the patients in each group at pretreatment to placebo and half continued to receive neuroleptics. Physicians, staff members, and patients were blind to each patient's

medication status for the following 17 weeks of the active program. The ward behavior of all patients improved over the study period, with patients in the social-learning group improving the most. After 17 weeks of the treatment, there were no differences between patients on neuroleptics and those receiving placebos. However, patients receiving neuroleptics improved at a slower rate during the first 2 months of treatment than patients receiving placebos, suggesting that medication may actually impede recovery in at least some psychiatric patients. This finding is consistent with a review of the literature by Gardos and Cole (1976) and Liberman, Falloon, and Wallace (1984) who concluded that as many as half of all medicated chronic schizophrenic outpatients were actually unresponsive to neuroleptics and would function just as well without medication, especially when involved in structured behavior therapy programs.

Facilitating Discharge and Community Tenure. A major goal in working with chronically institutionalized psychiatric patients is to improve functioning to a level enabling them to be successfully discharged and maintained in the community. On the basis of this criterion, the social-learning program was again established as significantly more successful than the milieu treatment and the traditional hospital comparison groups. Through the end of the common inpatient period, the social-learning program treated 40 patients, of whom 97.5 percent were successfully discharged with a minimum community stay of at least 90 days, as compared to 31 milieu patients with 71 percent discharged, and 29 hospital comparison patients with 44.8 percent discharged. Of the original equated groups, discharge to

independent living and self-support without rehospitalization was achieved for 10.7 percent of social-learning patients, 7.1 percent of milieu patients, and none of the hospital patients—any such discharge being astounding for the severely disabled population. All other discharges were to community board-and-care facilities with, at best, employment in a sheltered workshop. Unfortunately, about 80 percent of the patients discharged to board-and-care facilities were readministered psychotropic drugs once they were in the facilities, independent of their nature or level of functioning. The investigators had hoped to extend the social-learning program to community aftercare facilities, but budgeting constraints and logistical difficulties precluded the full development of this plan and responsibility for programming had to be relinquished to the facilities. The declining-contact aftercare consultation was, however, conducted for discharges to independent living and to community board-and-care placements. These social-learning aftercare procedures were successful in maintaining community tenure for more than 97 percent of patients discharged from all three inpatient programs, without differential rehospitalization rates from the different inpatient units. Community tenure ranged from a minimum of 18 months to more than 5 years at the end of the followup period. Thus, all the evaluative goals—increasing adaptive functioning and decreasing psychotic and bizarre behavior, reducing psychotropic medications, and facilitating discharge and community tenure—identify the comprehensive social-learning program as the clear treatment of choice for the severely disabled, chronically institutionalized psychiatric patient.

Practical Acceptability of Innovations

As any practitioner can attest, treatment efficacy must be evaluated on many dimensions, including its acceptability and relevance in clinical settings. The most useful treatments must result in benefits for patients, of course, but they must also be cost-effective, ideologically acceptable, and manageable by staff. Even a surefire "cure" is of little value if it is too costly to purchase or no one can administer it! Once the success of the social-learning program in reducing symptoms and enhancing adaptive functioning among chronic mental patients is accepted, four important questions remain: (1) How much does the treatment cost? (2) Is it acceptable on ethical and humanitarian grounds? (3) Can it be delivered consistently in the face of external pressures? and (4) Is it comprehensible, manageable, and desired by the typical public hospital staff?

Cost-Effectiveness. Paul and Lentz (1977) report a detailed and conservative cost-effectiveness analysis of the comparative dollars spent and saved by the different treatment programs during the 6-year period—noting that only differential costs and savings have meaning without estimating the effects of inflation and discounting. Although staff-patient ratios were equal between psychosocial programs and the hospital comparison, staffing costs were slightly higher for the psychosocial programs as a result of including aftercare functions within inpatient staffing and a relatively greater proportion of psychologists (including Paul's consultant costs) in contrast to nurses in the psychosocial programs. However, the reduced use of psychotropic drugs in psycho-

social programs resulted in lower medication costs. Thus, the daily cost of the social-learning program for staffing and medication combined was only 1.6 percent higher than that of the hospital program while the cost of the milieu program was only 2.0 percent higher in these regards. All other per diem costs of the social-learning program were equal to or less than those of the milieu program, the costs of which were in turn equal to or less than those of the hospital comparison.

The greater efficiency and effectiveness of the psychosocial programs in producing successful discharge and community tenure resulted in a considerable economic gain since aftercare is much less costly than continued hospitalization. Even when the cost side of the equation is limited to the differential expense of staff and drug costs, the social-learning program returned more than three times the dollar savings for the same dollars spent than did traditional programs during the project period, and 30 percent more than the milieu program when calculations include only the original equated groups. If the greater number of patients treated are considered, the social-learning program was nearly four times as cost-effective as the hospital comparison and 50 percent more cost-effective than the milieu program. Thus, purely on the basis of economic factors, both psychosocial programs were more effective than traditional hospital treatment, and the social-learning program again emerged as the treatment of choice.

Ethical and Humanitarian Concerns. The majority of social-learning procedures that are directed toward increasing patient motivation and decreasing inappropriate and bizarre behavior consist of positive

reinforcement of adaptive competencies through application of both social and material consequences and constructive training in appropriate alternative behavior. However, the social-learning program also includes the use of primary reinforcement (e.g., food and sleep) as well as explicit behavior-contingent application of extinction, aversion, and response-cost procedures about which many commentators have ethical and humanitarian concerns.

Paul and Lentz (1977) provide a detailed analysis of all procedures within the social-learning program that could be considered aversive, restrictive, or intrusive by nearly any standard as well as comparative data on the frequency of such events in traditional hospital programs and in the milieu program, where the only specified negative consequence was for dangerous and aggressive acts. In the traditional hospital program, 20.9 percent of staff-patient interactions involved such negative components as compared to 12.3 percent within the milieu program and only 7.5 percent within the social-learning program. Further detailed analyses of the absolute level of deprivation, intrusions, or punishment found the social-learning program to be the most humanitarian of all inpatient programs in these regards. The presence of an integrated, constructive treatment program with many positive social and material consequences and a few explicit and consistent negative ones further increased the effectiveness of purely verbal procedures, even for terminating ongoing inappropriate behavior (e.g., such verbal procedures increased from a low of 94 percent effectiveness to 98 percent in the social-learning program as compared to the milieu program where verbal procedures started at 75 percent effectiveness and declined

over time to only 55 percent). Thus, the comprehensiveness of the program with explicit criteria and contingency rules based on ongoing objective assessment ensured the least restrictive or intrusive means necessary for treatment of each patient nearly automatically. Consequently, the social-learning program also emerges as the treatment of choice on purely ethical and humanitarian grounds.

