behavioral therapies and the treatment of schizophrenics*

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... Mr. C, diagnosed as brain-damaged and schizophrenic... gradually became more and more unmanageable... continually disrupting ward routine, both by provoking other patients and by directly plaguing the staff with demands. Mr. C's rehabilitation and psychotherapy were retarded because of his direct lack of motivation as well as the staff's unwillingness to have anything to do with him. The problem... was to help the staff better manage Mr. C so that he could spend more of his time and energy in therapeutic endeavors—and so that the staff would be less anxious when dealing with him and therefore more willing to work with him.

The first step was to get an accurate and specific understanding of what types of behavior Mr. C was engaging in... to determine how the staff was reacting... Mr. C's most obnoxious behaviors were: urinating and defecating on the floor; shouting; swearing; upsetting other patients and the staff; name-calling; constantly begging cigarettes from patients and staff; demanding other things, like having staff tie his shoes; striking at other patients. It also seemed evident that Mr. C's inappropriate conduct usually was followed by some kind of staff attention... .

Two procedures for eliminating Mr. C's disruptive behavior were discussed with staff... Social attention would no longer be given Mr. C following inappropriate behavior... Social attention and cigarettes... can... be the consequence of socially acceptable behavior. This would be done by presenting Mr. C with a tangible reward for every fifteen minutes he acted appropriately... a 3"x5" file card, the message upon which communicated that Mr. C has been acting appropriately, that he has not bothered, pestered, or annoyed the staff or other patients, and that two cards could be turned in for two cigarettes... the card... would also serve to cue the staff... so that they could socially reinforce him for... appropriate behavior.

Mr. C's change in behavior was very dramatic... After two days the staff reported Mr. C as "much improved," and by the sixth day of the program as "markedly improved... ."

At the end of two weeks Mr. C requested that he not be bothered with the cards anymore. Money received as a Christmas gift would allow him to buy cigarettes. By this time, however, the staff was "spontaneously" reacting positively to Mr. C's appropriate behaviors. They were also continuing to ignore any disruptive behaviors. Furthermore, Mr. C was engaging in a variety of behaviors which tend to be supported naturally by the environment; for example, approaching staff, patients, and ward visitors to engage in relatively reasonable conversation. Thus, it was no longer necessary to present cigarettes contingent upon appropriate behavior in order to maintain the gains Mr. C had made.

Mr. C had gone from a disheveled, verbally obnoxious, physically assaultive individual to one who now not only could satisfy his needs in socially acceptable ways, but who could begin again to participate with staff in distinct rehabilitation and psychotherapy enterprises. [Sushinsky 1970, pp. 24-26]

Behavior modification? Or just common sense? It might be argued that the procedures discussed above are similar to those used everyday by fairly skilled parents as they deal with behaviors of unruly offspring. Indeed, the average bartender might well have recommended Mr. C's treatment program—assuming, of course, that he had never heard of "mental illness."

Without any doubt, there is a strong "common sense" appeal in this movement that has spread so rapidly throughout the domain of clinical treatment. The seduc-
tive simplicity of behavioral techniques, however, has
tempted many a novice into a rendezvous with humility
and has often sent seasoned professionals scurrying back
to the drawing boards to refine their methods. The
common sense is still there, to be sure, but a fairly
complex technology is also emerging. While this does not
yet (or in the foreseeable future) represent a panacea, it
does provide, if applied to the right patient, with the right
problem at the right time and under the right conditions
(Paul 1969a), some welcome steps forward in our search
for effective ways of dealing with aberrant behavior.

Behavior Therapy—What Is It?

In a recent publication, "Experimental-Behavioral
Approaches to Schizophrenia," Paul (1974) pointed out
that neither of the terms defining his subject—"behavior
therapy" or "schizophrenia"—possesses "adequate conno-
tative or denotative meaning for clear communication."
The same, of course, can be said about the present review;
nevertheless, some attempt at definition is in order.
Behavior therapy has been defined as "treatment deduci-
ble from the sociopsychological model that aims to alter a
person's behavior directly through application of general
psychological principles" (Ullmann and Krasner 1969, p.
244). Broadly speaking, this definition is adequate,
although one might sometimes search in vain for a
psychological principle on which to hang a particular
therapeutic technique. It might be even more productive
to think of behavior therapy in terms of three common
strategies or attitudes that seem to have been embraced
by the vast majority of researchers and practitioners who
identified with the movement.

1. The "strategy ... of experimental-behavioral
science" (Paul 1974) has been broadly adopted. This
strategy involves the functional analysis of behavior—a
systematic search for relevant antecedent and consequent
events—followed by treatment within the hypothesis-
testing tradition of science. In addition, the delineation of
procedures and dependent measures should meet the
requirements of the scientific community concerning
quantifiability and replicability. Even within a "loose
clinical" setting, the strategy applies. It must be conceded,
of course, that many methodologically weak reports
appear in the literature; nevertheless, the empirical con-
science underlying the behavior therapy movement con-
tinues to reproach scientific ineptness, and in so doing,
pushes us toward a continual refinement of principles and
techniques.

2. The behavior therapist does not treat psychopathol-
ogy; rather, he tries to help the individual change
behaviors—cognitive and affective as well as overt behaviors.
An effort is made to correct learning and performance
deficits in order to increase the individual's options in the
community at large; emphasis is also placed on the
elimination of symptoms that have caused societal rejec-
tion and subjective stress. Often, the goals of intervention
involve changes in frequency, timing, and intensity as well
as changes in the topography of target behaviors.
Because these target behaviors are often affective or
cognitive in nature, evaluation of behavior change is not
limited to simple recording of frequency of overt actions.
As Lambley (1973) has pointed out, a patient may stop
communicating hallucinations or delusions in an environ-
ment that disapproves of such thoughts; but the thoughts
themselves may nonetheless remain and trouble the
patient. Hence, evaluation often involves multiple opera-
tions that converge on covert, inferred targets (e.g.,
Meichenbaum and Cameron 1973).

3. A behavioral approach involves an active search not
only for internal events and processes, but also for
environmental events that, if manipulated, may result in
an increase in desirable behaviors and a decrease in
undesirable behaviors. Although the search for environ-
mental reinforcers in the case study presented above
seems to be a very obvious tactic, there was a time in our
recent history when the therapist would not have looked
in that direction. Only two decades ago, Skinner (1953)
pointed out: "Many theories of human behavior . . . neg-
llect or ignore the action of the environment. This is
almost always true in clinical psychology" (p. 129). With
the advent of behavioral strategies, the surrounding world
took on a great deal of importance, and the heightened
sensitivity of the behavior therapist to the effects of the
immediate environment sometimes has had surprising
results. For example, Nydegger (1972) found that halluc-
inatory and delusional behaviors, generally considered
nonoperant in etiology, were maintained because they
were functional in removing a patient from conflict situa-
tions. And Lebow, Gelfand, and Dobson (1970) found that
a behavior "probably of physiological etiology" (a respir-
atory stridor) could be eliminated by contingency management. Although the brain of the behavior therapist may acknowledge genetic or physiological factors in the etiology of schizophrenic behaviors, his nose is always sniffing around the environment.

Schizophrenia—Its Meaning for a Behavior Therapist

Among behavior therapists, there may be even less consensus concerning the meaning of the word "schizophrenia" than there is among mental health professionals in general. Behavior therapists are certainly not alone in decrying the lack of reliability of diagnosis (e.g., Mosher and Gunderson 1973); nor are those who assert that the concept is essentially unrelated to treatment wanting for company outside the behavioral arena (e.g., Kubie 1971). Just as drug therapy is based on observable behavior changes rather than diagnosis (Ban 1972), so also is behavior therapy empirically, not diagnostically, based.

Since behavior therapy often focuses on behaviors that cause problems, the treatment of "schizophrenics" tends to focus on those behaviors that have gotten someone diagnosed as "schizophrenic." Meehl (1962) suggests four broad categories of such behaviors: thought disorder, or cognitive slippage; interpersonal aversiveness; anhedonia; and ambivalence. But even these categories are too abstract for treatment applications, and they must be broken down into more specific targets; for example, delusions, hallucinations, attentional deficits, deviant associations, and verbal progressions (thought disorder); deviant motor behavior, "crazy" acts, assaultiveness, anxiety, and other inappropriate affect (interpersonal aversiveness, ambivalence); apathy, withdrawal, and response deficits (anhedonia, ambivalence). In summary, while the focus of the present review is on the treatment of "schizophrenia," the nature of the behavioral approach is such that the reports to be covered are focused on "characteristic problem behaviors of schizophrenics" or simply on problem behaviors in "schizophrenic clients."

Goals of Behavior Therapy

How does one evaluate the effectiveness of a treatment program—any treatment program? By examining how close it comes to reaching certain goals. Unless we can agree on some legitimate goals for behavior therapy, this writer is in no position to lead the reader into an evaluation of the procedures.

