rantly for correctly spelling or reading a word, nor would many be upset over a scheme that encouraged scholastic achievement of institutionalized juvenile delinquents by offering them, contingent upon academic success, private rooms, a wider choice of food, and selections of items from a mail-order catalogue. But, as will be seen in the following section, many techniques of positive control are far more troubling. Most troubling of all seem to be the use of token economies with chronic psychotic mental patients.

1. PSYCHOLOGY AND TOKEN ECONOMIES

4. General Considerations

Many behavior modification practitioners apply clinically the learning theory principles of Skinnerian operant conditioning. Operant theory is bottomed on the principle, amply demonstrated by empirical data, that behavior is strengthened or weakened by its consequences. The frequency of a behavior increases if it is followed by desirable consequences, whereas it will be extinguished if the positive consequences are discontinued or if the consequences are aversive.

The application of operant conditioning to humans has come a long way since 1949, when a severely regressed person was taught to raise his arm by a procedure that rewarded appropriate arm motions by the subsequent squirting of a sugar-milk solution into his mouth. Now, a multitude of therapeutic behavior modification systems are in operation on ward-wide and institution-wide scales. Therapists seek to change humans in appropriate behavior patterns, designated as "target behaviors" or "target responses." By rewarding or "reinforcing," the desired responses, usually, rewards are dispensed in the form of tokens or points—known as "secondary" or "generalized" reinforcers—which can then be converted, pursuant to a specific economic schedule, to "primary reinforcers" such as snacks, mail-order catalogue items, and the like.

These "token economies" have flourished since their development in the sixties and are currently employed in a variety of clinical settings. This

10. Cf. BANDURA, supra note 4, at 249-50 (positive reinforcement as a technique for improving reading skills).
11. Cf. BANDURA 278-79.
12. A good introductory text on operant conditioning is J. R. MILLERSON, PRINCIPLES OF BEHAVIORAL ANALYSIS (1967), Chapters Two and Three deal with Classical or Pavlovian Conditioning, which is to be distinguished from operant conditioning; the latter provides the basis of the token economy. See also NOV. 43 Sf. CAMP L. 616, 627, 28 (1972).
13. Note that the behavioral psychologist explains both normal and abnormal behavior by the same principles, in an approach which differs fundamentally from "dynamic" psychology, of which the Freudian system of psychoanalysis is probably the most familiar to laymen. The dynamic psychologists, who follow a "medical model," explain abnormal behavior as the product of other conflicts and the like. For a good introduction to the contrast, see J. M. ULLMAN & L. KRASNER, CASE STUDIES IN BEHAVIOR MODIFICATION 1-65 (1965), See also BANDURA 7-63. For more recent accounts of the application of behavioral psychology to clinical settings, see recent issue of the JOURNAL OF APPLIED BEHAVIORAL ANALYSIS. Technically, the term extinction is reserved for the process of reducing the frequency of a behavior by discontinuing the "reinforcing" (rewarding) consequences.
15. "Shape" is a technical term used by operant psychologists to describe the process of gradually building a new behavior by rewarding closer and closer approximations to it.
16. AYLIIN & AYLIIN, THE REINFORCEMENT AND REINFORCED OF BEHAVIOR OF PSYCHOLOGY (1965), J. OF THE EXPERIMENTAL ANALYSIS OF BEHAVIOR 357 (1952); T. AYLIIN & N. AYLIIN, THE TOKEN ECONOMY: A MOTIVATIONAL SYSTEM FOR THERAPY AND REHABILITATION (1964) [hereafter cited as TOKEN ECONOMY] report of a project begun in 1961. There is no doubt due to the fact that much behavior therapy can be conducted by psychiatric nurses, attendants, and paraprofessional personnel, see AYLIIN & Michael, The Psychiatric Nurse as a Behavioral Engineer, 2 J. OF THE EXPERIMENTAL ANALYSIS OF BEHAVIOR 325 (1965). The rationale behind emphasizing the development of constructive behavior rather than emphasizing the elimination per se of so-called "pathological" behavior appears to be that pathological traits are often well-facilitated individual may well be discussed as mere idiosyncrasies, and, moreover, that pathological traits may not be able to exist within functional behavior, TOKEN ECONOMY 23.
17. These include populations of juvenile delinquents, newly admitted and chronic psychotics, mentally retarded patients, etc. TOKEN ECONOMY 217. For various descriptions, see BANDURA 261-81; T. STACHINK, APPRAISAL OF BEHAVIOR MODIFICATION TECHNIQUES WITH ADOLESCENTS IN INSTITUTIONAL SETTINGS, IN BEHAVIOR THERAPY, APPRAISAL, AND STATUS 250 (L. PRAXIS ed. 1969). Reprints of "Behavioral Economy," Token Economy: An Overview of Operant Conditioning Procedures with the Aged, with Youth, and with Society, in LEARNING AP.
Article will be continued almost exclusively to a discussion of the application of the token system to chronic psychotics.

There are two reasons for this limitation in scope: first, despite mammoth advances in psychopharmacology and a burgeoning community psychiatry movement which have combined to reduce drastically mental hospital enrollment, almost all chronic psychotics are still hospitalized. If other clinical categories are increasingly diverted from institutions, while the chronic personnel continue to accumulate, the treatment of the chronic psychotic may soon constitute the major therapeutic concern of mental hospitals. Second, because the behavior patterns of chronic psychotics are by definition particularly resistant to therapy, more drastic methods of behavior modification have been applied to them. These therapeutic methods will raise important legal questions.

II. Token Economics

Teodoro Ayllon and Nathan Azrin pioneered the token economy concept on a ward of chronically psychotic female patients at the Anna State Hospital in Illinois. Because of their adaptation to long periods of stagnation hospitalization, chronic patients typically suffer from extreme apathy and dependency. This condition, known as institutionalization, impedes the chronic's chances for improvement or release. To overcome this problem, Ayllon and Azrin rewarded target behaviors that would reverse the institutionalization syndrome. Work assignments within the hospital and various self-care behaviors were rewarded with tokens. The self-care category included grooming, bathing, toothbrushing, bed making and the like. Work assignments included kitchen chores, serving in the dining rooms, assisting in the laundry, janitorial work, and related tasks.

For the token economy to succeed, it is necessary to insure that the items or events purchasable with the tokens are effective reinforcers—in lay terms, that they would in fact be desired by the patients. To solve this problem, the Anna State Hospital psychologists applied the "Premnack Principle": if certain behaviors occur naturally with a high frequency then the opportunity to exchange these behaviors for tokens can be used as an effective reinforcer to strengthen a low-frequency behavior. The psychologists determined the high-frequency-behaviors empirically.

It was noted that certain patients often hoarded various items under their mattresses. The activity in this case, in a general sense, consisted of concealing private property in such a manner that it would be inaccessible to other patients and the staff. Since this event seemed to be highly probable, it was formally scheduled as a reinforcer. Keys to a locked cabinet in which they could conceal their private possessions just as they had been doing with the mattresses were made available to patients.

Another activity that was observed to be highly probable was the attempt of patients to conceal themselves in several locations on the ward in an effort to enjoy some degree of privacy. A procedure was therefore instituted whereby a patient could obtain a portable screen to put in front of her bed or access to a bedroom with a door. Another event that had a high probability of occurrence for some patients was a visit with the social worker or psychologist. This was used as a reinforcer by arranging appointments with either of these staff members.


14 JAVLIK, THE PSYCHOPHARMACOLOGICAL REVOLUTION, IN READINGS IN CLINICAL PSYCHOLOGY TODAY 93 (1970).

15 PSYCHIATRIC JUICE PROJECT, supra note 1, at 118-27.


17 TOKEN ECONOMY, supra note 16.

18 See generally E. COFFMAN, ASYLUMS (Anchor ed. 1961). See also PSYCHIATRIC JUICE PROJECT 237-38: "The depressing surroundings, the idleness, the loss of ordinary privileges, the isolation from family, friends and developments in the outside world—these and many other aspects of institutional life, which are almost inherent characteristics of state hospitals, lead to a loss of motivation, to withdrawal and regression, and to apathy, submissiveness and an inability to make decisions. In short, hospitalization itself produces a distinct functional pathology, appropriately dubbed "institutional morbidity."" (citations omitted)

19 TOKEN ECONOMY, supra note 16, at 256.

20 Id. at 134-35.


22 TOKEN ECONOMY 36.
Ground privileges and supervised walks by the staff were also established as reinforcers by application of the Premack Principle, since patients were frequently observed to “stay at the exit to the ward and try to leave.” The opportunity to attend religious services was also used as a reinforcer since several patients attended frequently when they were allowed to freely.

Thus, personal cabinets, room dividers, visits with the professional staff, ground privileges, supervised walks, and religious services were all made contingently available to the patients; they could be purchased if the patient had performed a sufficient number of target responses to have earned the requisite tokens to purchase the reinforcers. They were otherwise unavailable. Other reinforcers in the Anna State Hospital program included a personal chair, writing materials and stationery, movies, television programs, and various commissary items.

By using these “strong, albeit untapped” sources of motivation, the Ayllon and Azrin economy produced rather impressive results when measured by standards of work performance. They compared the work output of their patients during a specified period of the token economy with a subsequent experimental period during which the various reinforcers were freely available without tokens—a situation which “approximated the usual conduct of a mental hospital ward.” Ayllon and Azrin found that patient performance during the experimental period plummeted to less than one-fourth the token economy level. Hence, they concluded that “the performance on a usual ward would be increased fourfold by instituting this motivating environment.”