Treatment Consistency. Although social-learning treatment was clearly an effective intervention, its effectiveness was occasionally compromised by external events (e.g., a patient death, fiscal constraints, and hospital policy changes made at the State level). Each of these circumstances at least temporarily decreased improvements gained through behavioral programming. The most dramatic decrease occurred subsequent to a revision in Illinois State policy on the use of restrictive and aversive interventions. Previously, nursing staff had the option of placing highly assaultive and aggressive patients in seclusion for up to 48 hours, but the modified State policy limited the duration of this seclusion to a 2-hour maximum. A gradual increase in assaultive behavior followed in both psychosocial programs, with even nonassaultive patients demonstrating decreases in adaptive behavior and increases in inappropriate behavior. Fortunately, the new policy was eventually revised to allow longer duration in seclusion, and many treatment gains were reestablished.

While the circumstances surrounding this policy change may be specific to Illinois, the larger issues apply to all innovative treatment programs. They are uniquely sensitive to administrative fiats, budgetary constraints, and

sociopolitical pressures. Thus, mental health professionals who wish to develop or implement novel treatment programs must be prepared to defend sedulously their rationale and treatment practices, and even then to be faced with external mandates for change. Consistent programming becomes especially problematical. However, the Paul and Lentz experience indicates that diligence in defending new programs can greatly facilitate their continued existence.

Program Accessibility to Staff. Public psychiatric hospitals must rely on nonprofessionals (e.g., high school graduates) with some additional training to provide most of the ongoing patient care. Consequently, alternative treatment approaches must be comprehensible and manageable by staff members lacking advanced training in the behavioral sciences. One of the greatest strengths of the comparative study reported by Paul and Lentz (1977) is the demonstration that nonprofessional staff could be taught to conduct two comprehensive and rigorous but distinct "high technology" psychosocial treatment programs. After less than 6 months of training, all trainees were regularly certified to work independently in all functional components of both the social-learning and milieu programs. Furthermore, continuous hourly time sampling on the SRIC verified that staff members were conducting the two programs differentially and with excellent fidelity to the models. After only 6 weeks of initial training, over 90 percent of the staff-patient interactions in the milieu program followed detailed procedures and over 98 percent of the staff-patient interactions in the social-learning treatment followed the social-learning procedures. After

inservice training incorporated SRIC as well as CFRS data for staff feedback, the fidelity of staff execution of both psychosocial programs improved to more than 99.5 percent and remained there until termination (more than 2 years). Interestingly, staff opinion was somewhat divided about the alternative treatment programs. Most staff consistently judged the milieu program to be closer in ideology to their preferred form of intervention, but found the actual work on the social-learning unit to be more enjoyable and accurately judged the social-learning program to be more effective.

In summary, the social-learning program, which was the treatment of choice by all other criteria, is clearly manageable, acceptable, and accessible to the types and levels of staff already employed in public psychiatric hospitals. Nevertheless, the development and implementation of social-learning programs for chronic mental patients has critical prerequisites. These include substantial administrative support and encouragement; highly specialized and competent leadership; careful, extensive staff training; and an ongoing commitment to quality assurance. Only with these prerequisites satisfactorily met can a behavioral treatment program develop and flourish. The implications of implementing a social-learning program for chronic mental patients are outlined more fully in table 2.

Rehabilitative Characteristics of Psychosocial Programs

The focus of this section is on program characteristics that can improve the clinical outcome for institutionalized patients, drawing on the findings from the Paul and Lentz

study (Paul and Lentz 1977; Paul 1984) and other relevant findings in the literature.

Commonalities Between the Social-Learning and Milieu Programs. Four common remediative aspects of the

Table 2. Implications of Paul & Lentz's (1977) report

Implications for whom	Implication
On-line staff in psychiatric facilities	Even the most disordered institutionalized schizophrenics can be treated effectively, treated and discharged to community care: work in structured/effective units is more enjoyable than unstructured ineffective units
Mental health professionals	Through psychosocial programming, most institutionalized psychiatric patients can be stabilized and discharged without psychotropic medications; comprehensive programs that effectively use nonprofessional staff are more enjoyable and better than when only professionals try to carry the treatment load
Psychiatric hospital administrators and unit directors	Nonprofessional staff can be taught to conduct a rigorous comprehensive treatment program reliably, thus increasing the effectiveness of treatment; aftercare should be integrated with inpatient programs
Mental health policy makers	Using funds to develop and implement social-learning programs at public psychiatric facilities is an investment that will be recouped by shorter hospital stays and reduced recidivism; policy decisions can have far-reaching negative effects and should be piloted carefully before they are mandated
Chronically institutionalized patients, their loved ones, and society at large	Rational, cost-effective, and humanitarian treatment programs can be implemented; the situation need not continue to be hopeless

psychosocial programs in the long-term comparative study have also received considerable theoretical and empirical support in other literature. These features are not only necessary prerequisites to the proper implementation of a social-learning program but are likely to enhance the rationality and rehabilitative efficacy of any inpatient or residential program for all patient populations in the mental health field.

Ongoing assessment systems. The CFRS, employed by clinical staff as an integral part of the conduct of treatment programs, and the TSBC and SRIC, employed by a small cadre of independent noninteractive observers, provided ongoing moment-to-moment and hour-by-hour objective assessment of patient and staff functioning in both psychosocial programs. These instruments are not only necessary to provide the detailed information for ongoing monitoring needed to implement the treatment of choice, but a thorough analysis of sources of information and methods of assessment found them to be prototypical primary strategies of a comprehensive assessment paradigm that would provide all the information needed for reasonable, cost-effective operation of residential treatment programs and facilities (Paul and Mariotto 1986). These assessment strategies provide nearly all of the information on patient, staff, and program functioning needed for rational moment-to-moment concurrent monitoring of individuals and groups, placement and disposition decisions (i.e., patient admission/assignment and discharge/transfer; staff hiring/assignment and discharge/transfer), identification of patient problems and assets, staff development/utilization, absolute and comparative program evaluation, legal and ethical

regulation/documentation, need for more expensive assessment strategies such as individual interviews, and applied research.