Goal of Community Adjustment

The most obvious goal, one often specified for behavioral programs, is that of changing the individual's behaviors that he can remain outside the hospital (Atthowe and Krasner 1968, Lloyd and Abel 1970, and Schaefer and Martin 1966). Davison (1969) has stated that all therapeutic programs ultimately ought to be evaluated on this basis, and in slightly stronger language Carlson, Hersen, and Eisler (1972) have ruled out all other criteria for clinical success. London (1964), in his typically rich style, said a decade ago:

It is marvelous to induce psychotics to ask for gum after years of total silence, even if months of effort are required. But it is not clear exactly when or whether this kind of maneuver will equip them to leave a hospital and function again in society. [p. 117]

Because of the often insurmountable problems faced in conducting research in institutional settings (Davis 1972) and the numerous confounding variables hopelessly wedded to such major dependent measures of success or failure as release rates and recidivism rates (Maley, Feldman, and Ruskin 1973, Martin 1970, and Kazdin and Bootzin 1972), the literature dealing with community-adjustment goals will not yet withstand the scrutiny of a magnifying glass wielded by an expert in experimental design. Nevertheless, evidence now accumulating indicates that strides have been made toward the goal of community-adjustment by some programs (Birky, Chambliss, and Wasden 1971, Foreyt et al. 1975, Heap et al. 1970, Schaefer and Martin 1966, and Shean and Zeidberg 1971).

As reflected above, most of the extant literature dealing with goals of behavior therapy focuses on the chronic, institutionalized patient. The overall goal of satisfactory community adjustment holds, of course, for all schizophrenic individuals—inpatient, outpatient, acute, or chronic—but the intermediate, practical clinical goals will differ for different types of patients and will be based upon both the patient's level of functioning at the time of entry into treatment and upon available resources. Treatment of acute schizophrenics on an extramural basis
would typically involve a limited number of problem behaviors, with a focus on the elimination of problems which brought the individual into treatment, on restoration of functioning to at least his previous level, and, if possible, on bringing about adaptive changes to prevent future difficulty. For the acute intramural patient, the most immediate goal is getting the individual back into the outside environment as quickly as possible—as soon as excessive psychotic problems are under control—so that treatment can be continued on an extramural basis. Chronic patients, by definition intramural, usually exhibit excessive bizarre behaviors and may have widespread behavioral deficits. Hence, many intramural, limited goals may have to be specified and met before extramural plans are laid for the chronic case.

In general, intermediate goals, which presumably will eventuate in good community adjustment, have fallen into four broad categories. Henderson (1971) and Paul (1969b) agree on three such categories of behavioral targets:

- Reduction or elimination of bizarre behaviors;
- Development of effective interpersonal and social skills (self-care, interpersonal interest and interaction, and communication skills); and
- Development of vocational habituation and primary literacy skills—"instrumental role performance," as termed by Paul (1969b).

A category is also beginning to emerge, involving important cognitive factors such as self-image or self-esteem (DiScipio and Trudeau 1972) and problem solving strategies (Meichenbaum and Cameron 1973).

The vast majority of studies reported in the behavior modification literature do show significant changes in behaviors that fall into one of the above categories and hence might be seen to relate to the overall goal of community adjustment. Furthermore, it should be noted that behavioral improvements do not operate as discrete events that, once established, must simply wait for the individual's release until they can contribute to his adjustment in the outside world. The effects of important changes are felt immediately within the hospital setting, where they contribute to the vast complex set of interactions experienced by the patient in his hospital environment. Staff attitudes are changed (Gripp and Magaro 1971, McReynolds and Coleman 1972, Wagner and Paul 1970, and Winkler 1970); parents and significant visitors respond differently to the patient (Ayllon 1963); other patients on the ward may be affected (Hersen et al. 1972); and the patient may become much more suitable for other rehabilitation programs within the treatment setting (Agras 1967). Who can accurately assess the extent of behavioral changes initiated within such an interdependent environment? Which among these changes will contribute to the ultimate goal of extrahospital adjustment?

Ward Goals

Goals which generate considerably more controversy are those which suggest that the patient may never be "cured" or those which involve changing the patient's behavior for the benefit of others. Is it appropriate to strive to improve the patient's lot within the hospital even when there is little or no hope that he will ever be released? Answering emphatically in the affirmative are Maley, Feldman, and Ruskin (1973), who state:

Many chronic patients may never leave institutional care, but still may greatly benefit from active treatment programs which train them to take better care of themselves and to live more dignified and productive lives within the institution. [p. 141]

It can be argued that being dry is better than being wet, having clean teeth and acceptable breath is better than having rotten teeth and halitosis, and having a clean body is better than suffering with skin conditions which can come from poor hygiene.

From a general health standpoint, it can be further argued that activity is better than inactivity, even for the patient with little chance of release. In addition, there is evidence suggesting that the activity level of one patient may have therapeutic effects on another patient (Hersen et al. 1972).

Goals involving safety of patients and staff need no justification. For many people on a ward, it is better that a patient not set fires (see Royer, Flynn, and Osadca 1971 for a case history), that he not break glass (Agras 1967), and that he not be physically assaultive (Sushinsky 1970). Such goals may or may not be related to community adjustment for a given patient, but there can be no question about their appropriateness.

Need these points even be made? Yes, they must be, primarily because people have focused so strongly on the
single goal of community adjustment that they have failed
to realize that there are many other legitimate goals to
which behavior therapy can be addressed, goals which
may be ideally suited to behavioral methods.

Goals Affecting Staff

Changing the behavior of patients for the benefit of
staff raises immediate suspicion and criticism (e.g.,
Goldiamond 1974); nevertheless, some goals relating to
staff might indeed be worth examining. Agras (1967), for
example, reports that the restoration of normal eating
behavior in a patient saved many hours of staff time that
would otherwise have been spent in coaxing him to eat or
in tube-feeding him. Parrino, George, and Daniels (1971)
found that by charging tokens for unprescribed pills
(sleeping pills, minor tranquilizers, and aspirins) the staff
saved much time that formerly had been spent in
dispensing pills and in attending to patients' physical
complaints. Ayllon and Azrin (1968b) state that staff
members had fewer duties to perform on the behavior
modification ward. Furthermore, it is not surprising that
programs which produce more socially acceptable patients
also often result in increases in staff morale, responsibil-
ity, accomplishment, and hopefulness (Ayllon and Azrin
1968b, Gripp and Magaro 1971, Krasner and Atthowe
1971, McReynolds and Coleman 1972, Milby, Pender-
Winkler (1970) found, for example, that staff absenteeism
dropped 24 percent after a token program was introduced
(as compared to a 3 percent drop for a control ward). One
can only speculate about the extended results of such
changes in staff attitudes and behaviors. Perhaps there is
more time for involvement in therapeutic activities, as
suggested by Pomerleau, Bobrove, and Harris (1972);
perhaps the staff's more positive attitudes contribute to
the happiness and progress of patients; or perhaps the
staff merely face less unpleasantness in their work. What-
ever the outcome, the use of behavior therapy to attain
staff goals should be given consideration.

In summary, it is my strong feeling that the goal of
community adjustment, while certainly of paramount
importance, is only one of many legitimate goals of
behavior therapy. Such a narrow focus might well lead us
to discard treatment methods that could result in far more
healthy and happy adjustments for patients within the
institution, improved working conditions for staff, and
economic benefits which could stretch the mental health
dollar manyfold.

Behavioral Procedures in Individual
and Small Group Settings

Applications of behavior therapy with schizophrenic
patients have involved the broad spectrum of basic
procedures so commonly found in the animal and human
learning literature: direct primary reinforcement, second-
ary reinforcement, extinction, shaping, fading, modeling,
and scheduling. With the schizophrenic population, few of
these procedures have been systematically researched in
isolation from the others, but enough work has been done
to indicate that some of the procedures do effect dramatic
changes. In this section, some of the simpler procedures
will be discussed first, followed by more complex treat-
ment approaches that involve combinations of basic
procedures and sequential strategies.

Direct Reinforcement Procedures

Social Reinforcement

No doubt the most widely used and recommended
behavior therapy procedure involves the systematic giving
or withholding of social reinforcement (praise or ap-
proval). Because social reinforcement is generally thought
of as a conditioned reinforcer, the suggestion has often
been made that it should be systematically paired with
tangible reinforcers in order to increase its reinforcing
properties (e.g., Atthowe and Krasner 1968 and Kazdin
and Bootzin 1972). Indeed, there is now some evidence to
indicate the validity of such assumptions (Theobald and
Paul, in preparation). For many, or most patients, the
reinforcing value of praise or attention is strong before
systematic pairing, and a number of reports indicate that
when carefully used, social reinforcement alone can effect
changes in the behavior of institutionalized patients. The
case described at the outset of this paper (Sushinsky
1970) illustrates the possibilities of behavior change when
desirable behavior is attended to and undesirable behavior
is ignored. In a very early report of the application of
operant techniques with psychotic patients, Ayllon and
Michael (1959) found that merely eliminating attention to problem behaviors produced a dramatic change in the behavior of two patients. Rickard, Dignam, and Horner (1960) reported significant changes in delusional and irrational speech in a patient as a result of "looking away" when such delusional talk occurred and "attending" when the patient spoke rationally. Agras (1967) suspected that attention was reinforcing the behavior of "not eating" in a 34-year-old male who weighed 85 pounds. When the patient was systematically ignored for not eating, he established satisfactory eating habits within 5 days. Ravensborg (1972) used praise in a moderately successful effort to increase "interpersonal awareness" by teaching patients the names of others in their environment, and Moore and Crum (1969) used only systematic approval and acceptance vs. withdrawal of social interaction to produce a 35-pound weight loss in an obese schizophrenic woman. In a controlled group study, DiScipio and Trudeau (1972) used group discussion plus positive verbal reinforcement to improve grooming and self-care significantly. In addition, they showed that improvements in these areas generalized to improvements on measures of self-esteem and paranoid belligerence.