Nonetheless, the Anna State Hospital program did not change the behavior of 8 out of 44 patients involved: Eight patients, who expended fewer than 50 tokens within 20 days, all earned by self-care rather than from job assignments, were relatively unaffected by the reinforcement procedure. Statistical comparison of them within the other patients revealed no difference in diagnosis of age. It appears that their failure to modify behavior appreciably stemmed from the relative absence of any strong behavior patterns that could be used as reinforcers. The only two behaviors that existed in strength were sleeping and eating. The present program did not attempt to control the availability of food. This action may have to be considered in future research in order to rehabilitate patients with such an extreme loss of behavior.

Many token economy programs have been patterned after the Ayllon and Azrin model. In Atthowe’s program for chronic patients at the Palo Alto Veterans Administration Hospital, for example, patients earned points not only for their industrial therapy job assignments, but also for participating in group activities, in recreational therapy, and for attending weekend movies. And reinforcers in various programs include later wake-up times, passes, clothing, clothing maintenance, reading materials, dances, and even

\[\text{id} \text{ at 224. See also id. at 64-65.}\]
\[\text{id} \text{ at 62-63.}\]
\[\text{id} \text{ at 220.}\]
\[\text{id} \text{ at 209.}\]
\[\text{id} \text{ at 185.}\]
\[\text{id. See also id. at 256-61.}\]
\[\text{id} \text{ at 210.}\]
\[\text{id} \text{ at 200. But see also Davison directed at Ayllon & Azrin’s conclusion: I believe that Ayllon and Azrin would do well to break set and at least consider the possibility that the behavior (both overt and covert) of some chronic hospital patients is regulated by processes which have little, if anything, to do with operant conditioning.” Davison, supra note 17, at 250.}\]
\[\text{M. Willard & Abell, Performance on a Token Economy Psychiatric Ward: A Two Year Summary, 7 Behav. Res. & Therapy 1, 6 (1967).}\]
\[\text{B. Lloyd & Abell, Performance on a Token Economy Psychiatric Ward: A Two Year Summary, 7 Behav. Res. & Therapy 1, 6 (1967).}\]
\[\text{B. Lloyd & Abell, Performance on a Token Economy Psychiatric Ward: A Two Year Summary, 7 Behav. Res. & Therapy 1, 6 (1967).}\]
\[\text{Arm, Experimental Application of Reinforcement Principles to the Analysis and Treatment of Hospitalized Alcoholics, 28 Q. J. Stud. of Alcohol 165, 168 (1967).}\]
\[\text{B. Lloyd & Abell, A Token Economy Program Evaluation with Untreated Control Ward Comparisons, 7 Behav. Res. & Therapy 137, 141 (1971).}\]
\[\text{id.}\]
release. Moreover, several programs have taken the step recommended but not taken by Aylwin and Azrin and have made food and beds available only on a contingent basis. Indeed, those programs have exceeded the Aylwin and Azrin recommendation by using beds and meals as reinforcers on a ward-wide basis, and thus even for patients who have not failed under a system where food and sleeping facilities were non-contingently available.

One of the token economies that hinges food and beds on appropriate behavioral responses—a chronic ward at the Patton State Hospital in San Bernardino, California—is willing to let a patient go for as long as five days without food, or until he has been reduced to 80% of his previous body weight. \(^{43}\) The Patton program is one of several token economies \(^{44}\) that follows a "phase" or "tier" system, where at least certain privileges are dependent upon the patient's place in the hierarchy of tiers.

At Patton, for example, newly admitted patients are placed in the orientation group, where living conditions are exceedingly drab, and where the subsistence-level existence can be purchased for a small number of tokens. After a patient has adapted well to the orientation group, he is elevated to the middle group, where conditions are better but are considerably more expensive. Patients in the middle group are given five months to be promoted to the rather luxurious ready-to-leave group, but if after three months in the middle group a patient is not adequately facing the eventual prospect of life on the outside, he will be returned to the orientation group. \(^{45}\) Margaret Bruce, a psychiatric technician at the Patton State Hospital, described the orientation group in these words:

"This group sleeps in a relatively unattractive dormitory which conforms to bare minimums set by the state department of mental hygiene. There are no draperies at the windows or spreads on the beds, and the beds themselves are of the simplest kind. In the dining room the patient sits with many other patients at a long table, crowded in somewhat uncomfortably. The only eating utensil given him is a large spoon. The food is served in unattractive, sectioned plastic dishes. So long as he is in this group, he is not allowed to wear his own clothes and cannot go to activities which other patients are free to attend off the unit. He may not have permission for off-the-ground visits, and the number of visitors who can see him is restricted.

"During this time, the patient learns that his meals, his bed, his toilet articles, and his clothes no longer are freely given him. He must pay for these with tokens. These tokens pay for all those things normally furnished and often taken for granted. In the orientation group most of the things the patient wants are cheap; for example, it costs one token to be permitted to go to bed, one token for a meal. Patients find it easy enough to earn the few tokens necessary for bare subsistence." \(^{48}\)

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\(^{44}\) Schaefer, supra note 34, at 33-34. Actually, the quoted remark was made in the context of overcoming refusal-to-eat problems exhibited by some of the patients, but if the hospital is medically willing to allow those patients to miss five consecutive days of meals, it seems reasonable to assume that the same medical standard would be applied to patients who presumably desire to eat but who have not earned a sufficient number of tokens to pay for meals.

\(^{45}\) Lloyd & Abel, supra note 30; Narrel, supra note 39. Cf. Attchow & Krasner, supra note 35.


\(^{47}\) Id. at 1800-01. The Patton system is advocated by behaviorists that noncontingent rewards ought to be provided at an "adequate but relatively low level," with preferred reinforcers being available "contingent upon the occurrence of desired response patterns." HARTING, supra note 4, at 233. Under such an approach, therapy can be managed chiefly by positive reinforcement, without resort to punishment, and patients, the argument continues, have only themselves to blame if their privileges are inadequate. Indeed, several programs have noted the benefits of an earth-your-way system, in notable contrast to more traditional approaches where "mandating educational or group therapy participation by threatening loss of visits and other privileges or delayed release and by stimulating the social defection and cutting the traits of the population, and rebellion against the regulations of the institution provided an increase in prestige and enhanced status in the eyes of
Before leaving a description of token economies, it will be instructive to discuss in some detail a token environment established at the Richmond State Hospital in Indiana. This particular system, although involving a population of civilly committed alcoholics rather than chronic psychotics, is particularly worthy of note because it suggests just how easily the Ayllon and Azrin token economy model can be extended to other clinical categories of patients.

Prior to the inception of the token economy, legally committed alcoholics at Richmond State were first admitted to the Receiving Unit, where they were provided with rest and medical care. Within one or two weeks the patient was usually assigned to an open ward in the hospital and all the available privileges. When the token system was introduced, certain alcoholic patients without intellectual, organic or psychotic impairments were inducted into the program. Work in the hospital labor force, compensated by points, was deemed the target behavior. The reinforcers included a broad range of patient needs and privileges:

The motivational power of the points was derived from allowing their exchange for every possible purchase within the hospital; thus, room and board, clothing, maintenance, canteen purchases, Alcoholic Anonymous meetings, short leaves of absence, discharge, treatment, different kinds of psychotherapy, and special instruction could all be freely selected, if paid for out of earnings.

Points were also used to purchase advancement through the five tier systems established at Richmond. These tiers consisted of two closed wards, a segmented ward where ground privileges were available by purchase, and two open wards with pass privileges. Patients could purchase promotion only at weekly intervals. The program was considered aversive by prospective members, as well as by the inducted members who requested weekly group meetings which became, mainly, "a grievance session centering around project rules." No doubt this grievance was in part attributable to the fact that "a deprivation situation was established by starting patients in a closed ward of low status, substantia material and social comfort, and curtained freedom, relative to other wards in the hospital." The legal issues raised by the token economies may be as follows:

The peer group. Glickman, Oftonannel & Cutler, The Earn-Your-Way Credit System; Use of a Token Economy in Vocational Rehabilitation, 6 INTL J. O. THE ADULT 525 (1971). Some commentators have criticized our penal-correctional system for giving inmates non-contingently whenever benefits are available, and then denying some of the benefits as punishment for wrongful behavior—system where "the staff members are cast in the unrelenting role of punitive agents, and the inmates can move only in a downward direction, Bavaria 230. To the same effect, see Hinzburg, A Learning Theory Analysis of the Correctional Process, 3 JOURNAL IN CRIMINOLOGY 43, 44, 45 (1970). See also M. Hinzburg, Social Learning Theory and Social Problems: The Case of Prisons, An unpublished manuscript on file with us there. At the same time that a noncontingent system of rewards is operating a concurrent system of punishments is attempted; the result is that inmates come to view the rewards as rights rather than privileges, and that they are threatened with the denial of these when they are not so.'pointably embittered.' (Citations omitted). It has been suggested that when contingencies are so managed, "the majority of the participants comply halfheartedly with the mandatory bounds of the institution in order to avoid penalties for any breach of the rules," and that, in a psychic setting, "patients can best maximize their rewards by merely adopting a passive patient role," Bavaria 230. If the legal system wishes to accept the coercive of the behaviorists, the crucial question for the law, of course, will be to define, for various clinical populations, just where the line of non-contingent rewards at an "adequate but relatively low level" ought to be drawn.

Lurak, Experimental Application of Reinforcement Principles to the Analysis and Treatment of Hospitalized Alcoholics, 28 Q J. OR STRUGGLES ON ALCOHOL, 105 (1967).

As will be apparent, it also raises certain serious questions about the ethical propriety of the type of psychological research involved. See also Rubin, Jokers Wild in the Lab, Psychological Today, Dec., 1970, at 17.