Paul and his colleagues have developed the TSBC and SRIC into the Computerized TSBC/SRIC Planned-Access Observational Information System (Paul 1986b, in press c) to provide timely information with documented applicability to all types of residential or inpatient programs for the full range of adult patients, including mentally retarded as well as alcohol/substance abuse and acute and chronic mentally ill (Paul, in press a, in press b). Because of the quality and amount of useful assessment information and documentation provided by independent observers and the computer, clinical staff are freed from unnecessary paperwork such that the four- to five-fold increases in attention received by patients from staff in the social-learning and milieu programs can be obtained without increasing existing numbers of staff or staff/patient ratios.

Decentralized administrative structure with integrated staffing. Another common and critical aspect of the psychosocial programs in the long-term comparative study was the decentralized administrative organization to the treatment units with permanent rather than rotating staff assignments, and authority and responsibility based on demonstrated competency rather than discipline. Comprehensive psychosocial programs could be housed in a variety of physical locations, including public or private mental hospitals, inpatient units of mental health centers or general hospitals, and community residential facilities; however, the decentralized administrative/staffing organization is crucial to allow consistent staff training, monitoring, and communi-

cation as well as continuity of care—preferably extended to responsibility for postdischarge aftercare as well. Such an organization allows the maximum use of the large number of existing nonprofessional staff as direct providers of service, instead of being just "caretakers" while the professionals attempt to provide treatment. As demonstrated in the long-term study and elsewhere, positive attitudes, program identification, and improved performance of all levels of staff can result from such a structure with integrated staffing. This structure also helps buffer patients and staff from the vagaries and irrationalities of funding and external political events which can keep some component of any centralized administrative structure, where authority is based on disciplinary lines, in upheaval at all times. It is probably the only way in which the low staffing levels and resultant desirable cost-effectiveness ratios obtained in the long-term study could provide effective treatment in any program. In fact, Paul and Lentz (1977) argue that all program components and funding, except maintenance functions, should be decentralized to program subunits on a block-grant performance-contracting basis to ensure continuity of programs and to provide incentives for effective treatment without increasing costs.

Comprehensive educational/rehabilitative focus. The common focus of the psychosocial programs on establishing minimal competencies in specific components of intrapersonal, interpersonal, and instrumental skills, reducing or eliminating extreme bizarre behavior, and bridging the gap from inpatient programs to community functioning was originally derived from a review of the literature on factors leading to hospitalization or rehospitalization.

More recent literature, as well as the predictability of community functioning up to 18 months after discharge from the psychosocial programs, strongly confirms the importance of these minimal goals for any inpatient or residential program. In addition, both social-learning and milieu programs structured the daily/weekly schedule of each patient so that specific times and places ensured the opportunity for assessment and training in each component of adaptive functioning while inappropriate behavior was dealt with whenever it occurred. Comprehensive scheduling of all patient waking hours as well as the step system further ensured that all aspects of patient functioning were treated in a systematic, integrated fashion to equip patients with the skills necessary for community living and concurrently protect patients and the community from premature discharges and revolving-door existences. Consistent with a wide range of other research, such a focus on structured activities, classes, and meetings served not only a skill-building function, but also resulted in significant decreases in many aspects of bizarre and idiosyncratic behavior for milieu patients as well as for social-learning patients.

Another important aspect of the educational/rehabilitative focus of both psychosocial programs was the descriptive language, "resident" versus "patient" status, and patient accountability employed. In traditional hospital settings, "patients" are defined as "sick" and are provided with "care" until they are "well." Such conceptualizations may be useful with physical illnesses, but they may also individually reinforce the patient for maintaining the "sick role" (Goffman 1961). While a full discussion of this controversy is outside the scope of this article, it is

clear that setting attainable, positive goals for change and communicating to patients that they are capable and responsible for meeting these goals is a critical first step for any effective treatment program, including ones for the chronically mentally ill.

Consistent, systematic, goal-oriented staff-patient interactions. An important commonality between the social-learning and milieu programs allowed clear, unique, explicit rules about appropriate staff behavior in interacting with patients in a variety of settings which facilitated staff training and ongoing monitoring. This specification allowed consistent and systematic staff-patient interactions. Further, these staff-patient interactions and overall program structures were always goal-oriented such that each activity in each patient's daily schedule was included only if it served a specific purpose designed ultimately to achieve discharge to the community— including gradual reexposure to the less structured settings of the external community. Although Paul and Lentz present SRIC data documenting that the type of staff-patient interaction is more important for improving most classes of patient functioning than the amount, the greater consistency and amount of staff-patient interaction achieved in both psychosocial programs clearly allow for more efficient use of limited staff resources and were effective in reactivating dormant skills and in reducing cognitive dysfunction and indicants of thought disorder in both programs.

Uniquely Effective Ingredients of the Social-Learning Program. By attending to the commonalities between the social-learning and milieu treatments, mental health practitioners working with chronically institutionalized patients

can enhance the rehabilitative efficacy of their overall programs. Further improvements in patient functioning may be accomplished by implementing the unique features of the social-learning program, which was the most effective treatment of all and the clear treatment of choice for the chronically institutionalized.

Integrated procedures emphasizing the acquisition of patient competencies. Although both milieu and social-learning programs showed higher staff-patient interactions than traditional programs, no specific class of patient behavior covaried with total staff activity or attention received by patients. Rather, staff-patient interactions following social-learning principles were more effective with both equal and fewer rates of interaction than in the milieu program. This was especially true for increasing adaptive behavior and teaching patient competencies. The specification of desired behavior, provision of opportunities to perform, and overall goal-directed staff-patient interactions resulted in substantial improvements within 1-2 months in both psychosocial programs; however, milieu patients' adaptive functioning then leveled off or declined whereas social-learning patients' adaptive functioning continued to show gradual and major improvements. Paul and Lentz suggest that the initial response reflected the activation of previously dormant skills, with SRIC data showing that adaptive functioning of milieu patients was maintained only when milieu procedures happened to result in the application of staff-patient interactions that also followed social-learning principles (i.e., contingent social reinforcement).