Until a study by Glickman, Plutchik, and Landau (1973), no one had reported on the effect of social reinforcement that was independent of material rewards or verbal approval. Their study evaluated the effect of posting stars beside the names of patients who had completed four target behaviors without being reminded (combing hair, washing face, making bed, and performing such ward assignments as cleaning ashtrays or washing the sinks). They found that the stars increased these behaviors considerably, but a much greater increase was observed when only those who had earned stars were admitted to the dining room for lunch.

Evidence from the above studies and from numerous studies on nonpsychotic patients is strong enough to show that social reinforcement is a powerful behavior change device. It would therefore seem that staff on all mental hospital wards should be instructed and monitored in the proper use of praise and attention. A few words of caution should be given, however; Davison (1969) makes a strong point that the early behavior modifiers were so intent on reinforcing consequences (e.g., attention paid to inappropriate behaviors) that they completely overlooked the possibility that behaviors might be a function of antecedent conditions such as anxiety and tension, and only partly, if at all, a function of their own consequences. In such cases, systematic withholding of attention (extinction) is not likely to eliminate the inappropriate behavior. In addition, Ludwig, Marx, and Hill (1971) point out that social reinforcers can have the unique problem of "reverse polarity." That is:

... in some patients, the use of positive social reinforcers (for instance, praise) might result in a deterioration of performance, whereas negative social reinforcement or verbal censure might result in an increased efficiency of performance. [p. 43]

In summary, all forms of social reinforcement should be used judiciously and with regard to their idiosyncratic effects.

Direct Primary Reinforcement

In one of the earliest operant studies, Ayllon and Haughton (1962) reported increases in attending meals on time and in task performance when food was contingently given or withheld. Additional studies have used direct reinforcement (such as fruit, chocolate, fruit drinks, milk, cigarettes, or the opportunity to look at an attractive magazine) to institute or to increase speech in mute or near-mute patients (Baker 1970 and 1971, Kassorla 1969, and Thomson, Fraser, and McDougall 1974). Followups after 1 year and again after 18 months have been encouraging (Baker 1970 and Thomson, Fraser, and McDougall 1974), although investigators have pointed out that speech shaped in this way often retained a mechanical, thoughtless quality.

It is the experience of this writer that for very low functioning, chronic patients the therapist must often revert to direct primary reinforcement, since the use of tokens appears to be too complex a task for these patients. It is in this area perhaps more than any other, however, that the concern over patient rights presents some very knotty problems. The withholding of food, of course, has profound ethical and legal implications (Wexler 1973). Some investigators have resolved the issue by using foods that are generally considered luxuries, not necessities (grapes, milkshakes, candy); others have proceeded on the assumption that the patient has a "right" to adequate nutrition (in the form of a meal all blended together), but that in order to have attractive, highly palatable food he should behave appropriately or "work" for it because that is what is required in the outside community.
Stimulus Satiation

Satiation procedures involve having an individual "overperform" an undesirable behavior that may have intrinsic reinforcing properties, or flooding an individual with a reinforcing stimulus until that stimulus becomes neutral or aversive. Ayllon and Michael (1959) successfully used this procedure on a patient who carried so much trash on his person that he suffered skin rashes. Ayllon (1963) later used stimulus satiation with a patient whose hoarding of towels in her room caused considerable extra work for the nursing staff. In a more recent report, Wolff (1971) claims to have reduced delusional verbiage by forcing a patient to voice her delusions for 1 hour a day.

Satiation procedures have not been reported often, but what few reports we have are encouraging. This is a common sense technique, one that grammar school teachers have used with many generations of spitball shooters and paper airplane flyers. It should be no surprise that the procedure works with adult populations, including schizophrenics.

Use of Aversive Stimuli

Aversion therapy is defined by Rachman and Teasdale (1969a) as "an attempt to associate an undesirable behavior pattern with unpleasant stimulation or to make the unpleasant stimulation a consequence of the undesirable behavior" (p. 280). This broad definition includes respondent procedures or direct punishment within an operant paradigm. The reports discussed below include both.

Agras (1967) successfully treated a case of long-standing glass breaking by administering a painful shock when the patient signaled that he was visualizing himself breaking a pane of glass. Royer, Flynn, and Osadca (1971) reported the successful treatment of a deteriorated schizophrenic's persistent fire setting by shocking the patient while he lit pieces of paper and threw them into a pan of water. In both of the above cases, long-term followups (at 18 months and 4 years) were very encouraging. Similarly, Lebow, Gelfand, and Dobson (1970) shocked a patient (diagnosed as paranoid schizophrenic) on various schedules when he emitted a respiratory stridor (a harsh, high-pitched sound caused by a convulsive closing of the glottis when inhaling). During the treatment sessions, the frequency diminished significantly, but no generalization to the ward was observed. Anderson and Alpert (1974) also used direct electric shock, as part of a treatment designed to eliminate ritualistic face-and-hand movements in a hallucinating patient.

Aversive stimuli have also been used therapeutically within an escape or avoidance paradigm, the earliest report being that of Ayllon and Michael (1959). Nurses assigned to two female patients who refused to feed themselves were instructed to spill food on the patients' clothes during the feeding process. The patients learned very quickly that by feeding themselves they could avoid having their clothes soiled.

Overall, the use of aversive procedures with schizophrenics has been quite limited, perhaps because the ethical questions surrounding the application of such procedures with institutionalized populations are especially troublesome. The few reports of their use, however, have been quite promising. With any group of subjects, one of the greatest problems for the successful use of aversive stimuli is that of achieving generalization of results from experimental conditions to life situations. In aversive conditioning, for example, individuals who receive treatment generally make clear discriminations between conditions under which they will or will not receive the aversive stimulus (e.g., the therapist's laboratory vs. the outside world). In this regard, the cognitive deficits of schizophrenic patients may make them better candidates for aversion therapy than normal subjects.

Self-control Procedures

Many schizophrenic patients probably do not have the motivation to carry out self-control procedures; nevertheless, several reports have appeared which indicate that in some instances such techniques might have merit, especially for higher functioning groups.

Self-monitoring

Rutner and Bugle (1969) found that reported hallucinations dropped from 181 per day to 0 after a 16-day period in which a patient was asked to record her frequency of hallucinating. A 6-month followup
indicated that the frequency remained at zero. Hutzell (1974) pointed out, however, that the decrease could well have been a function of the social reinforcement attendant upon the reported decrease and that the actual frequency of hallucinations may have remained the same. To test this assumption, he attempted to control for extinction of recording behavior, for differential reinforcement, and for the patient's outcome expectancy in a study involving self-monitoring of hallucinations. Results indicated that the frequency of hallucinating decreased by about 20 percent over a 6-week period.

Self-shock

Bucher and Fabricatore (1970) gave a portable shock device to a schizophrenic patient who complained of disturbing hallucinatory voices; the patient was instructed to administer shock to himself when he heard voices. Within several days, the patient indicated that the voices had disappeared. Furthermore, he reported that they remained absent during the next 35 days, after which he was discharged from the hospital. Weingärtner (1971), using a similar treatment in a group study, concluded that while the self-shock patients showed significantly more substantial improvements than a placebo group, the major agent of change appeared to be patient expectation.

Anderson and Alpert (1974) tried the shock device used by Bucher and Fabricatore (1970) and by Weingärtner (1971), but concluded after a 2-week trial that the technique was not producing the desired effect. Hence, they developed another procedure, using both reinforcement and punishment, that did bring the hallucinations of the particular patient under control. The patient generally took a great deal of time carrying out routine activities because he engaged so consistently in various hand and face movements, which he described as attempts to force the hallucination away from his visual field. A program was set up whereby he was positively reinforced for reducing the time it took him to eat breakfast and lunch, and he was punished with electric shock if he engaged in his ritual mannerisms while passing through doors. A naive assistant, unaware of the contingency system and the experimental hypothesis, rated density of hallucinatory behaviors. Observation data indicated dramatic reduction in such behaviors when reinforcement and punishment procedures were in effect and rapid return to baseline rates when they were withdrawn. Self-report measures from the patient indicated that the effect generalized to another set of stimulus conditions.

In summary, the data on the use of self-shock with schizophrenics are too sketchy and inconsistent at present to provide even the most tenuous conclusions. Certainly more work is needed. Bucher and Fabricatore (1970) warn:

> It does not appear that the method followed here will have wide applicability...since few chronic schizophrenics could be persuaded to carry through the therapist's instructions for shock use. [p. 384]

Cognitive Self-guidance

Meichenbaum and Cameron (1973) reported highly promising results in teaching schizophrenics cognitive strategies to be used in problem solving. First, the experimenter modeled a task, describing what he was doing; then, while the patient performed the task, the experimenter instructed him; the patient was next asked to perform the task while instructing himself aloud, then while whispering instructions to himself, and finally with no lip movements. The cognitive self-guidance program effectively modified behavior on a variety of attentional, thinking, and language tasks, and there were also generalization effects to a task for which specific training had not been given. Thus, the technique appears to be very promising.