Lurak, Experimental Application of Reinforcement Principles to the Analysis and Treatment of Hospitalized Alcoholics, 28 Q J. OR STRUGGLES ON ALCOHOL, 105, 107 (1967).

Id. at 108. With respect to the right to treatment, the same author states: "The obligation to treat the patient need not be neglected, since purchase of all the available therapeutic services may be permitted." Id. at 106, 107.

Id. at 109. Of particular concern, from the viewpoints of the ethics of research, is that "work was made the target behavior for the purposes of simple demonstration of reinforcement technique." Id. at 107. In other words, "the project had no therapeutic purpose, but demonstrated that behavior can be controlled in a institutional." Id. The study proceeded at the rate that patients were assigned to the 4-hour day, worked by non-professional alcoholics. Id. at 108. But that is hardly a startling finding, particularly since the project was based on the Ayllon & Azrin model, which the project had adhered to, established, and was noted to have been hardly surprising by the outcome: "Definite evidence of increased work output was obtained, as might be expected." Id.
be apparent by now and they will be considered in the next section. An analytical examination of some of the more difficult competing psychological and legal considerations will, however, be deferred until section III.

II.—LAW AND TOKEN ECONOMIES

To speak at the moment of a specific "law of token economies" is of course out of the question, for at this date there is scarcely a handful of statutory and judicial pronouncements dealing even generally with the rights of the institutionalized mentally ill. Until very recently, the judicially manufactured "hands-off" doctrine enabled the courts to duck important questions regarding the limits of administrative discretion in the operation of prisons and mental institutions. According to the correctional and therapeutic establishments were in effect given, by default, the legal nod to manage their institutions—and to conduct their therapy—as they saw fit. But the last few years have witnessed a remarkable turnabout in the willingness of courts to scrutinize living conditions in total institutions. Though the activity has thus far been slower in the mental health area than it has been with regard to prisons, the successful legal penetration of mental hospitals appears to be a more promising prospect than in the analogous prison movement. Already, some bold and far-reaching decisions have been rendered, and there is the further possibility of widespread legislative action. From the sparse legal precedents, one can detect a rather clear trend, and the emerging law bears rather directly on the rights of patients subjected to a token economy.

The encouragement of certain target responses—such as proper personal hygiene and self-care—surely seems beyond legal question, but it will be recalled that the principal target response of most token economies is adequate functioning on an institutional work assignment. Many persons both within and without the legal profession, however, find it objectionable in effect to require patients—especially involuntarily committed patients—to work for mental institutions, particularly without standard compensation. Though the work assignments are often cast in therapeutic terms, such as overcoming apathy and institutionalization, the critics view the jobs as simple laborsaving devices which exploit patients and, indeed, which sometimes make hospital retention of particular patients almost indispensable to the functioning of the institution.

That patient job assignments are in fact often laborsaving is beyond question, as is the fact that work output will increase substantially when work is contingently reinforced by the standard reinforcers employed by token economies. Indeed, it will be recalled that an Anna State Hospital in Illinois. Ayllon and Azrin concluded that ward efficiency soared astronomically—fourfold—because of a token system involving job performance, and they noted further that unsatisfactory job performance resulted in administrative disruption. During a patient vacation period "the additional work required to keep the ward functioning... had to be made up by paid employees whose hours almost doubled."

*E.g.,* Note, Beyond the Ten of Courts: A Critique of the Judicial Refusal to Review the Complaints of Consul, 73 Yale L. J. 506 (1963)

61 E.g., Note, THE RIGHT TO BE DIFFERENT: DYSTOCHIA. AND ENFORCED THERAPY 207-08 (1971). Cf. O'Donohue v. Higgs, 73 Wash. 2d 814, 820 n.2, 440 P.2d 828, 828 n.2 (1968): "One who enters a hospital as a mentally ill person either as a voluntary or involuntary patient, impliedly consents to the use of such force as may be reasonably necessary to the proper care of the patient."


63 Ironically, however, an experiment conducted by Ayllon and Azrin seems to demonstrate that "although the reinforcement for self-care was initiated to maintain a minimum standard of cleanliness and personal hygiene, changes in the reinforcement contingencies produced no appreciable difference in self-care practices." TOKEN ECONOMY, supra note 10, at 201-02, R Id. at 210.

64 Thus, the critical issue is the actual value of the tokens earned. In the example given by Ayllon and Azrin, "some jobs that were fairly demanding physically and that required three hours through the day for completion, such as sweeping the floors, earned only about five tokens." TOKEN ECONOMY 204.

65 TOKEN ECONOMY, supra note 16, at 201.

66 Id. at 201-02.

67 Id. at 210.
It seems clear that the law will not tolerate forced patient labor that is devoid of therapeutic purpose and which is required solely as a labor saving technique. The Second Circuit, invoking a Thirteenth Amendment involuntary servitude rationale, so held in 1906. Since then, recognition that there is not always a sharp line dividing therapeutic and non-therapeutic assignments has led to varying legal theories for avoiding the problem.

One rule is suggested by Bruce Ennis, a leading mental health lawyer who is keenly aware of the disparate per diem cost between private and state hospitalization and of the cost-saving devices resorted to by state hospitals. He would adopt the following as a legal rule of thumb in deciding whether work assignments have therapeutic value: "If a given type of labor is therapeutic, we would expect to find patients in private facilities performing that type of labor. Conversely, labor which is not generally performed in private facilities should be presumed... to be cost-saving rather than therapeutic." The "avoidance" approach is exemplified by the elaborate decision in Wyatt v. Stickney, in which the court barred all involuntary patient labor involving hospital operation and maintenance—whether therapeutic or not—but permitted voluntary institutional work of either a therapeutic or non-therapeutic nature, so long as the labor is compensated pursuant to the federal minimum wage law. To insure the voluntary nature of any institutional work assignment undertaken, the Wyatt court specified further that "privileges or release from the hospital shall not be conditioned upon the performance of labor." The approach taken by the landmark Wyatt decision, widely followed, would have an immense impact on traditional token economies. Patients could not be forced in any way to perform institutional labor assignments—and the force could not legitimately be exerted indirectly by making basic reinforcers "contingent" upon appropriate performance. Further, if patients should decide voluntarily to undertake institutional tasks, the minimum wage is the legally required "reinforcer." Under Wyatt, therapeutic assignments unrelated to hospital operations can constitute legitimate target responses that can be rewarded without regard to the minimum wage. But, perhaps most significant for token economies, Wyatt and related legal developments seem to have a great deal to say regarding the definition of legally acceptable reinforcers.

According to the Wyatt court, a residence unit with screens or curtains to insure privacy, together with "a comfortable bed, a closet or locker for [the patient's] personal belongings, a chair, and a bedside table are all constitutionally required." Under Wyatt, patients are also insured nutritionally. 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."

Judgment in Wyatt further ordered that payment to patients for such work shall not be applied to offset hospitalization costs. Id. at 331. The minimum wage law is the Fair Labor Standards Act, 29 U.S.C. § 206 (1971).
adequate meals with a diet that will provide "at a minimum the Recommended Daily Dietary Allowances as developed by the National Academy of Sciences." Wyatt further enumerates a general right to have visitors, to attend religious services, to wear one's own clothes (or, for those without adequate clothes, to be provided with a selection of suitable clothing), and to have clothing laundered. With respect to recreation, Wyatt speaks of a right to exercise physically several times weekly and to be outdoors regularly and frequently, a right to interact with members of the other sex, and a right to have a television set in the day room. Finally, apparently borrowing from Judge Bazelon's opinion for the District of Columbia Circuit in Covington v. Harris, Judge Johnson in Wyatt recognized that "patients have a right to have clothing laundered." With respect to recreation, Wyatt speaks of a light and Constitutional Imperatives, To the extent that certain Group C patients could clinically manage ground privileges—which, given the system, seems almost beyond doubt—this program and many others devised along similar patterns seem to offend the "least restrictive alternative" rationale.

The "least restrictive alternative" rationale was first applied in the mental health law area in Lake v. Cameron, 364 F.2d 607 (D.C. Cir. 1966), an opinion authored by Judge Bazelon, which held that commitment itself should be ordered only if no suitable but less drastic alternatives to commitment could be located. For a discussion of the constitutional doctrine of "least drastic means" in the commitment context, see Psychiatric Justice Project, supra note 1, at 140-46. See also Chambers, Alternatives to Civil Commitment of the Mentally Ill: Practical Guides and Constitutional Imperatives, 70 Mich L. Rev. 1107 (1972). In Covington v. Harris, 419 F.2d 617 (D.C. Cir. 1969), Judge Bazelon simply extended the doctrine to life within the confines of the hospital environment.

A similar problem seems to be present in the token economy system of State Hospital North, Croton, Idaho, as described in Lloyd & Abel, Performance on a Token Economy Psychiatric Ward: A Two Year Summary, 8 BEHAV. RES. & THERAPY 1 (1970). In addition to using tokens for "standard" reinforcers, the State Hospital North program has a phase system which requires the accumulation of tokens for phase promotion. For example, if a patient accumulates 2,000 tokens in a three week period, he or she is rewarded with a greater number of tokens. Failure to earn 2,000 tokens in the three week period results in demotion to a lower phase. In this way, patients are encouraged to earn tokens for activities such as exercising, eating, and attending religious services. The token economy system at State Hospital North is similar to the system described by Judge Bazelon in Covington v. Harris, where patients are rewarded with tokens for activities such as exercising, eating, and attending religious services. The tokens can then be exchanged for privileges such as meals, television, and visits with family members.
which outright release from the institution is conditioned upon the accumulation of a set number of tokens or points.\textsuperscript{89}

\textit{Wyatt} is obviously a decision of extraordinary detail and specification, perhaps because of comprehensive stipulation among the parties and amici.\textsuperscript{90} Nonetheless, the case\textsuperscript{91} is fully consistent with the trend of legal thought.\textsuperscript{92} Because the distinct direction of legal thinking bears so heavily on traditional tactics for the behavior modification of chronically psychotic behavior, it is important to examine closely certain particulars of the psycho-legal nature and their implications and to point, if possible, to a proper path for future legal and therapeutic development.