In contrast, the consistent and systematic application of individual prompts and modeling, response-

contingent consequences with both
social and material reinforcement,
associative learning procedures, and
careful breaking down of patient
adaptive behavior into learnable
components that successively approx-
imated the "normal" functioning
ultimately desired was remarkably
effective in helping social-learning
patients to acquire new self-care,
interpersonal, and communications
skills. These social-learning proce-
dures, combined with brief time-out
and token response costs for failures,
were also exceptionally effective in
increasing patients' attention span,
attendance at classes, meetings, and
vocational training, and other instru-
mental skills as well as increasing the
complexity of performance in
vocational areas. Overall, these
social-learning procedures, which
have shown documented effectiveness
when applied independently in other
studies with a wide range of
functional psychotics (Wong et al.
1986), were uniquely powerful in
developing new intrapersonal, inter-
personal, and instrumental skills for
even the most severely disabled
patients when the procedures were
integrated within the comprehensive
program.

**Integrated procedures to reduce or
eliminate extreme bizarre and
inappropriate behavior.** In keeping
with other research findings, the
active participation in alternative
adaptive activities did lead to signif-
icant reductions in bizarre motoric
behavior and some aspects of
cognitive dysfunction (e.g., delusions
and hallucinations, incoherent
speech, and smiling without a
stimulus). The vast majority of
social-learning patients reduced
extreme maladaptive behavior as a
result of staff ignoring inappropriate
acts while prompting and differ-
entially reinforcing incompatible
adaptive behavior. The explicit,

consistent, behavior-contingent
application of time-out and token
response-costs was also usually
effective in reducing or eliminating
extreme bizarre behavior, including
dangerous and aggressive acts, when
these procedures were applied within
the context of the overall
constructive focus of the social-
learning program—even though the
frequency of application and level of
aversiveness were lower than
procedures typically applied in most
institutional programs. Overcor-
rection/restitution procedures were
100 percent effective in eliminating
assaults and other dangerous
behavior that did not respond to the
overall programmatic procedures.
Although the consistent application
of such negative consequences was an
important and effective component of
the integrated social-learning
program, its greatest value may be in
increasing the effectiveness
of purely verbal social-learning
procedures, since verbal prompts
were 94 percent effective in
terminating ongoing bizarre behavior
from the start of the program,
increasing over time to 98 percent
effectiveness. Thus, the consistency
of such staff-patient interactions was
critical in terminating bizarre and
psychotic acts to allow positive
training in alternative coping and
problem-solving skills. Social-
learning procedures involving
graduated reinforced exposure in
stressful circumstances, the provision
of active solutions, information, and
advice, and training in alternative
adaptive skills were considerably
more effective than milieu procedures
in assisting patients to overcome
negative emotional reactions to stress
and maladaptive behavior based on
conditioned anxiety reactions.
Although these overall programmatic
procedures were adequate in reducing
such emotional reactions in the

chronically mentally ill to a level
allowing discharge and community
tenure, the most effective social-
learning procedures for treating
conditioned anxiety reactions would
require more professional staff for
their inclusion (see Paul and
Bernstein 1976), especially if large
numbers of acutely admitted patients
were being treated.

Token-economy structure. The
overall token-economy motivational
structure was a critical component of
the social-learning program for
effective treatment of the severely
debilitated chronic psychiatric
patient. However, Paul and Lentz
caution that the "token economy" of
the social-learning program may
have little in common with others
that do not include all of the unique
integrated aspects of the specific
program that was found to be the
treatment of choice. For severely
desocialized patients, tangible tokens
within a "tight economy" (preventing
inflation and deflation), which
includes primary reinforcers as
backups, are necessary to provide the
immediate consequences required for
motivational purposes and to
facilitate new learning by providing
immediate feedback (e.g., Skinner
1938; Reynolds 1968). Such under-
socialized patients respond to few
purely social stimuli without new
learning and any time lag at all
allows interference from poor
attention and/or the inability to
receive and process information
(Wallace and Boone 1984). The
consistent staff verbal and nonverbal
interactions with patients,
contingently paired with token
disbursement and collection, not only
make the immediate social communi-
cation salient but, over time, patients
gradually learn to value and benefit
from social contact, verbal
instruction, and social reinforcement
alone. The token-economy structure

comes to function primarily as an efficient management system for patients as they develop internal controls and learn to value social stimuli, or for patients who are less severely disabled initially. The carefully developed and implemented token economy thus provides the immediacy of informational feedback and reinforcement with fine gradations for patients who need it and an overall management system for all patients until they function well enough to "buy out" of the use of tangible tokens at the highest step in the program.

Consistent pacing and generalization training. Considerable research on cognitive processes in schizophrenia indicates that either understimulating environments or hyperarousal can interfere with performance and/or the reception, processing, and action upon relevant versus irrelevant information. Many studies have reported deleterious effects from some intensive inpatient programs (Liberman, Falloon, and Wallace 1984). The careful structure and pacing of focused, positively reinforced concrete skills training in small steps over all waking hours, as included in the comprehensive inpatient social-learning program, in addition to the application of specific principles and procedures to particular problems, may be critical to effectiveness with the severely disabled. High-demand programs with less pacing in concrete problem solving and skills building may overstimulate patients who are hyperaroused or who are too deficient in cognitive skills to benefit from new information in time-limited training periods. Low-demand programs may fail to activate patients enough to attend to external stimuli or attempt to learn from the services offered. The careful pacing incorporated within the compre-

hensive social-learning program also ensures generalization of patient skills across staff and situations with gradual fading of dependence on immediate token reinforcement. As patients progress in the social-learning program, treatment and consultations are systematically shifted from staff-initiated problem identification, solution, and skills training through eliciting problem solving from patients to patient-initiated problem solving and action. Paul (1984) notes that these aspects of the social-learning inpatient and aftercare programs of the long-term comparative study are common to successful community or aftercare programs starting with less severely debilitated patients that have been reported by more than 10 clinical research groups in different locales.

Current Status of Social-Learning Treatment

Because of the experimental design of the long-term comparative study reported by Paul and Lentz, it is the only study to date in the institutional literature to provide cause-effect evidence for the absolute and relative effectiveness of total treatment programs. Consequently, the comprehensive social-learning program in that study is the clear treatment of choice for the severely debilitated chronic mental patient. The findings of the long-term comparative study also provide support and clarification for the effectiveness of a number of social-learning principles and procedures reported in a wide range of research and clinical studies (Liberman et al. 1974; Liberman, King, and DeRisi 1976; Wong et al. 1986). Given the results of the Paul and Lentz study, it is somewhat surprising that social-learning programs are still in the minority in psychiatric facilities.