Implosion Therapy

Implosion therapy is a "flooding" technique in which the patient is asked to imagine, with as much vividness as possible, real and symbolic situations that produce anxiety. The aim of this procedure is the eventual reduction of anxiety through extinction as the situations are presented again and again without resulting in actual physical harm; see Stampfl and Levis (1967) for a detailed explanation.

Three investigations have been reported in which implosion therapy was tested on psychotic or schizophrenic populations (Boudewyns and Wilson 1972,
Hogan 1966, and Pentony 1971). Two of these studies (Boudewyns and Wilson 1972 and Hogan 1966) supported the effectiveness of implosion therapy with these patients, but the third (Pentony 1971) did not. Overall, the results of implosion therapy with schizophrenic patients must be seen as promising but inconclusive. Certainly the technique seems to offer another encouraging step forward, and it should be systematically researched.

Assertion Training

Wolpe (1958) advocates training in assertiveness as one of the main techniques of reciprocal inhibition therapy. No controlled studies have been done with schizophrenics, but several case studies have appeared in the literature. Davidson (1966) reports a case history in which a patient successfully learned to assert himself to his wife and in-laws. Nydegger (1972) reports the successful use of social reinforcement coupled with assertion training to treat a patient displaying hallucinations, delusions, and withdrawal. A 2-year followup indicated that the patient was free of psychotic symptoms. Bloomfield (1973) taught assertion techniques in group meetings to outpatients, and concluded:

... we find that chronic schizophrenics are capable of unlearning maladaptive overly-aggressive and compliant behaviors and learning, in their stead, assertiveness. Towards this end, they are fully capable of behavior rehearsal, role playing and role reversal with no untoward effect. [p. 280]

The largest group of schizophrenic subjects given assertion training was reported on by Serber and Nelson (1971). Of 14 patients selected because they “lacked interpersonal assertiveness” and given from 3 to 18 individual treatment sessions, however, only 2 were reported to have made slight improvement. The problem most frequently observed by these investigators was that patients could not project themselves as being assertive where they had previously been passive. In addition, many were unable to imitate the modeling and role playing they observed, and some were unable to remember the role from one session to the next. Patients also reported that the procedure seemed “unreal.”

Systematic Desensitization

Although Wolpe (1961), who first introduced systematic desensitization, has stated that the procedure is not suited to treating psychotics, a number of investigators have used it with this population. Results have been mixed.

The only controlled study on systematic desensitization with schizophrenics is that of Zeisset (1968). Forty-eight patients were randomly assigned to four groups: 1) systematic desensitization as used by Paul (1966); 2) relaxation training plus the application of differential relaxation in various activities; 3) attention-placebo control; 4) no-treatment control. The target behavior chosen was “interview anxiety,” and dependent measures were taken with the use of naive observers and appropriate reliability checks. In posttreatment interviews, both the systematic desensitization and the relaxation-plus-application training groups showed significantly less anxiety than either of the control groups; but the two treatment groups did not differ significantly from each other. Zeisset (1968) concludes that systematic desensitization is “effective in the modification of the behavior of at least some schizophrenic inpatients” (Zeisset 1968, p. 22).

Positive results are also reported for four case studies, the first two by Cowden and Ford (1962). A patient diagnosed schizophrenic reaction, paranoid type, was chosen for desensitization because he became extremely panicky and frightened when talking to other people. The report indicates that by the end of treatment he was able to talk much more freely. A second case reported by the same investigators involved a patient diagnosed as paranoid schizophrenic who was often incapacitated by his inability to leave a room without compulsively checking to see that he had left nothing behind. A package treatment, including systematic desensitization, hypnosis, and in vivo practice, which involved leaving objects in rooms (the authors called this “assertion training”), was only moderately successful.

In two other case studies (Alumbaugh 1971 and Slade 1972), it appears that hallucinatory behavior was reduced by systematic desensitization. In both instances, anxiety or tension seemed to be the major factor precipitating the hallucinations. Consequently, the patients were desensitized to situations that generally aroused anxiety or
tension. In the Alumbaugh (1971) study, smoking was the behavior that created the tension. Although "desensitization to smoking" was attempted, measures were also taken to reduce actual smoking. Hence, in this study the effects of desensitization are seriously confounded with those of reduction in smoking. The Slade (1972) study also provides positive evidence for desensitization; in a later study, however, Slade (1973) was unable to replicate his earlier success.

Three other studies have also appeared which report the ineffectiveness of systematic desensitization with schizophrenics. In one of these investigations, nonstandard procedures were used (Serber and Nelson 1971), and in the other two (Gelbart 1971 and Weinman et al. 1972) there was no evidence that the target behavior (interpersonal assertion) was related to anxiety. Weinman and his colleagues even report that if the patient could not describe a relevant anxiety-provoking situation, one was chosen for him from six standardized situations. Much can be claimed for the efficacy of systematic desensitization in the treatment of a broad spectrum of problems involving anxiety, but practitioners should remember that it was developed for, and researched with, anxiety-related problems. To expect systematic desensitization to teach people skills they do not know or, perhaps, to motivate them to perform behaviors in which they see no reinforcement involves no test of desensitization.

In summary, the results have been mixed but promising, especially when systematic desensitization has been applied in a standard fashion for anxiety-related problems. But it should be pointed out that even those investigators who reported success found some problems with schizophrenic patients. Cowden and Ford (1962) encountered several major stumbling blocks. Patients were unreliable in picking out anxiety stimuli; they were inattentive and showed lack of concentration during therapy; and they did little relaxation practice on their own. Zeisset (1968) suggests that the relaxation alone may have been responsible for the changes observed and that his patients may have been incapable of receiving more from the procedure. In addition, Weinman et al. (1972) found a general inability to complete hierarchies, and Serber and Nelson (1971) reported that patients had difficulty in realistically imagining scenes outside their present situation. These observations certainly are not encouraging.

In light of the cognitive and motivational deficits noted above in the patient populations under consideration, it would appear that in vivo desensitization procedures might be more promising. It was mentioned, for example, that Slade (1973) did not find systematic desensitization effective in reducing the frequency of hallucinatory behaviors. He reports, however, that when in vivo desensitization was introduced (increasingly involving the patient in anxiety-arousing situations), there was a marked decrease in the percentage of the occurrence of reported voices. It was also noted that Cowden and Ford (1962) had moderate success with an in vivo procedure in the treatment of a patient who could not leave anything in a room. Furthermore, Weidner (1970) reported the successful application of in vivo procedures with a patient who would not leave the hospital for fear that the CIA would kill him. Indeed, there does appear to be evidence that this procedure is especially suited to schizophrenic patients, and no reports have yet been published in which in vivo desensitization was found ineffective.

Unit Wide Behavioral Programs—The Token Economy

The most elaborate behavioral treatment program—one which incorporates most of the procedures previously discussed along with many more—is the token economy, a relative newcomer on the psychotherapy spectrum, but one that has rapidly gained acceptance. It has been only 14 years since Teodoro Ayllon and Nathan Azrin first conceived of the token economy as a motivational system for therapy, and one brief decade since they first made their results public (Ayllon and Azrin 1965). By the fall of 1969, only 5 years after the report of the project at Anna State Hospital, Anna, Ill., the Veterans Administration alone has 27 separate token economy programs in 20 different hospitals (Stenger and Peck 1970). Today, it seems that almost every institution one stumbles across has at least a "token" token economy program.

The characteristics shared by all these programs include multiple target behaviors (clearly specified), multiple reinforcing events, and some medium of exchange (points, tokens, credit cards) used to reward rate or quality of behaviors and necessary for access to the reinforcing events. To my knowledge, every behavior that might logically be associated with "cause for institutionaliza-
tion” or “improved community or ward adjustment” has at some time or other been identified as a target on a token economy program, and reinforcing events have included everything a patient might be willing to work for that could ethically be made contingent upon his behavior.

Advantages of Token Economies

Ayllon and Azrin (1968b) maintain that the use of a generalized conditioned reinforcer such as a token has three advantages over direct reinforcement:

1. It bridges the delay between the desired response and the delivery of reinforcement, thereby maintaining the response in strength;
2. It allows the response to be reinforced any time, whereas primary reinforcement is typically restricted as to time and place;
3. It allows sequences of responses to be reinforced without interruption due to delivery of the reinforcer.

Carlson, Hersen, and Eisler (1972) offer a fourth advantage—namely, that the use of tokens minimizes the reduction in strength of reinforcer-effectiveness that can result from satiation or individual preferences in reinforcers. In addition, Kazdin and Bootzin (1972) suggest that tokens may acquire greater incentive value for the subject than a single primary reinforcer, on the assumption that with tokens the effects resulting from association with each of a number of primary reinforcers may be summed together.

Evaluation of Token Economies

A respectable number of outcome studies of the use of token economies with schizophrenic populations have now appeared in the literature. To the experimental novice, these reports may seem somewhat overpowering in their impressive results, but to those with experience in experimental design the lack of rigor in many investigations is obvious. The studies may be roughly divided into the three categories described below, each with its own level of experimental product. The design most fraught with lethal confoundings, of course, is the single group design. Nevertheless, such reports can be useful. As one of my colleagues likes to say, “If you can teach a pig to fly, you don’t need statistics or a control group.” The highest level of product comes from the controlled group designs, and these also are impressively favorable in reporting the effectiveness of the token economy. But even the best studies have generally not included naive raters, reports of reliability on dependent measures, rotating treatment staffs, or attempts to control for expectancy, enthusiasm of staff, and activity level of patients. Thus none is impervious to criticism.