III.—ANALYSIS AND IMPLICATIONS

The important question of the therapeutic or non-therapeutic nature of institutional labor is unfortunately far more complex than would be indicated by the black or white treatment it has received from both legal and psychological

\textsuperscript{89} A token economy program in New York which involves civilly committed narcotic addicts presumably hinges release—or at least eligibility for release consideration—upon the accumulation of 380 points. Gilkeson, Ottomanei & Cutler, \textit{The Earn-Four-Way Credit System: Use of a Token Economy in Narcotic Rehabilitation}, 6 INT'L J. on TIM, 1974, supra note 15, at 525-27 (1971). To the extent that the point accumulation system does not mesh squarely with statutory or clinical criteria for release, such a system presents serious questions regarding the unwarranted deprivation of liberty. The only saving grace for the patient may be that his patients are released after an average of 7.5 months. \textit{Id. at 528. See also Atthowe, Ward 113 Pro- gram (For Patients of Veterans Affairs), 10 (Veterans Ad., Palo Alto 1964) (before patient can be eligible for 90-day trial visit, must be in Group A for 30 days, and it costs 120 tokens to enter Group A, assuming there is an opening).}


\textsuperscript{91} Another somewhat less precise, legal problem facing token economies may exist in the confusion between activities that constitute target behaviors. More specifically, different token economies may classify the same activity differently. For example, chronic patients at the Palo Alto Veterans Administration Hospital earned tokens for attending group activities, recreational events, and movies (which were viewed as target behaviors), whereas Anna State Hospital patients had to expend tokens to attend similar activities (which were viewed as reinforcers). Compare Atthowe, supra note 89, at 7, with Token Economy, supra note 16, at 226. In view of the emerging constitutional right to treatment (see Wyatt v. Stickney, 344 F. Supp. 781 (M.D. Ala. 1971)), it seems problematic at best to charge for psychotherapy sessions, as at Anna State Hospital and Richmond State Hospital, particularly when so few patients seem willing to expend tokens to attend such sessions. E.g., Token Economy 96-97, 226, 234; Narrod, supra note 51, at 108-09. Indeed, even the previously mentioned activities—such as recreational events and movies—may have significant therapeutic value (and may fall within the scope of the right to treatment) in reducing boredom, increasing interaction and, in the case of movies, in providing a vicarious experience for learning or modeling appropriate social behavior. See Bandura, supra note 4, at 178-82, n. 82, that therapy sessions, recreational events, movies, writing materials (to increase contact with the world outside) and other items and events ought to be provided, as part and parcel of the right to treatment, on an absolute, noncontingent basis. Cf. Conington v. Harris, 412 F.2d 617, 623-26 (B.C. Cir. 1969). Interestingly, however, even the noncontingent ready availability of such therapeutic items and events may be insufficient to arouse interest in them on the part of a highly psychotic patient population. A possible solution is to convert important therapeutic activities into token-earning target responses, as Atthowe did in Palo Alto. In psychological terms, such a course of action requires "considering the selection of a reinforcer as a response to be strengthened." Aylor & Atria, Reinforcer Sampling: A Technique for Increasing the Behavior of Mentally Patients, v. J. of Applied Behavior ANALYSIS 13, 14 (1963). In legal terms, we seem to have developed a new category of "reinforced rights."

Those with Hofflordan hangups might wish to construct a spectrum of patient rights—and correlative hospital obligations—along the line of privileges (dispensed or withheld by hospital discretion), contingent rights (legitimate primary reinforcers mandated by the emerging constitutional right to treatment), rights (available absolutely and noncontingently), and correlative hospital obligations along the line of privileges (dispensed or withheld by hospital discretion), contingent rights (legitimate primary reinforcers mandated by the emerging constitutional right to treatment), rights (available absolutely and noncontingently), and correlative hospital obligations along the line of privileges (dispensed or withheld by hospital discretion), contingent rights (legitimate primary reinforcers mandated by the emerging constitutional right to treatment), rights (available absolutely and noncontingently), and correlative hospital obligations along the line of privileges (dispensed or withheld by hospital discretion), contingent rights (legitimate primary reinforcers mandated by the emerging constitutional right to treatment), rights (available absolutely and noncontingently), and correlative hospital obligations along the line of privileges (dispensed or withheld by hospital discretion), contingent rights (legitimate primary reinforcers mandated by the emerging constitutional right to treatment), rights (available absolutely and noncontingently), and correlative hospital obligations along the line of privileges (dispensed or withheld by hospital discretion), contingent rights (legitimate primary reinforcers mandated by the emerging constitutional right to treatment), rights (available absolutely and noncontingently), and correlative hospital obligations along the line of privileges (dispensed or withheld by hospital discretion), contingent rights (legitimate primary reinforcers mandated by the emerging constitutional right to treatment), rights (available absolutely and noncontingently), and correlative hospital obligations along the line of privileges (dispensed or withheld by hospital discretion), contingent rights (legitimate primary reinforcers mandated by the emerging constitutional right to treatment), rights (available absolutely and noncontingent basis). See CAL. WELP. & INSTS. § 5325(e), and the statutory proposal of the Center for Study of Responsive Law. The legislative developments occasionally cover ground that such rights were beyond dispute or beyond denial in practice, as food and bedsMust be attributed to an assumption on behalf of the draftsmen that such rights were beyond dispute or beyond denial in practice.
quarters. For instance, Ennis's initially attractive and easy-to-apply rule of thumb—that types of patient labor performed at public but not at private hospitals should be presumed cost-saving rather than therapeutic—simply cannot withstand close scrutiny. Ennis's formula is undermined by the clinical and socio-economic differences between private and public hospital patients. Private hospital patients are typically skilled, of adequate means, and in the hospital for a short stay. Chronic psychotics at state institutions are almost invariably people who have been hospitalized and unemployed for long periods of time; they are overwhelmingly poor, unskilled, of advanced age, and likely to suffer considerable stigmatization upon release from the hospital.

Given this characterization of chronic mental patients, combined of course with apathy, dependency, and institutionalization, ambitious employment opportunities for released chronics are virtually out of the question. Indeed, when viewed from that perspective, together with the fact that work of almost any kind is probably superior to idleness in offsetting apathy, a wide range of institutional work activities have both therapeutic value and realistically approximate future employment goals. For example, Ayllon and Azrin noted about their patients at Alma State Hospital:

"Almost all of the patients in the programmed environment were from rural or low-class communities. They were all females. Most were housewives prior to admission and presumably would continue to be so after discharge. Their advanced age and their limited formal education indicated that if they were to be employed, they could hold only non-skilled positions. The target behaviors for these individuals seemed, therefore, to be the various performances involved in housekeeping and in unskilled employment. Further evidence that the motivation behind establishing such target behaviors is indeed therapeutic rather than simply cost-saving can be gleaned from several facts and from examples where cost-saving was not in issue. One Veterans Administration program for discharged chronics, for instance, provides patients with token-earning formal classes in shopping, washing, ironing and mending clothing, and related tasks. Moreover, in one of the few reported instances where released chronics managed to adjust successfully to a form of community life and to remain employed—George Fairweather's project where released patients lived and worked together in a semiautonomous community lodge—the nature of the employment was perfectly consistent with training provided by standard institutional tasks.

When the group of patients in Fairweather's project was about to leave the hospital for the community, for example, it originally planned on opening a restaurant, the bulk of positions to consist of "cook, assistant cook, dishwasher, busboys, waiters and cashier." Eventually, however, the men settled on janitorial work and gardening as their source of income, but even those jobs were performed inadequately until the men received specific training for the work. And in a successful project conducted by one of Fairweather's associates and patterned after that model, but involving both sexes of chronic patients, community employment followed a strikingly similar course: "Men worked at golf courses and other such places in teams doing gardening, land
scraping, and groundkeeping work. The women worked in groups at several nursing homes, as well as in motels and restaurants in the local area.113

From these examples, it should be apparent that many forms of institutional labor, even though concededly cost-saving, prevent apathy and prepare patients for life, however marginal,100 on the outside. If the performance of therapeutic institutional labor by patients is to be encouraged, however, certain safeguards should perhaps be required to insure that no patient becomes indispensable to his supervisor, a possibility which might result in the patient's continuation on the job becoming more important to the staff than his welfare, his treatment, or even his discharge. Administrative precautions taken in the Anna State Hospital program may prove instructive as legal guidelines: Ayllon and Azrin insisted upon periodic job rotation103 and, moreover, established a firm rule that "no patient was ever allowed to obtain a position for which she alone was qualified."104 Instead, "a position was established only when several patients were known to be capable of filling that position."105

If, given certain safeguards, voluntary105 institutional labor by chronic patients is to be encouraged, what of Wyatt's minimum wage mandate? Such a mandate, besides violating any cost-saving benefits of patient performance, might cause serious complications. First, it will inevitably divert scarce legislative appropriations away from other hospital and therapeutic uses. Second, a minimum-wage mandate for chronic patients may well compound the difficulties already facing public hospital—and indeed the encouragement may be compounded by union and community pressure—to fill its institutional positions with permanent outsiders instead of with patients, perhaps leaving the patients to pursue less therapeutic activities.106 In other words, a minimum-wage requirement may possibly result in greater expenditures for less effective therapy.