Nevertheless, the importance of social-learning interventions can be seen both in the growing emphasis on patient accountability for behavior and in specialized psychiatric treatment programs for especially problematic patients.

General Incorporation of Accountability and Awareness of Incentives. The principles of social-learning have had at least two major effects on the current psychiatric treatment of institutionalized patients. First, holding patients accountable for their actions appears to be a common component of many programs. Level systems and earned privileges are routinely found as part of the treatment plan in most psychiatric hospitals. Even severely disorganized patients are often expected to perform simple self-care and housekeeping skills before being given access to television, grounds, and other privileges. Second, the philosophy of positively reinforcing adaptive behavior and punishing negative behavior (behavior modification) is well known to most mental health professionals today. Behavioral programs providing access to reinforcers (e.g., cigarettes, coffee) for adaptive behavior and limiting access to such reinforcers (e.g., time-out, extinction) for maladaptive behavior are integral parts of many psychiatric treatment plans. Nevertheless, well-organized, behaviorally oriented treatment programs are the exception rather than the rule (Boudewyns and Fry 1985).

Camarillo Clinical Research Unit (CRU). The CRU at Camarillo State Hospital is a unique psychiatric unit that strives to adhere rigorously to the social-learning principles found effective in the study reported by Paul and Lentz. This 11-bed unit, under the joint sponsorship of

Camarillo State Hospital and the UCLA Department of Psychiatry, has been in continuous operation since 1970, longer than any other social-learning unit extant. The day-to-day unit programming and token economy are very similar to those reported by Paul and Lentz, with objective data on patients being collected almost continuously. All patients are expected to adhere to specified rules backed by contingencies of reinforcement. In addition, specific intervention programs are developed for problems not addressed through general unit programming (e.g., water intoxication patients earn ground privileges for 7 days of controlled liquid intake; a loud, verbally abusive patient accrues small token fines for each verbal outburst). The clinical research objectives of this unit require special equipment (e.g., computers) and higher staff/patient ratios than throughout the hospital, so additional funding is provided through National Institute of Mental Health grants, the University, and the State hospital.

The CRU serves three purposes at Camarillo State Hospital. First, it is an intensive treatment facility for some of the most intractable patients at the hospital. Patients referred to the CRU are usually long-term, multiple-admission patients with numerous behavioral excesses and deficits. A review of the data from 199 patients discharged from the CRU before June 1985 indicated that the most common patient problems included deficits in self-care and grooming, social skills, and work and leisure skills, as well as excesses in assaultiveness, property destruction, stereotyped movements and posturing, and verbal aggression. Seventy-two percent of the patients exhibited one or more of these difficulties when admitted to the CRU, but even with this chronic, refractory population, behavioral programming yielded substantial benefits. The typical patient improved by at least 50 percent from baseline levels on the spectrum of targeted clinical problems. Shown in table 3 is the improvement rate, measured through direct observation of patient's behavior, of clinical problems of these patients.

This positive effect of social-learning treatment was also maintained in long-term followup

Table 3. Impact of behavioral treatment on the Camarillo/UCLA Clinical Research Unit

Levels of improvement for different categories of behavioral problems targeted for the 199 patients treated on the CRU (1970–1985)

	No. of patients with problem behaviors	Average improvement level
Prader-Willi syndrome	9	1.0
Spitting and mucous smearing	3	1.0
Entering restricted areas	1	1.0
Inactivity, amotivation	1	1.0
Psychogenic polydipsia	1	1.0
Vomiting	1	1.0
Sexual deviance	7	1.57
Self-injury	20	1.65
Verbal aggression	35	1.66
Peskiness, demandingness	18	1.67
Work and leisure skills	48	1.84
Self-care, grooming	141	1.86
Depression	13	1.92
Social skills deficit	70	1.96
Stereotypic movements and posturing	32	1.97
Social isolation	13	2.0
Screaming, tantrums	2	2.0
Obsessive-compulsive behavior	1	2.0
Assault and property destruction	85	2.16
Delusional speech	21	2.19
Incontinence	3	2.3
Hallucinations, self-talk	5	2.60
Mutism	1	4.0
Incoherent speech	1	4.0
Total Number of patient behaviors treated	532	
Overall average improvement level		2.06

Pretreatment baseline rates of behavior were compared to the rate of the same behavior during the last 3 weeks of CRU treatment. For each subject, % change was calculated and "improvement level" was assigned using the following scale: marked improvement (1) = 75–100% change from baseline; moderate improvement (2) = 50–74% change from baseline; slight improvement (3) = 25–49% change from baseline; and no improvement (4) = less than 25% improvement.

evaluation of discharged CRU patients. Banzett et al. (1984) found, in a 2-year followup of CRU patients discharged from 1975 to 1979, that 80 percent of respondents (patient relatives, conservators, or treatment staff) reported maintenance or further improvement both in the patients' overall functional and clinical status and in their original referring problems since discharge. Fifty-two percent of ex-patients were living in noninstitutionalized settings. Although this rate of discharge and community tenure is lower than that obtained by Paul and Lentz, the patient populations and goals are not directly comparable; this discharge rate is better than that of the chronic units at Camarillo State Hospital. It is especially impressive given the exceedingly low level of patient functioning resulting from the referral of intractable patients and the presence of State-mandated policies which prohibit use of more powerful primary reinforcers (e.g., food) for patients.

The CRU serves two other purposes at Camarillo State Hospital. It is a site for a variety of research projects directed toward improving functioning of institutionalized patients. Current research includes a study on the effects of innovative behavioral and pharmacotherapies on treatment-refractory schizophrenia and studies on social skills training (Wallace and Liberman 1985; Liberman et al. 1985) for severely withdrawn and thought-disordered schizophrenics. Finally, the CRU staff act as consultants on behavioral programming to other hospital staff who have identified patients for whom standard hospital treatment is ineffective. By acting as consultants, the CRU staff help to disseminate behavioral techniques and encourage the development of social-learning programs throughout the hospital. In

recent years, members of the CRU staff, under the auspices of the UCLA Clinical Research Center for Schizophrenia and Psychiatric Rehabilitation, have provided technical assistance and professional training to over 3,000 mental health and rehabilitation practitioners in psychiatric agencies and hospitals throughout the world.