Single Group Designs (Observational Studies)

As is true of the literature on every other approach to psychological treatment, the majority of articles focusing on outcome are case studies rather than tightly controlled research; however, the nature of behavioral assessment (target behaviors are usually clearly specified) puts such case reports above those of most other approaches. Most of these studies have involved chronic patients (Burley and Steiger 1972, Gentry and Willetts 1972, Gericke 1965, Glickman, Plutchik, and Landau 1973, Gorham et al. 1970, Lloyd and Abel 1970, McReynolds and Coleman 1972, and Upper 1973), but at least one study in a mental health center aftercare service has been reported (Rinn, Tapp, and Petrella 1973); another outpatient study involved a group of young refractory patients (Pomerleau, Bobrove, and Harris 1972). The evaluative comments on these programs are all highly positive.

One of the most exciting demonstrational studies to appear is that of Pomerleau, Bobrove, and Harris (1972). The most innovative ingredient of their program involved the creation of situations in which patients were reinforced for applying social pressure to other patients and for solving problems together. Patients were randomly assigned to dyads who shared small fines for any member’s unacceptable behavior. Dyads were combined into polydyads of six to eight people, who shared larger fines and who could, by working together, take advantage of group rates in purchasing backup reinforcers. The largest fines were shared by the entire ward. Whenever fines exceeded a dyad’s level, one member of the polydyad would have to organize a group meeting at which polydyad members could pool their resources and could sign up for extra work, and bring strong pressure against the deviant group member who had incurred the fine. In addition, patients were reinforced for taking a great deal of supervisory responsibility on the ward. In contrast to most token programs, the population was
made up of generally active, socially aggressive and highly disruptive patients (86 percent diagnosed schizophrenic); nevertheless, the principles sound very promising and may turn out to be applicable to a variety of populations.

**Time Series Designs**

In contrast to the demonstrational studies cited above, time series designs involve either an A-B-A own-control type of design or the systematic introduction of various ingredients of treatment over a series of time periods. Although confoundings within the therapist/client domains, and sometimes nonspecific placebo effects remain (Paul 1969a), such designs are capable of establishing cause-effect relationships. Again, it can be noted that the majority of these studies involved chronic patients (Ayllon and Azrin 1965, Atthowe and Krasner 1968, Baker, Hall, and Hutchinson 1974, Lloyd and Garlington 1968, and Winkler 1970). One study involved subjects on an open ward (Glickman, Plutchik, and Landau 1973), and one program was conducted with young, rapid turnover patients (Hersen et al. 1972).

With only one exception, these reports claim that the token program was responsible for producing dramatic changes in a wide variety of behaviors. The exception (Baker, Hall, and Hutchinson 1974) deserves special comment because of its uniqueness in the token economy literature. In an attempt to isolate the effects of token reinforcement from other aspects of treatment, such as attention from professional staff or programmatic changes, Baker and his colleagues introduced treatment elements in the following order: 6 weeks of no treatment; 3 weeks of activity change; 7 weeks of free tokens; 14 weeks of token economy; and a followup of 8 weeks. Their conclusion was that "token reinforcement did not emerge as a critical therapeutic agent" (p. 383). A telling weakness in this study, however, which the authors themselves point out, is the failure to attain stability of measurement within any of the phases, thereby rendering the results virtually impossible to interpret.

**Controlled-Group Studies**

For the following six studies, one of the most critical elements of design involved the formation of the control groups. It will be seen that some studies employed excellent procedures for forming the groups while others did not. In none of the studies mentioned below was sufficient attention paid to staff variables (experience, training, expectancies) or nonspecific effects of treatment (activity levels, staff-patient contact). Furthermore, with only one exception (Maley, Feldman, and Ruskin 1973), neither trained nor naive observers were employed and the conditions under which data were collected were not reported. Only two of the investigations reported reliabilities for their dependent measures (Maley, Feldman, and Ruskin 1973 and Shean and Zeldberg 1971). In summary, the experimental methodology leaves much to be desired, but steady progress is apparent in research sophistication for the more recent investigations.

A study by Schaefer and Martin (1966) not only represents a very well-planned and well-executed project, but it is also the first evaluation involving a control group to appear in the literature. Forty chronic-schizophrenic adult females were randomly assigned either to the experimental group, in which target behaviors (personal hygiene, social interaction, and work performance) assumed to be incompatible with "apathy" were reinforced with tokens, or to the control group, which received "routine treatment." At the beginning of the study, both groups were equivalent on "apathy" scores; during the 3 months the program was in effect, however, the experimental group showed a clear decrease in "apathy" while the control group stayed essentially the same.

The second controlled-group study is that of Marks, Sonoda, and Schalock (1968). Schizophrenic subjects were randomly placed into two groups, each group receiving 10 to 13 weeks of "reinforcement" therapy (token economy) and 10 to 13 weeks of "relationship" therapy (daily 1-hour meetings with a therapist), with the order of treatments counterbalanced across groups. Data indicated that both types of therapy produced significant improvement; there was no difference in effectiveness of the therapies. The investigators point out, however, that the relationship therapy was far more costly in terms of staff time, requiring six extra persons, each of whom put in 1 or 2 days a week on the project (a total of 6 to 12 extra staff days per week), compared with the reinforcement part of the project, which involved the services of only one extra staff person who invested "perhaps one-half-day a week working on the project" (Marks, Sonoda, and Schalock 1968, p. 401). Apart from obvious
questions about the gross nonequivalence of professional staff time devoted directly to the patients (880 total patient-contact hours in the relationship therapy as opposed to zero for the reinforcement therapy), one must seriously question whether or not a token economy program supervised "perhaps one-half-day a week" can qualify even minimally as a treatment program. Individuals who have been involved in token economy programs would appreciate the significance of such a qualification. Yet whatever may be said concerning the design or weakness of the token program, the data argue that a "barebones" token program was as effective as, and vastly more economical than, a fairly intensive relationship therapy program.

Heap et al. (1970) included a token economy in a treatment program involving behavior therapy, attitude therapy, and ward government. Although the investigators lay claim to a control group, the formation of groups was on neither a random nor a matched basis, and the authors point out that all of the combative, assaultive, or extremely bizarre patients were assigned to the experimental treatment program. Hence, the study qualifies more as a single group design. Results for the experimental program were positive, but one must, of course, interpret the results within the context of a broad treatment package that included a token economy along with many other variables.

The dependent measures of most token economy programs involve increases or decreases in the specific behaviors targeted. However, Gripp and Magaro (1971) used as dependent measures four rating scales (Nurses Observation Scale for Inpatient Evaluation; Psychotic Reaction Profile; Minimal Social Behavior Scale; Elgin Behavior Rating Scale) along with a time-sample behavior checklist. Six months in the token economy program for 45 schizophrenic female patients resulted in significant improvements on factors such as withdrawal, thinking disorder, agitation, depression, social competence, personal neatness, irritability, and manifest psychosis. Scores of the token economy patients were compared with similar measures made on patients on three "custodial" wards. Unfortunately, none of the control groups were well matched with the experimental group either as to age or length of hospitalization, and the diagnoses of these groups were described only as "similar." Hence, there are many problems associated with the comparative data; but the results do indicate "a generally greater and more comprehensive improvement in the behavior of the patients assigned to [the] token economy" (Gripp and Magaro 1971, p. 147).

The best matched group design yet to appear is that of Shean and Zeidberg (1971). Token economy and control groups were housed in identical facilities and were matched on age, diagnosis, and length of hospitalization. Six- and 12-month evaluations indicated that experimental patients showed significantly greater improvement than the controls on ward-behavior rating scales and in instrumental role activities.

In terms of overall research design, the best study to appear is that of Maley, Feldman, and Ruskin (1973). These investigators assigned 40 chronic mental patients to either a token economy treatment program or a custodial treatment program. On dependent measures, they employed naive raters and reported reliability coefficients in the high 80's and 90's. After about 25 weeks of treatment, patients in the token program, as compared to those in the control group, were found to be significantly better oriented, more capable of handling money, better able to discriminate, and either better able or more willing to follow complex commands. In addition, token economy patients exhibited more appropriate mood states, were more cooperative, engaged in more communication with better developed expressive skills, did not show as much psychotic behavior, and used more appropriate social behavior.

In summarizing the results of token economy studies in a broad array of settings with diverse populations, Atthowe (1973) concluded that "contingent token reinforcement programs are powerful techniques for modifying on-going behavior when properly applied (p. 646)." The studies reviewed above, although not without flaws, strongly support this statement. By far the most ambitious comparative project yet attempted is the 5-year study just completed by Gordon Paul at the Adolf Meyer Center, Decatur, Ill. Three groups of chronic patients selected from five large State hospitals were equated on 16 variables and assigned to one of three treatments (token economy, milieu therapy, or hospital care). Patients in the token and milieu programs were housed in identical wards, with identical activity schedules and opportunities. Staff members were trained in both treatments and rotated regularly between the two wards. In addition, a staff of trained observers time-sampled behaviors of both patients and staff throughout all waking hours. The data gathered from
such a project could, of course, fill a book—and soon will (Paul and Lentz, in preparation). Our knowledge of institutional treatment, including token economies, will be advanced significantly when this work becomes available.