Thus, although compensating all institutional tasks with the minimum wage appears to be an attractive goal, it is clear that several major problems might be created by that requirement.107 Clearly, too, that various safeguards short
of the minimum wage can be invoked to prevent patient penance, and that voluntary patient labor can probably be encouraged either by monetary rewards somewhat below the minimum wage or by whatever other reinforcers satisfy the Wyatt test.

But in many respects the work and wage question is secondary to the question of legally acceptable and psychologically effective reinforcers. If adequate appropriations were available, if community residents did not threaten to displace patients in the institutional labor force, and if certain other kinks could be ironed out,104 few objections would be raised to specifying the minimum wage as a legally required reinforcer for patient-performed hospital work assignments. Indeed, if monetary rewards, whether of minimum wage proportions or not, were sufficient to induce patient work performance, that would be a small price to pay to strengthen target behaviors.

The major problem faced by the token economy is the current trend towards expansion of the category of protected inmate interests. The law, relying on concepts such as freedom and dignity, would require, for example, that all patients be accorded minimal levels of privacy and comfort. To the behavioral psychologist, who operates from the premise of determinism, philosophical notions of "freedom" and "dignity" are irrelevant.31 Rather, the psychologist views privacy or comfort as no more than useful tools which he can manipulate to make a psychotic's behavior more appropriate and socially adaptive—a goal which presumably all agree is in the best interest of both the patient and the society. In the psychologist's view it would surely be an ironic tragedy if, in the name of an illusory ideal such as freedom, the law were to deny the therapist the only effective tools he has to restore the chronic psychotic to his health and his place in the community.

Wing's thesis poses a philosophical dilemma. The behavior modifier suggests that chronic psychotics respond initially to only the most primitive reinforcers, and, therefore, only their contingent availability can motivate development of socially adaptive behavior.110 It follows, the behaviorists claim, that if the basics are made freely available as rights rather than as reinforcers, chronic psychotics may be destined to spend their lives functioning poorly in an institutional setting, whereas if those basic rights are converted into contingent reinforcers, there may be a real prospect of clinical improvement and discharge.112 If the empirical evidence supported the claim that token economies relying on primitive reinforcers worked very well with chronic patients—that, for example, virtually all patients improved dramatically and were able to earn the reinforcers required for a decent existence or if the evidence demonstrated that no less drastic means could accomplish similar results—a re-evaluation of the emerging law might very well be in order. But a review of the pertinent literature suggests the behavior modification proponents may have difficulty sustaining a burden of proof with respect to those matters.

First of all, while most token economy outcome studies report favorable results,114 the successes are far from overwhelming. Even in a project as dramatic as the Anna State Hospital study, eight of the 44 subject patients were basically unresponsive to the program,116 and success for the remaining patients.

104 Such as the impact of a minimum wage requirement on the economic incentive system of the hospital. See discussion in note 100 supra.
106 D. G. Bandura, Token Economy 259.
107 At first blush, the behaviorist position seems to clash with the data provided by J. K. Wing, who found that the clinical states of schizophrenic patients at three different hospitals correlated closely—and positively—with the respective hospital policies on patient rights and liberty. Wing, Evaluating Community Care for Schizophrenic Patients in the United Kingdom, in Community Psychiatry 108, 147-57 (Anchor ed. L. Roberts, S. Hallock & M. Leeb, eds. 1980). Wing's analysis may possibly be reconciled with the behaviorist contention. First, it is not entirely clear from Wing's study that patients who were provided a random home and if they were not applying a causal connection between patient rights and clinical states could not conclusively be inferred. And even if the connection could well be limited to instances where continuum management systems are absent. In other words, it may be that it is the token economy's marginality to provide patients with certain privileges absolutely than it is to deny them those privileges absolutely, but that it is better still to provide the privileges on a contingent basis.
108 Supra, note 9.
was measured solely by their work output. When judged by release data rather than by measures of work output, decreased apathy, or improved clinical state, results of token economy systems with chronic psychotics have been encouraging. Even in the Attway and Krasner project at the Palo Alto Veterans Administration Hospital, which reported a doubling of the discharge rate, 11 of the 24 released patients returned to the hospital within 9 months, a more rapid relapse than is normally found in studies of chronic patients.

We must also consider whether the results achieved by token economies—whatever they may be—could be matched or surpassed by less drastic means. Information is wanting, perhaps in part because behavior modifiers have not employed reinforcers other than the basics in standard use. It may be, for example, that creative observation of patient behavior preferences would reveal frequent behavior patterns, other than basic behaviors, which could be utilized as reinforcers. Also, although it is an impure technique according to orthodox behaviorism, another practical approach is simply to ask the patients what they would like to possess or to do.

By exploring creatively for reinforcers, it is likely that therapists could construct a list of idiosyncratic objects and activities—mail order catalogue items, soft-boiled rather than standard hard-boiled eggs, feeding kittens—and actual clinical examples—that could be made available contingently in order to strengthen appropriate target responses. Moreover, to the extent that effective reinforcers are in fact idiosyncratic, it follows almost by definition that their contingent availability could not conflict with the legally emerging absolute general rights of patients.

A system of positive behavior modification based heavily on idiosyncratic reinforcers might be clinically as well as legally superior. Psychologists employing such systems have been able to devise individual treatment plans assuring each patient independent diagnostic and therapeutic attention.

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121 Even the drastic deprivations at Patton State did not produce spectacular results. Schaefer, supra note 44, at 32. Schaefer did, however, claim some spectacular results in an individualized positive reinforcement program, where a behavior modification plan is tailored to each patient's particular problems. Id. at 38-39. Individualization will be discussed further in text infra.


123 Griep & Magaro, supra note 114.


125 Results based on follow-up studies disclose that approximately 70 percent of chronic patients who are discharged from mental hospitals return within 18 months regardless of the type of treatment received during the period of hospitalization. BANBURY, supra note 4, at 269.

In fact, token economy programs differ considerably among themselves with regard to the contingent availability of reinforcers. For instance, food and beds were subject to purchase at Patton State Hospital but were noncontingently available at Ann's Bay Hospital. Further, patients in certain programs are able to earn tokens for engaging in activities which would cost tokens in other programs. See discussion in note 93, supra. Unfortunately, however, because reports of token economy programs are often inadequate in their description of reinforcers, and because they often mix up criteria, inference of comparative efficacy is difficult to draw, leaving our knowledge rather incomplete with respect to the therapeutic necessity or reserting to the more drastic reinforcers.

126 The technique is "impure" because, unlike the Premack principle, it relies on verbal expressions of intention to ascertain preferred behavior, and the match is not always a perfect one. Ayllon and Azrin resorted to the technique to a limited extent. TOKEN ECONOMY 67-72. To help ensure that a patient will refrain from requesting items that he does not in fact deeply desire, a down payment of a specified number of tokens can be required at the time of the request. Id. at 71-72.

127 TOKEN ECONOMY, supra note 10, at 69.

128 Id. at 68.

129 Attowe & Krasner, supra note 110, at 33.

130 E.g., Schaefer, supra note 44, at 33-36 (Patton State Hospital individualized behavior modification program far more spectacular than its general token economy program); Spiegler, supra note 94.
But individualized treatment plans, required by Wyatt and perhaps part of the emerging right to treatment, are not incompatible with the operation of ward-wide or hospital-wide general treatment systems designed to overcome general patient problems such as indecisiveness, dependency, or apathy. In fact, the most fruitful combination might be to combine individualized treatment programs with an efficient, easy-to-administer general therapeutic system. If, however, the criteria for a successful system is efficacy with the least drastic deprivations possible, it appears that token economies for chronic psychotics may well finish no better than second best.

Strategically, therefore, although it may not be determinative, the work of George Fairweather is highly relevant here. Though he speaks the language of social psychology and of small group theory rather than the language of behaviorism and learning theory, Fairweather relies in part on principles of behavior modification, and his work is discussed prominently in texts on that subject. But his study was bottomed on the belief, to survive outside, must acquire problem-solving and decision-making skills, and on the knowledge that small cohesive groups can effectively control the behavior of their members.

Patients were divided into small task groups with monetary and pass privileges awarded according to the level of responsibility each individual attained. The money privileges for the most part came from personal funds of the patients who participated in the program. The amount of money and number of passes were set up in advance for each of four progressive levels of achievement. The task group as a unit became responsible for the progress of its individual members through the four designated steps. Step one involved personal care, punctuality on assignments, and cooperation in the orientation of new members. Step two, required, in addition, acceptable work on the job assignments. Requirements in step three were individualized, with patients responsible for recommending the level of their own rewards. In step four the patient had responsibility for his departure plans, and had unlimited rights to withdrawal of money and passes. In step one the patient received ten dollars and a one day pass each week; in step two he received fifteen dollars per week and an overnight pass every other week.

The task group was responsible for dealing with patient problems and for recommending to the staff the level of pass and monetary privileges deserved by each patient member. Patient task group recommendations were considered weekly by a staff committee. To establish cohesive and well-functioning groups, Fairweather would at times advance or demote the group as a unit. Fairweather found that over time pride in group achievement appeared to become a more important motivator than money or passes. Leaders emerged from among the members through the four designated steps, Step one involved personal care, punctuality on assignments, and cooperation in the orientation of new members. Step two required, in addition, acceptable work on the job assignments. Requirements in step three were individualized, with patients responsible for recommending the level of their own rewards. In step four the patient had responsibility for his departure plans, and had unlimited rights to withdrawal of money and passes. In step one the patient received ten dollars and a one day pass each week; in step two he received fifteen dollars per week and an overnight pass every other week.