Dissemination of the Comprehensive Social-Learning Program. Although the consulting and dissemination functions of special units such as the Camarillo CRU can be expected to increase the rehabilitative efficacy of psychiatric programs as well as contributing new clinical-research findings, the full benefits of social-learning programs like the one reported by Paul and Lentz cannot be achieved by service providers without the complete implementation of comprehensive inpatient and aftercare elements, including integrated assessment systems. On the basis of their obtained rates of change, Paul and Lentz estimate that effective implementation of social-learning programs could improve the functioning of disabled chronic psychiatric patients to a level of acceptability for community placement in 26–30 weeks. In fact, given appropriate implementation mechanisms, social-learning programs could be conducted in community-based residential facilities as well as in hospitals and mental health centers.

The major impediment to widespread dissemination of the comprehensive social-learning program has been the unavailability of the assessment systems to provide the detailed information needed for the proper implementation and conduct of the program. Since Paul and his colleagues have completed the research and development for the

TSBC/SRIC System to serve as the core assessment strategy for nearly any inpatient or residential program and population, the materials required to implement the TSBC/SRIC System (Paul, in press d) and the social-learning CFRS (Paul and Shelite, in preparation) will soon be available.

Recent Developments in Social-Learning Programs

Since the publication of the Paul and Lentz (1977) study, other researchers have continued to investigate social-learning approaches to the rehabilitation of the chronically mentally ill. In line with the work of Paul and Lentz, these authors typically find that social-learning programs result in dramatic improvements in behavior (Baker et al. 1977; Fullerton, Cayner, and McLaughlin-Reidel 1978; McCreadie, Main, and Dunlop 1978; Nelson and Cone 1979; Stoffelmayr, Faulkner, and Mitchell 1979; Stone and Nelson 1979; Turner and Luber 1980; Woods, Higson, and Tannahill 1984; Wong et al. 1985). Nevertheless, critical research and treatment issues remain.

One area of investigation concerns the identification of the remediative elements within the token economy program. For example, Baker et al. (1977) found that both a token economy patient group *and* a yoked control group improved in behavior, raising the possibility that improvement results from some other factor (e.g., enriched positive reinforcements) than contingent reinforcement. Studying a token economy program in a day hospital, researchers from the UCLA Clinical Research Center found that the specific behavioral goals and social reinforcement contingencies inherent in the economy accounted for therapeutic change rather than the

tangible, backup rewards (Liberman et al. 1977). Similarly, Turner and Luber (1980) reported that patients judged *feedback* about performance (and not tokens) as being the most critical aspect of the program. Further research is needed to determine the relative importance of tokens in providing information and motivation. In addition, alternate explanations for the success of the token economy must be developed and tested.

A second important issue concerns generalization of improvements. Maintenance and generalization of treatment gains are, of course, critical tests of the utility of treatment interventions. For social-learning programs, the crucial question is: Are token economies primarily prosthetic, resulting in behavioral change only when it is supported by contingent token reinforcement; or are they thera-peutic, resulting in long-term behavioral change across settings? The answer to this question has not been fully determined. Woods, Higson, and Tannahill (1984) found that there were extreme differences among patients' maintenance of behavioral improvements when contingent tokens were changed to noncontingent tokens. Some patients showed no decrements in performance while others deterio-rated almost immediately. Interest-ingly, the authors' data suggested that rapid initial rates of change when the token economy was applied predicted maintenance. These investi-gators suggest that some patient improvements are maintained because they are "trapped" by positive social reinforcement. Certainly, identifying patient variables that are related to the development and maintenance of improvements in functioning is an important issue which merits attention.

Finally, the extreme deficits of treatment-refractory schizophrenics raise the possibility that a social-learning program may be a necessary but insufficient condition for successful community tenure of these patients. Two recent studies offered structured, intensive social skills training to treatment-resistant schizo-phrenics as an adjunct to their treatment on a token economy hospital unit with very encouraging results (Massel et al. 1985; Wallace and Liberman 1985). Patients' social skills increased dramatically in both studies, and Wallace and Liberman (1985) found that participation in social skills training actually decreased probability of relapse during a 2-year followup. This addition of specialized remediation of skill deficits to a strong social-learning program maximizes patients' likelihood of behavioral improvement and may augment the benefits of behavioral rehabilitation (Liberman and Evans 1985).

Because psychosocial interventions based on social-learning principles are very effective in reducing maladaptive behavior and increasing adaptive functioning of "hardcore" institutionalized psychiatric patients, reducing medications, facilitating discharge and maintaining community tenure, they merit continued attention, refinement, and dissemination. The comprehensive social-learning program, including the integrated assessment systems and inpatient and aftercare technologies, is the clear preferred treatment for chronically institu-tionalized mental patients on economic, clinical, and humanitarian grounds.

References

Baker, R.; Hall, J.K.; Hutchinson, K.; and Bridge, G. Symptom changes in chronic schizophrenic patients on a token economy: A controlled experiment. *British Journal of Psychiatry*, 131:381-393, 1977.

Banzett, L.K.; Liberman, R.P.; Moore, J.W.; and Marshall, B.D. Long term follow-up of the effects of behavior therapy. *Hospital & Community Psychiatry*, 35:277-279, 1984.

Bellack, A.S., and Mueser, K.T. A comprehensive treatment program for schizophrenia and chronic mental illness. *Community Mental Health Journal*, in press.

Boudewyns, P.A., and Fry, T.J. "Token Economy Programs in VA Medical Centers: Where Are They Today?" Presented at the Annual Meeting of the American Psycho-logical Association, Los Angeles, CA, 1985.

Dickey, B.; Gudeman, J.; Hellman, S.; Donatella, A.; and Greenspoon, L. A follow-up of deinstitutionalized chronic clients four years after discharge. *Hospital & Community Psychiatry*, 32:326-329, 1981.

Friedman, I.; von Mering, O.; and Hinko, E.N. Intermittent patient-hood: The hospital career of today's mental patient. *Archives of General Psychiatry*, 14:386-392, 1966.

Fullerton, D.I.; Cayner, J.J.; and McLaughlin-Reidel, T. Results of a token economy. *Archives of General Psychiatry*, 35:1451-1453, 1978.

Gardos, G., and Cole, J.O. Mainte-nance antipsychotic therapy: Is the cure worse than the disease? *American Journal of Psychiatry*, 133:32-36, 1976.

Goffman, E.C. *Asylums*. Garden City, NY: Doubleday, 1961.

Honigfeld, G. *Nurses Observation Scale for Inpatient Evaluation (NOSIE-30)*. Glen Oaks, NY: Honigfeld, 1966.