Establishing a Token Economy Program

Those interested in developing a token economy program will find a great deal of valuable descriptive information in the literature (Atthowe and Krasner 1968, Ayllon and Azrin 1968a and 1968b, Cohen et al. 1972, Gentry and Willetts 1972, Gericke 1965, Lloyd and Abel 1970, Paul Lentz, in preparation, Schaefer and Martin 1966, and Winkler 1971a). Those particularly interested in a token program on an open ward, or in one involving young, rapid-turnover populations, will want to see Glickman, Plutchik and Landau (1973) and Hersen et al. (1972). Furthermore, excellent descriptions are provided by Henderson (1971), Kelley and Henderson (1971), Rinn, Tapp, and Petrella (1973), and Slavin and Daniels (1971) on programs which deal with psychotic outpatients. Two articles have been specifically directed at the question of why token programs break down (Atthowe 1973 and Hall and Baker 1973).

A number of writers point out important factors that must be considered in establishing a successful program, and some of these are briefly considered below. A word of caution is appropriate, however. Ayllon and Azrin (1968b) point out that a "cookbook" for implementing a token economy would have little value outside the particular setting for which it was written because types of individuals and administrative structures differ so greatly. Hence, the following discussion touches on broad, general points rather than specifics.

Institutional Support

Without doubt, the single most important ingredient is administrative support that gives one the authority to establish and operate a token economy (Davis 1972). A great deal of "real power" often lies at lower levels; hence, at each level support must be gained from those who control power (Krasner and Atthowe 1971). One of the most logical ways to gain approval and support of administration or staff, of course, is to ask them what kinds of problems you can help them solve (Wagner and Paul 1970).

Selection and Training of Staff

The backbone of any program is naturally the immediate ward staff—those individuals who must observe the patients' behavior, make judgments, and then systematically administer, withhold, or charge tokens. Careful attention must be given to both staff selection and staff training if a program is to succeed.

It has been pointed out that "nurses, aides, and other ward staff who are not favorably disposed to particular treatment regimes can completely disrupt them" (Hall and Baker 1973, p. 256). The application of behavioral methods is entangled with such issues as "control" and "basic human rights." No matter how well trained they are, staff members are likely to perform very poorly indeed if their basic "philosophy of man" precludes the methods used in the program. Morrison, Mejia, and Miller (1968), for example, reported on interpersonal staff problems that grew up around the use of operant techniques on an autistic child. The main problem was one of difference in philosophy between those who felt that the child should be made comfortable (e.g., given food, attention) regardless of his behavior and those who felt that these good things of life should be made contingent upon appropriate behavior. Again, McReynolds and Coleman (1972) state: "the importance of favorable staff attitude ... in the success of a token reinforcement program cannot be overemphasized" (p. 33).

Many references concerning the training of staff members in behavioral vocabulary, concepts, and technology can be suggested, but there seems to be a complete void in the literature concerning staff training in the deeper philosophical issues. In addition to problems with uncooperative staff members, some recent court suits and a bad press also necessitate some scholarly work in this area. But at the present time—and certainly within the limitations of this article—perhaps the best advice this writer can give is that staff members be carefully screened and selected on the basis of the philosophy they bring to the program before training ever begins.

Most writers agree that staff members should become
thoroughly acquainted with the basic principles of reinforcement, including stimulus control, scheduling, shaping, fading, and extinction, and most training programs include from 10 to 20 or more hours of didactic training, role playing, and, often, on-the-job experience with feedback. Although very little has been done in researching specific methods of staff training, a study by Paul and McInnis (1974) demonstrated that staff members who received a heavy dose of classroom instruction followed by on-the-job training performed better on an academic test of the content of training than did staff members trained by abbreviated classroom instruction with more extensive clinical observation of experienced technicians. Furthermore, the two different training methods resulted in differential patterns of attitude change.

Kazdin and Bootzin (1972) made the point that even when staff members are adequately trained, they must be positively reinforced for desirable performance. Generally, such reinforcement has taken the form of verbal praise or feedback (e.g., Panyan, Boozer, and Morris 1970), but some investigators have also demonstrated that tangible reinforcers such as money or green stamps lead to even better performance (Hollander, Plutchik, and Horner 1973, Katz, Johnson and Gelfand 1972, and Pomerleau, Bobrove, and Harris 1972).

Dealing with Nonresponsive Patients

Those who implement token economy programs should be forewarned that there is a high probability that some patients will not show any change in their behaviors. Percentages of such patients in programs involving chronic schizophrenics have varied from about 7 to 18 percent (Atthowe and Krasner 1968, Ayllon and Azrin 1965 and Lloyd and Garlington 1968). A number of procedural suggestions have been made to augment responsiveness, but research in this area has been sparse so far.

One category of procedures has been called “response-priming” or “sampling-exposure,” sometimes broken down into “reinforcer sampling,” “reinforcer exposure,” “response sampling,” and “response exposure” (Ayllon and Azrin 1968b). Basically, the procedures involve modeling, instruction, forced or free participation in the response desired, or some limited (either firsthand or vicarious) experience with the reinforcer. Research to date indicates that these procedures may be helpful (Ayllon and Azrin 1968a, McInnis et al. 1974, and Sobell et al. 1970). Only one study has appeared in which the sampling-exposure procedures did not increase patients’ participation on a token economy (Curran, Lentz, and Paul 1973); however, a followup study on the same project and with the same residents suggests that the failure had to do with a shortage of tokens and with large debts accrued by patients. When the general economy was loosened, and when provisions were made for patients with long-standing fines to participate by partial payment of the fines, participation in the targeted activities increased (McInnis et al. 1974). In general, the procedures appear to be quite promising for dealing with the nonresponsive patient.

Mitchell and Stoffelmayr (1973) selected the most inactive patients on a ward and then, by applying Premack’s principle (the use of a preferred, high-frequency behavior as a reinforcer for a low-frequency behavior), they shaped and maintained consistent work from the patients by using inactivity (in this case “sitting”) as the reinforcer. The Premack principle is widely applied but seldom so ingeniously used. Although the procedure did not involve the use of tokens, one might require the inactive patient to purchase, with tokens, the opportunity to carry on his inactivity in his most accustomed way.

Kazdin (1973) has suggested three additional procedures to augment responsiveness: altering the backup value of the reinforcement; including the patient in the planning and development of the program; and using response-cost for “not responding.” Winkler (1971b) found that increasing the base value of the backup for a particular patient did produce the desired response; involvement of the patient in planning is promising, but has no research base as yet; and the use of response cost (to be discussed in the next section), though promising, is quite complex. In addition to the above recommendations, McInnis et al. (1974) and Hersen et al. (1972) suggest making patient populations heterogeneous to maximize good modeling for the lower-functioning patients. Perhaps most important of all is Kazdin’s (1973) call to examine carefully all aspects of the program and to try new procedures before concluding that some patients will not respond to a particular treatment. Token economies still have a long way to develop, and much is yet to be learned about the nonresponsive patient.
Response Cost—Yea or Nay?

The earliest token economy programs with schizophrenics emphasized only positive reinforcement contingent upon behaviors targeted for increase. It was not long, however, before programs began also incorporating "response cost" procedures that involved fining the patient for certain behaviors targeted for decrease. Response cost has been used for all types of socially inappropriate behaviors—whatever behaviors would interfere with acceptance in the outside community—but generally it is used not so much for decreasing bizarre behaviors as it is for decreasing behaviors that create ward management problems (e.g., assaultive or destructive behaviors).

Reports, both anecdotal ones and summaries of research, indicate that fines or penalties often do decrease or eliminate undesirable behaviors (Doty, McInnis, and Paul 1974, Upper 1973, and Winkler 1970); there is by no means unanimous agreement, however, concerning their use. Krasner and Atthowe (1971) recommend that fines or penalties should be minimized or eliminated altogether, and the closest that Ayllon and Azrin (1968b) came to using a response cost procedure was asking patients to make a partial payment on something they ordered, the deposit to be forfeited if the patient later changed his mind. No doubt much of the objection to the use of response cost can be traced to mistaken notions concerning punishment that were prevalent during the 1950's and well up into the 1960's. If applied correctly response cost works, as do other types of punishment, and research evidence is accumulating to indicate that many of our fears concerning the side effects of punishment procedures may have been misplaced. Kaufman and O'Leary (1972), for example, found with adolescents in a psychiatric hospital that rewards and response cost were equally effective in significantly reducing disruptive behavior and in increasing reading skills. Furthermore, they found none of the detrimental side effects, such as social disruption, increased aggression, or increased escape responding, that would have been predicted from some of the animal literature on punishment (Azrin and Holz 1966).

Fines certainly play a large role in social control outside a hospital, and since one of the strengths of the token program is its similarity to community life (that is, people have to work for good things), it seems appropriate to incorporate some type of response cost into a token economy program. The major problem appears to be the tendency of patients to get into a downward spiral, becoming so deeply in debt that their behavior deteriorates (Doty, McInnis, and Paul 1974 and Krasner and Atthowe 1971). Doty, McInnis, and Paul (1974) found, for example, that administrative restrictions that drastically reduced the use of time out in seclusion for physically aggressive behaviors resulted in a gradual increase in such behaviors, with a resultant accumulation of large fines by some patients. In an effort to deal with the situation, these researchers began allowing patients to "purchase eligibility" to obtain backup reinforcers by making a small payment on their accumulated total of fines. In addition, they introduced a "proportional pay-off" schedule, which progressively increased the amount of debt reduction per token paid according to time elapsed since the last fine. The procedure was successful, and provides a good beginning for dealing with the major problem encountered in the use of response cost.