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in the chronic psychotic groups as well as in other clinical categories, and the program was a therapeutic success: As compared with a control group subjected to traditional hospital therapy (not a token economy), the small group patients showed significantly less pathological behavior, greater social interaction, and greater participation during meetings. Moreover, the small group program substantially reduced hospitalization. When combined with an after-care program involving a voluntary living arrangement in a semiautonomous (and eventually autonomous) community lodge, the Fairweather system achieved the long-awaited goal of adequate employment and community adjustment for discharged chronic psychotics. Fairweather thus produced impressive results with chronic psychotics in an environment clearly "less drastic" in deprivation than any of the traditional token economies. Obviously, Fairweather's patients were provided with food and beds. Further, the ward was open and patients had complete access to the hospital grounds. The ward was equipped with a television set, table games, magazines and the like, and freely available activities included library reading, movies, dancing and bowling.

Most of these privileges were available only by purchase in the token economy programs. Yet a patient at the bottom of Fairweather's hierarchy was provided, without a work assignment, not only with these privileges, but also with ten dollars and one day pass each week. Indeed, life at the lowest level of Fairweather's ladder compares favorably with the conditions at advanced levels in some token systems.

Fairweather's approach, then, seems preferable to token economies on several counts. First and foremost, his small group system has yielded impressive results which are unmatched by token systems. Second, while token systems deprived patients of basic comforts in their reliance on primitive reinforcers, Fairweather's system provided only money and passes. Third, Fairweather's approach is thoroughly oriented toward release and community adjustment. It recognizes that once cohesive groups have been formed in the hospital, "an immediate move to the community is essential." Finally, Fairweather's behavior

139 Id. at 191, 283. The patients in Fairweather's study constituted a heterogeneous population and varied considerably in degree of chronicity, but the various task groups satisfied their share of chronic psychotics. Id. at 85. And Fairweather's follow-up community adjustment project involved almost exclusively chronic patients. COMMUNITY LIFE, supra note 96, at 32, 238. It seems, then, that a comment made by Davison that Fairweather's study did not involve chronic psychotics, is simply erroneous. Davison, supra note 130, at 237. As an aside, it should be noted that Fairweather's study of heterogeneous groups yielded fascinating findings regarding the ideal clinical mixture required in small groups to produce first-rate decision-making. SOCIAL PSYCHOLOGY, supra note 131, at 103, 280.

140 SOCIAL PSYCHOLOGY, supra note 131, at 61.

141 Id. at 70, 283.

142 Id. at 80.

143 Id. at 108.

144 COMMUNITY LIFE. When unaccompanied by a cohesive group after-care arrangement, however, chronic patients who had participated in the small group program prior to discharge had a high relapse rate; as do chronic patients generally. SOCIAL PSYCHOLOGY 109.

145 SOCIAL PSYCHOLOGY 32.

146 Id. at 46.

147 Id. at 155. It is not clear whether Fairweather's patients were provided with such items as screens or personal lockers, but it is clear that those items were either available or unavailable noncontingently: that is, it is not the case, as was true at Anna State Hospital that they were available only to those able to purchase them. Because Fairweather did not employ those items as reinforcers, his therapeutic system would seemingly be unaffected by a requirement, such as enunciated in Wyatt, that all patients be given those items as a matter of absolute right.

148 B.B., Bruce, Tokens for Recovery, 66 AM. J. NURSING 1700, 1802 (1966) (discussing conditions for the "middle group" at Patton State Hospital); Lloyd & Abel Fortin, When Economy Psychiatric Ward: A Two Year Summary, 8 BEHAV. RES. & THERAPY 1, 5 (1970) (discussing conditions for "group B" at Patton State Hospital North); Narroll, Experimental Application of Reinforcement Principles in the Administration of Treatment of Hospitalized Alcoholics, 25 Q. J. OF STUDIES ON ALCOHOL 105, 108 (1964) (discussing groups 3 and 4 at Richmond State Hospital). See also text accompanying notes 52-54 supra.

Fairweather's contingent pass device may be a question in light of the requirement of Covington v. Harris, 419 F.2d 417 (D.C. Cir. 1969), that patients be provided with as much liberty as is clinically appropriate. But the fact that even lowest level patients are entitled in the Fairweather system to one day pass per week may alleviate Covington, especially if the contingent availability of passes above and beyond one per week are shown empirically to constitute powerful motivators. But whatever Covington problem may exist could, of course, be violated entirely if monetary rewards alone were found to be sufficient reinforcers, as future research might indeed show.

150 SOCIAL PSYCHOLOGY, supra note 131, at 9.
modification model emphasizes the development of confidence and decision-making ability rather than performance of assignments. For whatever it is worth, Fairweather's system may be ethically or at least emotionally more palatable than the manipulative techniques of the token economies.

CONCLUSION

Fairweather's small group model, with its rich results and rather minor derivations, poses a serious threat to token economies. If further studies continue to indicate that, except in extreme circumstances, token economies for chronic psychotics resort to more drastic deprivations than other therapies without producing better results, it is likely that token systems will soon find themselves subject to both legal and behavioral extinction.

Indeed, if the law's general direction in the patient rights area proceeds uninterupted, token economies may well become legally unavailable even if they are therapeutically superior to other approaches. That is because the developing law is creating new patient rights unaware that these rights will under-

One possible exception is the most extremely regressed cases who fall under all other techniques. Even under Fairweather's system, for example, it is probably true, as he admits (and Searce Hospital), but that therapeutically superior to other techniques, for chronic psychotics resort to more drastic deprivations than other therapies without producing better results. It is likely that token systems will soon find themselves subject to both legal and behavioral extinction.

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mine a basic behavior modification technique. On the other hand, the behavior modifiers seem busy constructing token economies unaware that legal developments may soon call for their demolition.

Forcing these disparate disciplines to take note of each other—obviously the principle object of this Article—should be helpful to both of them. Behavior modification proponents, convinced of the therapeutic indispensability of token economies for chronic patients, may have reservations about the Fairweather model. But unless systematic comparative studies of alternative therapies are performed soon, the law will be unable to incorporate the results in developing a sensible package of patient rights, and expected legal developments may ultimately preclude such studies.

The Torture Cure

Jessica Mitford, Harpers Magazine, August 1973, pp. 16-30.—Winning criminal hearts and minds with drugs, scalpels, and sensory deprivation

Recognition of failure dawns slowly in a bureaucracy but dawned it has in California prison treatment circles. Prison psychiatrists who are willing to level with reporters admit that they now spend 50 percent of their time on paperwork, writing up reports for the Adult Authority based on perfunctory annual interviews with prisoners, that "treatment" most often takes the form of heavy tranquilization of inmates labeled psychotic as well as those diagnosed as troublemakers. Group therapy, once hailed as an exciting new technique for transforming the "deviant personality," is withering on the vine. Nor have the treatment programs produced the anticipated docility in the convict population; work strikes, hunger strikes, and other forms of protest are now endemic throughout the California prisons.

Some disconcerting conclusions about the efficacy of treatment are set forth in a report to the State Assembly titled "The California Prison, Parole, and Probation System." It cites an exhaustive study conducted for the Department of Corrections in which the researchers observed gloomily, "Thousands of inmates and hundreds of staff members were participating in this program at a substantial cost to the Department of Corrections in time, effort, and money. Contrary to the expectations of the treatment theory, there were no significant differences in outcome for those in the various treatment programs or between the treatment groups and the control group." They further reported that group counselling did not lessen adherence to the inmate code, nor did it reduce the frequency of discipline problems.

James O. Robison, author of the report and longtime researcher for the Department of Corrections, traced the course of disillusionment, "The high mystique of treatment peaked at the end of the Fifties," he told me. "The idea took hold in Corrections that at last, through sophisticated techniques of psychotherapy, we have it in our power to transform the deviant and to predict with accuracy his future behavior. But in the early Sixties the high priests of Corrections began a sifting of the entrails. After that, disenchantment and embarrassment set in—the reason was the evident empirical failure of the treatment programs as demonstrated by the recidivism rate remaining constant over the years."

"The rationale for failure was always, 'We haven't carried treatment far enough, there isn't enough of it, it isn't professional enough'—in other words, we need more and better of same, in spite of the fact we've seen it doesn't work. Even this reasoning began to break down in the middle Sixties, when there was more attention paid to the fact nothing was happening and more talk of 'Why?'"

"What you are likely to see now is the end of the liberal treatment era—the notion that you can make convicts into converts of the dominant culture 'religion,' the missionary fervor—that's being replaced with 'behavior modification' experiments. The latest reasoning is that it's costly and inappropriate to go the psychotherapy route with these people, to pay high-priced psychiatrists to..."
talk them into recognizing the truth of our 'religion'; instead, we'll focus on their deviant behavior and force them to shape up. Of course, this flies in the face of the earlier rhetoric. The Behaviorists say they are bad, not mad, and we can stop them from being bad by utilizing new techniques. This fits in with the law-and-order, no-nonsense conservative viewpoint: henceforth the slogan will be, 'They must be made to behave.'

This new trend in Corrections must be highly inspiring for the behavioral scientists, who have long been eyeing the prisons as convenient reservoirs of human material on which to try out new theories. The shape of things to come was forecast a decade ago at a seminar of prison wardens and psychologists chaired by James V. Bennett, then director of the U.S. Bureau of Prisons. As described in *Correctional Psychiatry & Journal of Social Change*, Second Quarter, 1962, the seminar provided 'provocative, fruitful interaction between social scientists and correctional administrators.'