Kirk, S.Q., and Therrien, M.E. Community mental health myths and the fate of former hospitalized patients. *Psychiatry*, 38:209–217, 1975.

Kohen, W., and Paul, G.L. Current trends and recommended changes in extended-care placement of mental patients: The Illinois system as a case in point. *Schizophrenia Bulletin*, 2:575–594, 1976.

Lehman, A. The well-being of chronic mental patients. *Archives of General Psychiatry*, 40:369–373, 1983.

Lehman, A.F.; Ward, N.C.; and Linn, L.S. Chronic mental patients: The quality of life issue. *American Journal of Psychiatry*, 139:1271–1276, 1982.

Liberman, R.P. Social factors in schizophrenia. In: Grinspoon, L., ed. *Psychiatry 1982 Annual Review*. Washington, DC: American Psychiatric Press, 1982. pp 97–111.

Liberman, R.P., and Evans, C.C. Behavioral rehabilitation for chronic mental patients. *Journal of Clinical Psychopharmacology*, 5 (Supplement):8s–14s, 1985.

Liberman, R.P.; Falloon, I.R.H.; and Wallace, C.J. Drug-psychosocial interactions in the treatment of schizophrenia. In: Mirabi, M., ed. *The Chronically Mentally Ill. Research and Services*. New York: SP Medical & Scientific Books, 1984. pp. 175–212.

Liberman, R.P.; Fearn, C.H.; DiRisi, W.J.; Roberts, J.; and Carmona, M. The credit incentive system: Motivating the participation of patients in a day hospital. *British Journal of Social and Clinical Psychology*, 16:85–94, 1977.

Liberman, R.P.; King, L.; and DeRisi, W.J. Behavior analysis and modification in community mental health. In: Leitenberg, H., ed.

Handbook of Behavior Therapy and Behavior Modification. Englewood Cliffs, NJ: Prentice Hall, 1976. pp. 566–603.

Liberman, R.P.; Massel, H.K.; Mosk, M.D.; and Wong, S.E. Social skills training for chronic mental patients. *Hospital & Community Psychiatry*, 36:396–403, 1985.

Liberman, R.P.; Wallace, C.J.; Teigen, J.; and Davis J. Interventions with psychotics. In: Calhoun, K.S.; Adams, H.E.; and Mitchell, E.M., eds. *Innovative Treatment Methods in Psychopathology*. New York: John Wiley & Sons, Inc., 1974. pp. 323–412.

Licht, M.H., and Paul, G.L. The Staff-Resident Interaction Chronograph (SRIC). In: Hersen, M., and Bellack, A.S., eds. *Dictionary of Behavioral Assessment Techniques*. New York: Pergamon Press, in press.

Massel, H.K.; Bowen, L.; Wong, S.; Mosk, M.; Zarate, R.; and Milan, M. "Social Skills Training: Acquisition and Generalization Effects." Presented at the Annual Meeting of the Association for the Advancement of Behavior Therapy, Houston, TX, 1985.

McCreadie, R.G.; Main, C.J.; and Dunlap, R.A. Token economy, pimozide and chronic schizophrenia. *British Journal of Psychiatry*, 133:179–181, 1978.

Mechanic, D. *Mental Health and Social Policy*. Englewood Cliffs, NJ: Prentice-Hall, 1969.

Nelson, G.L., and Cone, J.D. Multiple baseline analyses of a token economy for psychiatric inpatients. *Journal of Applied Behavior Analysis*, 12:255–271, 1979.

Paul, G.L. Residential treatment programs and aftercare for the chronically institutionalized. In: Mirabi, M., ed. *The Chronically*

Mentally Ill: Research and Services. New York: S.P. Medical and Scientific Books, Spectrum Publications, 1984. pp. 239–262.

Paul, G.L. Net relative cost of the maximum potential utility paradigm. In: Paul, G.L., ed. *Principles and Methods to Support Cost-Effective Quality Operations: Assessment in Residential Treatment Settings, Part 1*. Champaign, IL: Research Press, 1986a. pp. 165–190.

Paul, G.L. Rational operations in residential treatment settings through ongoing assessment of client and staff functioning. In: Peterson, D.R., and Fishman, D.B., eds. *Assessment for Decision*. New Brunswick, NJ: Rutgers University Press, 1986b. pp. 1–35.

Paul, G.L., ed. *Observational Assessment Instrumentation for Service and Research—The Time-Sample Behavioral Checklist: Assessment in Residential Treatment Settings, Part 2*. Champaign, IL: Research Press, in press a.

Paul, G.L., ed. *Observational Assessment Instrumentation for Service and Research—The Staff-Resident Interaction Chronograph: Assessment in Residential Treatment Settings, Part 3*. Champaign, IL: Research Press, in press b.

Paul, G.L., ed. *Observational Assessment Instrumentation for Service and Research—The Computerized TSBC/SRIC Planned-Access Observational Information System. Assessment in Residential Treatment Settings, Part 4*. Champaign, IL: Research Press, in press c.

Paul, G.L., ed. *Observational Assessment Instrumentation for Service and Research—The TSBC/SRIC System Implementation Package: Assessment in Residential*

Treatment Settings, Part 5.
Champaign, IL: Research Press, in press *d.*

Paul, G.L., and Bernstein, D.A. Anxiety and clinical problems. In: Spence, J.T.; Carson, R.C.; and Thibaut, J.W., eds. *Behavioral Approaches to Therapy.* Morristown, NJ: General Learning Press, 1976. pp. 47–87.

Paul, G.L., and Lentz, R.J. *Psychosocial Treatment of Chronic Mental Patients: Milieu Versus Social-Learning Programs.* Cambridge, MA: Harvard University Press, 1977.

Paul, G.L., and Lentz, R.J. *Psychosocial Treatment of Chronic Mental Patients: Milieu Versus Social-Learning Programs.* 2nd ed. Champaign, IL: Research Press, in preparation.

Paul, G.L., and Licht, M.H. The Clinical Frequencies Recording System (CFRS). In: Hersen, M., and Bellack, A.S., eds. *Dictionary of Behavioral Assessment Techniques.* New York: Pergamon Press, in press *a.*

Paul, G.L., and Licht, M.H. The Time-Sample Behavioral Checklist (TSBC). In: Hersen, M., and Bellack, A.S., eds. *Dictionary of Behavioral Assessment Techniques.* New York: Pergamon Press, in press *b.*

Paul, G.L., and Mariotto, M.J. Potential utility of the sources and methods: A comprehensive paradigm. In: Paul, G.L., ed. *Principles and Methods to Support Cost-Effective Quality Operations: Assessment in Residential Settings, Part 1.* Champaign, IL: Research Press, 1986. pp. 113–164.