Two investigators (Upper 1973 and Winkler 1971a) have tried to get around the problems associated with fines by reinforcing the patient when he does not engage in the undesirable behavior. In the animal literature, this procedure is called differential reinforcement for other behavior (DRO). Instead of fining a patient for being noisy, for example, Winkler (1971a) rewarded her for being quiet. The main problem with this procedure is that it is necessarily time-contingent instead of behavior-contingent, and a time-contingent procedure involves either remembering or keeping a record of infractions until the time the reward is to be delivered. Upper (1973) solved this problem nicely by issuing tickets at the time an infraction occurred. The ticket detailed the specific infraction (thus providing specific information cues to the patient), the amount of fine, the patient's name, the name of the person issuing the ticket, and the date and time of the offense. At the end of the day, all patients who had received no tickets were given 15 bonus tokens "for adhering to the rules of the ward," while patients who had received fines had their total fines subtracted from the 15-token bonus. If a patient had accumulated fines totaling more than 15 tokens, he had to pay tokens to make up the difference. In essence, the tickets provided the record of infractions which allowed correct reinforcement of "other" behaviors.

One advantage of the DRO procedure is that it would fool some critics who strongly oppose all forms of punishment, including response cost, but who might be
somewhat weak in conceptual skills. In DRO, the cost is still there but it is hidden. In essence, the patient is being fined by withholding tokens he is usually given freely.

The administrator of a token economy certainly must wrestle with a large number of issues and possible extensions of his program. Some of these have been discussed above. In addition, he or she will want to become familiar with recommendations regarding transfer of patients into new settings (Lentz and Paul 1971) and individualizing of treatment within the larger program (e.g., Carlson, Hersen, and Eisler 1972, Gripp and Magaro 1971, Henderson and Scolos 1970, and Pomerleau, Bobrove, and Harris 1972); to take note of a few helpful suggestions which have come from the application of economic theory to token programs (e.g., Kagel and Winkler 1972 and Winkler 1971b, 1972, 1973a and 1973b); and to be aware of such innovative procedures as the use of the credit card (Lehrer, Schiff, and Kris 1970), automated data collection (Tanner, Parrino, and Daniels 1975), item preference by patients (Ruskin and Maley 1972), the use of self-monitored tokens (Anderson and Alpert 1974), and procedures whereby the token program follows the patient into the community (Krasner and Atthowe 1971).

Behavior Therapy—Current Status and Issues

Myths Concerning Behavior Therapy

Behavior therapists themselves are no doubt responsible for some of the myths surrounding their techniques, myths that have created a bad press (Davidson 1974) and have often generated many strong emotional reactions, both pro and con (Bornstein, Bugge, and Davol 1975 and Saxbe 1974). It appears that these myths constitute a stumbling block in the path of many who would like to give behavior therapy a fair hearing. Hence, it is my feeling that a few paragraphs of special attention to this issue are warranted.

Myth One: Behavioral Techniques Are Awesomely Powerful

In their early zeal for acceptance and prestige, behavior therapists seriously overstated the power of their methods. Such claims were soon picked up by other professionals and by the public media, who have so popularized the claims that they are now difficult to disclaim. In speaking of the novel A Clockwork Orange, Halleck (1974) states:

Assuming that we can change people so drastically—and it is likely that we will soon be able to do so—do we have a right to alter human beings in a manner that so seriously impairs their capacity to choose? [p. 384]

Would that our techniques were so powerful! If they were, the ethical and legal questions would no doubt be quickly solved, enabling the techniques to be put to use across a broad front of social problems. At the present time the “awesome” power is simply not there; nor is it likely to be as soon as some have suggested.

Myth Two: Behavior Therapy Is Exclusive

It is probable that the “ exclusiveness” that has sometimes characterized the behavioral approaches has come, in part, from an insistence by some behavior therapists that all deviant behavior is learned (e.g., Hopkins 1970, Slavin and Daniels 1971 and Ullmann and Krasner 1965) and that the principles of learning derived from laboratory experiments therefore constitute the only acceptable methods of changing behavior. It should be pointed out that those who use behavior therapy approaches are by no means unanimous in this assertion. Joseph Wolpe (1970), for example, acknowledged by many to be the father figure of the modern behavior therapy movement, points out that “neurosis and schizophrenia are behavior disorders with separate and probably entirely unrelated etiologies” (p. 179). Henderson (1971) acknowledges “the possibility of a physiological deficit among persons diagnosed as schizophrenic,” and suggests that “although such a deficit may intervene in cognitive, conative or affective stimulus response chains, there remains the likelihood that many of these responses can be acquired or removed according to established principles of learning” (p. 223). Ludwig, Marx, and Hill (1971) advocate the use of operant procedures along with “psychotropic medication, electroconvulsive therapy, or other ‘non-operant’ procedures,” and several investigators (e.g., Heap et al. 1970, Olson and Greenberg, 1972, and Pomerleau, Bobrove, and Harris 1972) have
reported the successful combination of behavioral and milieu approaches. Behavior therapy does not preclude the use of other approaches. Although there will certainly be times when advocates of various positions will clash on the appropriateness of particular procedures, such confrontations are becoming less and less frequent.

Myth Three: Behavior Therapy Is Cold and Mechanical

The outsider... may get the impression that the behavior therapist impersonally selects his techniques and imperiously applies them to a passively acquiescent patient. This really happens only in certain experimental investigations. The clinical reality usually includes a good deal of verbal interaction designed to obtain the patient's understanding and happy agreement to what is to be done. [Wolpe 1971, p. 121]

There is simply no evidence to indicate that the behavior therapist cares less or that he makes less use of clinical skills based on sensitivity to human emotion and suffering than any other member of the helping professions.

Myth Four: Behavioral Program Is Too Expensive

Ingenuity in planning is sometimes called for, but many investigators have reported highly successful programs that cost little more to implement than traditional custodial care. Wagner and Paul (1970), for example, were allowed no extra staff and a $200 maximum for supplies and equipment for a program through which they achieved dramatic reduction in soiling for 19 incontinent patients. Assuming they spent their entire $200 allocation (administrators of public funds are always punished if they do not spend their budgets), the program cost about 35¢ per patient per week. Gentry and Willetts (1972) report on a highly successful token program that cost $2.60 per patient per month over and above the regular cost. Some programs (e.g., Arann and Horner 1972 and Glickman, Plutchik, and Landau 1973) have operated without any extra allocation at all, and some have no doubt resulted in considerable savings for the institution. Consider, for example, the potential economic problem of the patient who persistently set fires on his ward. Referring to such a patient, Royer, Flynn, and Osadca (1971) reported: “Traditional methods of management, such as revocation of privileges, denial of access to matches and increased surveillance failed to control his behavior” (p. 229). After aversion therapy, a 4-year followup showed no recurrence. Or, consider the patient mentioned previously who went on regular glass-breaking binges (Agras 1967). Allowing his behavior to continue would not only have been costly to the institution but dangerous to the welfare of the patient and others in his environment. Yet continuous measures for restraining him would also have been costly to the institution, and would have denied to the patient a measure of liberty for which no price can be stated. Two other studies (Burley and Steiger 1972 and Shean and Zeidberg 1971) have reported substantial savings in medication costs—up to 1,000 dollars per year per 25 patients—as a result of the decreases in medication required to control aggressive and physically destructive behaviors on behavior modification wards.

But these savings are dwarfed by the estimated savings based on differential treatment results (behavioral vs. custodial care/medication) reported by Foreyt et al. (1975). In one of the first benefit-cost studies conducted on a token economy program, these investigators attempted to compare the cost to the government of the first 18 months of a token economy program to the benefits produced during that period. The most conservative estimate resulted in a benefit-cost ratio of 109:1. Since any ratio above 1:1 is economically desirable, the authors conclude that in addition to performing a humanitarian service for the patients, token economies can save the taxpayers large sums of money.

Indeed, the data at hand indicate that the “extra expense” of behavioral treatments is a myth. There may be other treatments that are equally effective or even more effective, and that can be implemented even more economically, but at the present time the data have not made clear which treatments these might be.

Ethical and Legal Issues

Within behavior therapy circles, the single hottest issue at the present time involves governmental and media attention to behavior modification (Davison 1974). At the 1974 Annual Convention of the Association for Advance-ment of Behavior Therapy, Arpiar Saunders (1974), Staff Attorney for the American Civil Liberties Union, pointed
out 40 significant papers and reports appearing during the preceding 22 months that dramatized "an ever growing controversy concerning behavior therapy and its applications within total institutions." Without doubt, abuses within institutional systems have occurred, and when the whistle has been blown the staff members responsible have often invoked "behavior modification" as their defense (see May et al., in press, for specific examples in the State of Florida which received national attention). While it can be argued that in most of these cases the staff members responsible were untrained and unqualified, recent court decisions have placed even the best supervised programs in a questionable light. As Wexler (1973) states:

the crux of the problem, from the viewpoint of behavior modification, is that the items and activities that are emerging as absolute rights are the very same items and activities that the behavioral psychologists would employ as reinforcers—that is, as "contingent rights." [pp. 93-94]

The recent turn of events should not be construed to imply that behavior therapists have been insensitive to the rights of patients. Some of the earliest investigators took a great deal of care to protect what they considered their patients' basic rights (e.g., Gericke 1965). Ayllon and Azrin (1968b) adopted a number of rather stringent procedures "to guarantee that the dignity of the patients was respected in every way and that there was no infringement of their rights" (p. 19). The problem, simply put, is honest disagreement over what constitutes the basic rights of a patient. Who would have imagined 5 years ago that a court would determine that patients have a right to curtains or television?