Addressing himself to the topic "Man Against Man: Brainwashing," Dr. Edgar H. Schein, associate professor of psychology at MIT, told the assembled wardens: "My basic argument is this: In order to produce marked change of behavior and/or attitude, it is necessary to weaken, undermine, or remove the supports to the old patterns of behavior and the old attitudes;" this can be done "either by removing the individual physically and preventing any communication with those whom he cares about, or by proving to him that those whom he respects are not worthy of it and, indeed, should be actively mistrusted."

Dr. Schein, who said he got most of his ideas from studying brainwashing techniques used by North Korean and Chinese Communists on GI prisoners of war, cautioned his audience not to be put off by this fact: "These same techniques in the service of different goals may be quite acceptable to us, . . . I would like to have you think of brainwashing not in terms of politics, ethics, and morals, but in terms of the deliberate changing of human behavior and attitudes by a group of men who have relatively complete control over the environment in which the captive population lives."

Some of the techniques which could usefully be applied in the U.S. prisons: "Social disorganization and the creation of mutual mistrust" achieved by "spying on the men and reporting back private material;" "tricking men into written statements" that are then shown to others, the objective being "to convince most men they could trust no one," "undermining ties to home by the systematic withholding of mail." The key factor is change of attitude: "Supports for old attitudes have to be undermined and destroyed if change is to take place . . . Do we not feel it to be legitimate to destroy the emotional ties of one criminal to another, or of a criminal to a sick community?" How to bring about the desired change was explained by Dr. Schein: "If one wants to produce behavior inconsistent with the person's standards of conduct, first disorganize the group which supports those standards, then undermine his other emotional supports, then put him into a new and ambiguous situation for which the standards are unclear, and then put pressure on him. I leave it to you to judge whether there is any similarity between these events and those which occur in prisons when we teach prisoners 'to serve their own time' by moving them around and punishing clandestine group activity not sanctioned by the prison authorities."

The discussion, says the report, ranged from "specific, practical management issues such as 'How shall we manage the Muslims?' 'Whom should we isolate?'" to more basic questions, such as "the use and effectiveness of brainwashing and other means of persuasion." Dr. Bennett recalled that "during the war we struggled with the conscientious objectors—nonviolent coerclionists—and believe me, that was really a problem . . . we were always trying to find some way in which we could change or manipulate their environment."

Much attention was focused on what to do about the Black Muslims: "not so much whether you take action against the Muslims as a group," as one speaker put it, "but how can you counteract the effects of the kinds of techniques they use to recruit members and cause general mischief in the prison system?" To which Dr. Lowry responded, "We found that many of these Negro Muslims were highly intelligent . . . here again, we have to apply the techniques which we heard about in terms of appreciating what the goal of the Muslims is or of any other group, and then doing some analytic study of the methods that they are using so that we can try to dissipate the forces that
are going in the direction that we regard as destructive. "On ways of dealing with the unruly a panelist offered this: "To some extent where we formerly had isolation as a controlling technique, we now have drugs, so that drugs in a sense become a new kind of restraint. The restraint, therefore, is biochemical, but it is restraint nevertheless."

Summarizing the discussion, Dr. Bennett pointed out that the federal prison system, with some 24,000 men in it, presents "a tremendous opportunity to carry on some of the experimenting to which the various panelists have alluded," He added, "What I am hoping is that the audience here will believe that we here in Washington are anxious to have you undertake some of these things: do things perhaps on your own—undertake a little experiment of what you can do with the Muslims, what you can do with some of the sociopath individuals."

That Dr. Bennett's counsel was taken to heart by his subordinates in the federal prison system can be inferred from a report addressed to the United Nations Economic and Social Council, prepared and smuggled out of Marion Federal Penitentiary in July 1972, by the Federal Prisoners' Coalition, a group of convicts housed in the segregation unit for refusing to participate in the behavioral research programs. "In the latter part of 1968 some changes in the U.S. Department of Justice enabled the U.S. Bureau of Prisons to make a quiet beginning at implementing an experimental program at Marion Federal Prison." The program is conceived at first hand how effective a weapon brainwashing might be for the "U.S. Department's Future." The report describes how Dr. Martin Groder, prison psychiatrist, applies the proposals outlined in Dr. Schein's paper to "agitators," suspected militants, write-writers, and other troublemakers. The first step, according to the report, is to sever the inmate's ties with his family by transferring him to some remote prison where they will be unable to visit him. There he is put in isolation, deprived of mail and other privileges, until he agrees to participate in Dr. Groder's Transactional Analysis program. If he succumbs, he will be moved to new living quarters where he will be surrounded by members of Dr. Groder's "prisoner thought-reform team," and subjected to intense group pressure. "His emotional, behavioral, and psychic characteristics are studied by the staff and demiprofessionals to detect vulnerable points of entry to stage attack-sessions around. During these sessions, on a progressively intensified basis, he is shouted at, his fears played on, his sensitivities ridiculed, and concentrated efforts made to make him feel guilty for real or imagined characteristics or conduct. ... Every effort is made to heighten his suggestibility and weaken his character structure so that his emotional responses and thought-flow will be brought under group and staff control as totally as possible."

"... It is also driven in to him that society, in the guise of its authorities, is looking out for his best interests and will help if he will only permit it to do so. Help him be 'reborn' as a highly probable 'winner in the game of life,' is the way this crosses across in the group's jargon." Once reborn as a winner, he will be moved into a plush living area equipped with stereo, tape recorders, typewriters, books. He is now ready to indoctrinate newcomers into the mysteries of the group "and like a good attack dog, he is graded and evaluated on his demonstrated capacity to go for the vulnerable points of any victim put before him." The entire program is made self-perpetuating and economically feasible by the participants doing the work themselves, says the report: "They are taught to police not only themselves but others, to inform on one another in acceptable fashion—as bringing out misconduct of another in a truth-session is not considered informning even if a staff member is present."

Evidently these techniques are finding increasing favor with the federal prison administration. Scheduled to open early in 1974 near Butner, North Carolina, is a new federal institution, the Behavioral Research Center, built at a cost of $18.5 million, which, says a handout from the Bureau of Prisons, will be "a unique facility in the federal correctional system." Some of the unique features are spelled out in a confidential operations memorandum from the bureau to staff. Dated October 25, 1972 on the subject of Project START, acronym for Special Treatment and Rehabilitative Training, already in operation in Springfield Federal Penitentiary. The goal, according to the memorandum, is "to develop behavioral attitudinal changes in offenders who have not adjusted satisfactorily to institutional settings" and to provide "care, custody, and correction of the long-term adult offender in a setting separated from his home.
institution. "Selection criteria" include: "will have shown repeated inability to adjust to regular institutional programs"; "will be transferred from the sending institution's segregation unit"; "generally, will have a minimum of two years remaining on his sentences"; "in terms of personality characteristics shall be aggressive, manipulative, resistant to authority, etc."

Dr. Martin Groder, who will direct the Butner operation, told Tom Wicker of the New York Times that he "believes in the possibility of rehabilitating prisoners" because he has done it, at Marion. He does not favor any large-scale return of incarcerated men to community programs; on the contrary, he prefers to keep them in his custody: "If we can get a topnotch rehabilitation program within the institution, a prisoner will be better off in it than wandering around the streets." Wicker reports that Dr. Groder is "not precise" about the rehabilitative methods he intends to apply, and that he is "cheerfully aware that the new federal center he will head is 'suspect in some circles—not least among federal prisoners, who are not anxious to be 'guinea-pigs' in behavior research. He is nevertheless pressing ahead . . ."

A further elaboration on the brainwashing theme is furnished by James V. McConnell, professor of psychology at the University of Michigan, in an article in the May 1970 issue of Psychology Today titled "Criminals Can Be Brainwashed—Now." It reads like science fiction, the fantasy of a deranged scientist. Yet much of what Dr. McConnell proposes as appropriate therapy for tomorrow's lawbreaker is already tried here or in the planning stages in many of the better financed prison systems.

Dr. McConnell, who spent many years successfully training flatworms to go in and out of mazes at his bidding by administering a series of painful electric shocks, now proposes to apply similar techniques to convicts: "I believe the day has come when we can combine sensory deprivation with drugs, hypnosis, and astute manipulation of reward and punishment to gain almost absolute control over an individual's behavior . . . We'd assume that a felony was clear evidence that the criminal had somehow acquired full-blown social neurosis and needed to be cured, not punished . . . We'd probably have to restructure his entire personality."

The exciting potential of sensory deprivation as a behavior modifier was revealed through an experiment in which students were paid $20 a day to live in tiny, solitary cubicles with nothing to do. The experiment was supposed to last at least six weeks, but none of the students could take it for more than a few days: "Many experienced vivid hallucinations—one student in particular insisted that a tiny spaceship had got into the chamber and was buzzing around shooting pellets at him." While they were in this condition, the experimenter fed the students propaganda messages: "No matter how poorly it was presented or how illogical it sounded, time propaganda had amarked effect on the students' attitudes—an effect that lasted for at least a year after they came out of the deprivation chambers."

Noting that "the legal and moral issues raised by such procedures are frighteningly complex," Dr. McConnell nevertheless brusquely dispenses of them: "I don't believe the Constitution of the United States gives you the right to commit a crime if you want to; therefore, the Constitution does not guarantee you the right to maintain inviolable the personality forced on you in the first place—if and when the personality manifests strongly antisocial behavior."