Paul, G.L., and Shelite, I. The Clinical Frequency Recording System (CFRS): Social-Learning Program

Forms. Supplement to: Paul, G.L., and Lentz, R.J. *Psychosocial Treatment of Chronic Mental Patients.* 2nd ed. Champaign, IL: Research Press, in preparation.

Paul, G.L.; Tobias, L.L.; and Holly, B.L. Maintenance psychotropic drugs in the presence of active treatment programs: A "triple-blind" withdrawal study with long-term mental patients. *Archives of General Psychiatry,* 27:106–115, 1972.

Reynolds, G.S. *A Primer of Operant Conditioning.* Glenview, IL: Scott, Foresman, 1968.

Rhoades, L.J. *Treating and Assessing the Chronically Mentally Ill: The Pioneering Research of Gordon L. Paul.* (DHHS Publication No. ADM 81-1100) Rockville, MD: Science Reports Branch, Division of Scientific and Public Information, National Institute of Mental Health, 1981.

Rosen, A.J.; Sussman, S.; Mueser, K.T.; Lyons, J.S.; and Davis, J.M. Behavioral assessment of psychiatric inpatients and normal controls across different environmental contexts. *Journal of Behavioral Assessment,* 3:25–36, 1981.

Skinner, B.F. *The Behavior of Organisms.* New York: Appleton-Century-Crofts, 1938.

Spivack, G.; Siegel, J.; Sklaver, D.; Deuschle, L.; and Garrett, L. The long-term client in the community: Lifestyle patterns and treatment implications. *Hospital & Community Psychiatry,* 33:291–295, 1983.

Stoffelmayr, B.E.; Faulkner, G.E.; and Mitchell, W.S. The comparison of token economy and social therapy in the treatment of hard-core schizophrenic patients. *Behavior Analysis and Modification,* 3:3–17, 1979.

Stone, M.E., and Nelson, G.L. Coordinated treatment for long-term psychiatric inpatients. *Social Work,* 15:406–410, 1979.

Turner, S.M., and Luber, R.F. The token economy in day hospital settings: Contingency management or information feedback. *Journal of Behavior Therapy and Experimental Psychiatry,* 11:89–94, 1980.

Wallace, C.J., and Boone, S.G. Cognitive factors in the social skills of schizophrenic patients: Implications for treatment. In: Spaulding, W.D., and Cole, J.K., eds. *Nebraska Symposium on Motivation, 1983.* Lincoln, NE: University of Nebraska Press, 1984. pp. 283–318.

Wallace, C.J., and Liberman, R.P. Social skills training for patients with schizophrenia: A controlled clinical trial. *Psychiatry Research,* 15: 239–247, 1985.

Wing, J.K., and Freudenberg, R.K. The response of severely ill chronic schizophrenic patients to social stimulation. *American Journal of Psychiatry,* 118:311–322, 1961.

Wolkon, G.H.; Karman, M.; and Tanaka, H.T. Evaluation of a social rehabilitation program for recently released psychiatric patients. *Community Mental Health Journal,* 7:312–322, 1971.

Wong, S.E.; Terranova, M.D.; Bowen, L.; Zarate, R.; Massel, H.K.; and Liberman, R.P. "Reducing Bizarre Stereotypic Behavior in Chronic Psychiatric Patients: Effects of Supervised and Independent Recreational Activities." Unpublished manuscript, 1985.

Wong, S.E.; Massel, H.K.; Mosk, M.D.; and Liberman, R.P. Behavioral approaches to the treatment of schizophrenia. In: Burrows, G.D.; Norman, T.R.; and Rubenstein, G., eds. *Handbook of Studies on Schizophrenia.* Amsterdam: Elsevier Science Publishers, 1986. pp. 79–100.

Woods, P.A.; Higson, P.J.; and Tannahill, M.M. Token economy

programmes with chronic psychiatric patients: The importance of direct measurement and objective evaluation for long-term maintenance. *Behaviour Research and Therapy*, 22:41–51, 1984.

Acknowledgment

The Authors

Shirley M. Glynn, Ph.D., is a Staff Research Associate at the Camarillo/UCLA Research Center, Camarillo, CA. Kim T. Meuser, Ph.D., is an Assistant Professor of Psychiatry at the Medical College of Pennsylvania at the Eastern Pennsylvania Psychiatric Institute, Philadelphia, PA.

Audio Tapes on Schizophrenia Available

Guilford Publications announces Schizophrenia: Interview Strategies for Detecting Characteristic Symptoms, a training model by BMA Audio Cassettes Developed at the UCLA Neuropsychiatric Institute by Dr. Ian Falloon and Dr David Lukoff, the package includes two cassette tapes and a useful manual with instructive information designed for researchers, psychiatric residents, and psychology interns

The program focuses on perceptual, thought, and communication dysfunctions specific to schizophrenia Drs. Falloon and Lukoff use an experiential, interactive approach to demonstrate how to elicit and evaluate distinctive qualities of a patient's experience and to relate this information to today's complex diagnostic standards. The program addresses the assessment of thought interference, hallucinations, delusions, and speech and behavioral disturbances Clear definitions of symptoms, dramatized interviews, and critical commentary encourage listeners to develop their ability to detect characteristic indicators of schizophrenia, as they compare their own conclusions with those of the authors

BMA also offers The Initial Interview: Evaluation Strategies for DSM-III Diagnosis, by Robert Spitzer, M.D , and Janet Williams, D.S.W., A.C S W This set of tapes presents interviewing strategies which can be applied across the full range of *DSM-III*, while focusing on four representative symptom types (anxiety, depression, crisis adjustment, and psychosis) The program demonstrates the Structured Clinical Interviews for *DSM III* (SCID) method which Drs Spitzer and Williams pioneered to gather more reliable information from confused or relatively inarticulate patients and to establish procedural guidelines for interviewing

For more information or to order, write to **BMA Audio Cassettes, 200 Park Avenue South, New York, NY 10003** or call toll-free **800-221-3966** (in New York State and Canada, call **212-674-1900**).