Begelman (1973) has expressed his disappointment in the efforts of behaviorists to articulate the ethical issues surrounding the use of their procedures. The present writer must echo Begelman's disappointment. But the same superficiality can be attributed to those who make the attack. It is imperative, of course, that the behavior therapist know the current ethics literature, but he should be warned not to expect great bursts of light for he surely will not find any. The following observations about the present state of the ethics literature may, however, help the reader who decides to wade into the fray.

**Lack of a Basic Philosophical Stance**

Neither side has yet approached the issue from a basic philosophical stance. Rather, positions seem to be stated from an arbitrary "right-or-wrong" standpoint, hardly a satisfactory way of resolving issues of such magnitude. For example, even the specific, large-scale effort of May et al. (in press)—in cooperation with the State of Florida Division of Retardation—fell short of its goal of developing a "philosophy" concerning the use of behavior therapy techniques in State institutions for the retarded. The product of this task force is an almost totally prescriptive document, the main thrust of which is to specify which techniques are acceptable and the circumstances under which they may be used. The task force has done some excellent ground breaking, however, in that such prescriptive efforts are enormously helpful in the immediate "crunch." But at the same time they open up the dangerous possibility of rendering our treatment programs static for many years to come and do little to help evaluate the appropriateness of new techniques that may be developed. Let us hope that the recently appointed Task Force on Legal and Ethical Issues of the Association for the Advancement of Behavior Therapy, and a similar body formed by the American Psychological Association, The Commission on Behavioral Modification, will build on—not duplicate—the good beginning made by the May task force.

It is perhaps not fair to say that philosophical issues have been totally overlooked. A few sparring swings have been made at the issue of "determinism vs. free will" (e.g., Bandura 1974). But this issue seems more to have sidetracked than to have clarified any real points of philosophical disagreement, partly because there is such vast disagreement within the behavioral camp itself over "total behavioral determinism," and partly because of the general consensus that even if our behavior is determined, we all act as if we were free.

It is my opinion that the basic roots of disagreement over the use of behavioral techniques lie in an entirely different issue, that of "human nature—good, bad, or neutral." Advocacy groups, whether they be formed to protect the rights of prisoners, the mentally retarded, or the mentally ill, seem to represent a philosophy of human nature set forth by Rousseau, Heidegger, Compte, and Dewey and reflected in the theology of Rauschenbush,
It is the philosophy that is expressed in psychological terms by Maslow, Rogers, Allport, Goldstein, and a host of other humanistic psychologists. If, as Maslow (1970) says, human beings will grow to their most noble potential given a supportive but free environment, certainly the controlling aspects of behavioral programs must be seen as detrimental and destructive. Within this concept of human nature, “basic human rights” can be seen as “basic human needs,” and thus as absolutely necessary for healthy growth. Behaviorists, on the other hand, have assumed a more Lockian stance, asserting that “man is what he has learned to be,” from which position one might more easily argue for behavioral change, externally decided and imposed. It has even been pointed out that deep within the behaviorist’s view of human nature lurk hedonistic assumptions (Boneau 1974) reminiscent of Freud’s view that apart from the control and constraints afforded by society (via the superego and ego) human beings would be totally self-seeking, anarchistic creatures. Regardless of the true nature of behaviorism’s anthropology, it is certainly different enough from that of the humanist to generate strong disagreements over issues such as “control” and “basic rights.” It is to be hoped that some scholarly work will bring some clarity and focus to these issues.

Emotionalism

The reader will find that in discussions of the ethics of behaviorist techniques words laden heavily with emotional overtones are used as befits the particular purposes of the writer, rather than in any standardized fashion. Ayllon and Azrin (1968b), for example, take pride in the absence of “coercive procedures” in their token economy program, while Russell (1974) castigates token economies as among the worst examples of “coercive control.” “Coercion” is not generally thought of as a nice word, and as used by Russell it could be applied judgmentally to any situation in which access to certain reinforcers is restricted by certain behavioral requirements. For example, Russell states that “all operant token programs require some method of preventing subjects from acquiring tokens or money from nonexperimental sources. Thus, patients are deprived of alternative sources to satisfy their needs” (p. 19). He is absolutely correct in his description of token economies, but one must argue with his equating of such procedures with “coercion.” By such a definition, the community I live in “coerces” me into working because it will not give me all the good things of life from alternative sources that do not require work. Similarly, I am guilty of using coercion on my son if I set forth any behavioral requirements for his use of the family car on Saturday night. Coercion as defined by Russell (1974) is as much a part of accepted social life as mothers and apple pie, and as such should be used in institutions if we are to make them resemble external community life as much as possible. Russell obviously chooses the word because of its negative emotional connotation in the hope of bolstering a weak argument against behavioral procedures.

Wexler (1973) is guilty of using a similar negative phrase, “forced patient labor,” which sounds terrible by anyone’s standards—that is, until one realizes that no patient, in even the most stringent token economy, has any more force applied (and usually far less) than the average member of the outside community. One may counter by protesting, “But wait a minute. Can’t a member of the community change jobs if he doesn’t like the one he has?” Indeed he can. And so can the patient in a token economy, who generally has a dozen or more jobs to choose from daily if he wishes to earn tokens.

The above examples point up two issues: 1) If community-type demands are to be extended into the hospital setting in order to boost possibilities for easier community reentry, these sometimes-irksome demands (e.g., having to get out of bed and go to work) will often be attacked as violations of patients’ rights. The only alternative is to treat the patient as “sick” and provide free access to any and all services the institution can afford. 2) The use of emotionally laden words only further obscures already difficult issues. The reader should look behind the words to the particular way in which the writer is using them.

Naivete of Proposed Solutions

Solutions that sometimes seem remarkably simple may be remarkably naive. Wexler (1973) points out, for example, that whereas aversive therapeutic techniques have received close attention from the courts, “schemes of
'positive' behavior control—whereby appropriate, non-deviant behavioral responses are encouraged by rewarding their occurrence—have not been subjected to any careful study" (p. 82). He goes on to point out that a judgment is not as simple as it appears and that positive control often can be very troubling ethically, a truth many psychologists seem not to recognize. If positive reinforcement is to be effective, the positive reinforcer must not only be systematically administered, contingent upon the appropriate behavior, but must also be systematically withheld when the behavior does not occur. Hence, in using positive reinforcement, one comes face to face with the issue of what can be withheld from the patient, not just with what can be given to him.

"Informed consent" has been championed as another way out of all ethical dilemmas (e.g., Braun 1975 and Goldiamond 1974). However, when applied to operant procedures, it would seem as patently absurd to ask a patient if it were all right to withhold his cigarettes until after he had cleaned his room as it would be for an employer to ask his employees if it were all right to pay them only if they had worked. Informed consent obviously has its limitations. Recognizing this, Halleck (1974), while focusing considerable attention on the need for truly informed consent (as opposed to consent under duress), backs off and suggests that informed consent may not be necessary where the following conditions exist: 1) where the patient is judged dangerous to himself or others; 2) where there is reason to believe that the treatment will benefit the patient; 3) where the patient has been judged incompetent to evaluate the necessity for treatment. With such hedging, informed consent loses most of its punch. One can assume the above criteria have been invoked loosely for years in prescribing treatment to the unwilling patient.

Lopsided Emphasis on Patients' Rights

So far, not one article has appeared in the literature that speaks for the "rights" of those who are expected to provide food, clothing, shelter, recreation, television, and a host of other comforts (see Wyatt vs. Stickney, 344 F. Supp. 73, M. D. Ala., 1972) to those who, either by choice or incapacity, do not behave in ways acceptable to the larger community. The general thrust seems to be that the providers (or the offended) have no rights. Goldiamond (1974), for example, stated that it would be wrong for a therapist and the parents of an obese 21-year-old girl (who often appeared in public masturbating in the nude) to conspire together to change the girl's behavior. Somehow such a conspiracy would violate her rights. But one must ask about the rights of the parents who were expected to provide for this girl and at the same time to sacrifice a great deal of their own freedom in order to keep her from offending the community. Obviously, in this example we have not just the question of one person's rights but also that of a conflict of rights.

In summary, the present literature on ethical implications of behavior therapy contains some careful thinking, more than its share of naivete, and a great deal of emotional overlay. In the face of this, what should the practitioner do? He should be acquainted with pertinent court rulings (see especially the bibliography of Saunders 1974); he should search creatively for reinforcers which are highly idiosyncratic (see Wexler 1973); he should seek consultation with peers, both within and without the treatment setting (Halleck 1974); and he should encourage broad-based citizen education and input (Winett 1974) so that the ethics of treatment can be representative of community views rather than only of the views of specific advocacy groups. The behavior therapist who does not proceed with a great deal of caution, reflection, consultation, and information may unwittingly play a major role in relegating the highly promising procedures discussed in this paper to a footnote in the history of mental health care.

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