The new behavioral control techniques, says Dr. McConnell, "make even the hydrogen bomb look like a child's toy, and, of course, they can be used for good or evil." But it will avail us nothing to "hide our collective heads in the sand and pretend that it can't happen here. Today's behavioral psychologists are the architects and engineers of the Brave New World."

For some convicts in California, those perceived as "dangerous," "revolutionary," or "uncooperative" by the authorities, it has happened here, and Dr. McConnell's Brave New World is their reality. Signposts in this bizarre terrain may need translation for the outsider:

Sensory Deprivation.—Confinement (often for months or years) in the Adjustment Center, a prison-within-prison.

Stress Assessment.—The prisoner lives in an open dormitory where it is expected he will suffer maximum irritation from the lack of privacy. He is assigned to the worst and most menial jobs. In compulsory group therapy sessions staff members deliberately bait the men and try to provoke conflicts
among them, The idea is to see how much of this a person can stand without losing his temper.

Chemotherapy.—The use of drugs (some still in the experimental stage) as "behavior modifiers" including antitestosterone hormones, which have the effect of chemically castrating the subject, and Prolixin, a form of tranquilizer with unpleasant and often dangerous side effects.

Aversion Therapy.—The use of medical procedures that cause pain and fear to bring about the desired "behavior modification."

Neurosurgery.—Cutting or burning out those portions of the brain believed to cause "aggressive behavior."

The "Behavior Modification" programs are for the most part carried out in secret. They are not part of the guided tour for journalists and visitors, nor are outside physicians permitted to witness them. Occasionally word of these procedures leaks out, as in the autumn of 1970, when Medical World News ran an article titled "Searing the Devil Out" about the use of the drug Anectine in "aversion therapy" in the California prisons.

Anectine, a derivative of the South American arrow-tip poison curare, is used medically in small doses as a muscle relaxant, but behavioral researchers discovered that when administered to unruly prisoners in massive amounts—from twenty to forty milligrams—it causes them to lose all control of voluntary muscles.

An unpublished account of the Anectine therapy program at Vacaville, California, by two of the staff researchers there, Arthur L. Mattocks, supervisor of the research unit, and Charles Jew, social research analyst, states that "the conceptual scheme was to develop a strong association between any violent or acting-out behavior and the drug Anectine and its frightful consequences," among which were "cessation of respiration for a period of approximately two minutes' duration." Of those selected to endure these consequences, "nearly all could be characterized as angry young men," say the authors. Some seem to have been made a good deal angrier by the experience, for the report notes that of sixty-four prisoners in the program "nine persons not only did not decrease but actually exhibited an increase in their overall number of disciplinary infractions."

According to Dr. Arthur Nugent, chief psychiatrist at Vacaville and an enthusiastic for the drug, it induces "sensations of suffocation and drowning." The subject experiences feelings of deep horror and terror, "as though he were on the brink of death." While he is in this condition a therapist scolds him for his misdeeds and tells him to shape up or expect more of the same. Candidates for Anectine treatment were selected for a range of offenses: "frequent fights, verbal threatening, deviant sexual behavior, stealing, unresponsiveness to the group therapy programs." Dr. Nugent told the San Francisco Chronicle, "Even the toughest inmates have come to fear and hate the drug. I don't blame them, I wouldn't have one treatment myself for the world." Declaring he was anxious to continue the experiment, he added, "I'm at a loss as to why everybody's upset over this."

More upset was to follow a year later, when the press got wind of a letter from Director Raymond Procunier to the California Council on Criminal Justice requesting funding estimated at $48,000 for "neurosurgical treatment of violent inmates." The letter read, in part: "The problem of treating the aggressive, destructive inmate has long been a problem in all correctional systems. During recent years this problem has become particularly acute in the California Department of Corrections institutions... This letter of intent is to alert you to the development of a proposal to seek funding for a program involving a complex neurosurgical evaluation and treatment program for the violent inmate... surgical and diagnostic procedures would be performed to locate centers in the brain which may have been previously damaged and which could serve as the focus for episodes of violent behavior. If these areas were located and verified that they were indeed the source of aggressive behavior, neurosurgery would be performed..." Confronted by reporters with this letter, Laurence Bennett, head of the Department of Corrections Research Division, explained: "It is not a proposal, it's just an idea-concept." He added wistfully, "It's quite likely that we will not proceed with this, but if we had unlimited funds we would explore every opportunity to help anyone who wants such assistance."
Although the plan for psyellosurgery was halted—at least temporarily—by the newspaper uproar that ensued, the authorities have other methods at hand for controlling the unruly, principal among which is forced drugging of prisoners. In widespread use throughout the nation's prisons is the drug Prolixin, a powerful tranquilizer derived from phenothiazine, which, if given in large doses, produces dangerous and often irreversible side effects. A petition addressed to the California Senate Committee on Penal Institutions by La Raza Unida, a Chicano organization of prisoners confined in the California Men's Colony, describes these: "The simple fact that a number of prisoners are walking the yard in this institution like somnambulists, robots, and vegetables as a result of this drug should be reason enough to make people apprehensive as to the effect it is having. That no prisoner feels safe because he never knows when he will become a candidate for said drug is another factor in producing tension in this institution."

According to its manufacturer, E. R. Squibb, Prolixin is "a highly potent behavior modifier with a markedly extended duration of effect." Possible adverse side effects listed by Squibb include: the induction of a "catatonic-like state," nausea, loss of appetite, headache, constipation, blurred vision, glaucoma, bladder paralysis, impotency, liver damage, hypotension severe enough to cause fatal cardiac arrest, and cerebral edema. Furthermore, Squibb cautions that "a persistent pseudo-parkinsonian [palsy-like] syndrome may develop... characterized by rhythmic, stereotyped dyskinetic involuntary movements... resembling the facial grimaces of encephalitis... The symptoms persist after drug withdrawal, and in some patients appear to be irreversible."

The theme of prison as a happy hunting ground for the researcher is very big in current penological literature. In I Chose Prison, James V. Bennett poses the question, "What will the prisons of 2000 A.D. be like?" And answers it: "In my judgment the prison system will increasingly be valued, and used, as a laboratory and workshop of social change." Dr. Karl Menninger echoes this thought in The Crime of Punishment: "About all this [causes of crime], we need more information, more research, more experimental data. That research is the basis for scientific progress, no one any more disputes. Even our present prisons, bad as many are, could be extensively used as laboratories for the study of many unsolved problems."

Taking these injunctions to heart, researchers are descending in droves upon the prisons with their prediction tables, expectancy scales, data analysis charts. With all the new money available under federal crime control programs, and the ingenuity of grant-happy researchers, the scope of investigations seems limitless. In California some $600,000 of the Department of Corrections budget is earmarked for research, but this is just the tip of the iceberg, for most of the work is done under lavish grants from universities, foundations, and government agencies.

Something of the quality of the research, and the bitter irony of the situation in which the convict-research subject finds himself, can be inferred from the stream of monographs, research reviews, and reports that flow out of the prisons. His captors having arranged life for the prisoner so that he becomes enraged, perhaps goes mad, and (no matter what his original sexual preferences) turns homosexual, they invite researchers to put him under their microscopes and study the result. A forty-eight page monograph titled "Homosexuality in Prisons," published in February 1972 by the Law Enforcement Assistance Administration, reports, "In view of methodological difficulties, the following estimates of male homosexuality should be viewed with caution," and proceeds to give them, complete with footnotes referring the luckless reader to yet other publications on this subject. Estimates of the incidence of homosexuality given by experts vary, says the author, from 7 to 90 percent. He concludes, "There is above all a compelling need for a wide variety of comparative data," and proposes to fill the need by conducting "longitudinal or retrospective studies."

Among the offerings of the California Department of Corrections Research Review for 1971 is "The Self-Esteem Project," its aim "to obtain some picture of the effect of incarceration upon the perception of self-worth," in which the Modified Coopersmith Self-Esteem Scale is found to be "a useful instrument for measurement." Having subjected the inmate's self-esteem to the pulverizer of prison, the department proceeds to measure and tabulate what is left.
If the prisoner happens to be Chicano, he will be eligible for a study entitled "The Consequences of Familial Separation for Chicano Families," its purpose "to study the consequences of separation from family members for Chicano inmates and also for their families in terms of social, psychological, and economic needs and stresses." Thus the precise quantity and quality of suffering, anxiety, and impoverishment of families caused by locking up Chicanos can be tidily computed and catalogued for the edification of social scientists. By now the prisoner may well be ready for the Buss Rating Scale of Hostility or the Multiple Affect Adjective Checklist, "a standardized and reliable rating instrument that can be scored for anxiety, depression, and, most importantly, hostility."

Omitted from the 1971 Research Review is one of the more ambitious experimental projects of that year: establishment of a Maximum Psychiatric Diagnostic Unit (MPDU) designed to hold eighty-four convicts (a number possibly chosen in subconscious tribute to George Orwell) selected as research subjects from the 700 inmates of the state's Adjustment Centers. The goal of MPDU, as defined in the department's grant application to the California Council on Criminal Justice, is "to provide highly specialized diagnostic service for Adjustment Center inmates who are violently acting-out and management problem cases within the California prison system ... and arriving at decisions as to the needed intervention and placement." The budget for this "service" would be approximately $500,000.

Who are the Adjustment Center inmates from whose ranks the eighty-four would be chosen? Robert E. Doran, who made a study of them under a grant from LEAA for the American Justice Institute, says they are "deviants within a society of deviants," or put another way, rebels who refuse to conform to prison life. They are younger and darker than the prison population as a whole. Sixty percent are under thirty compared with 59 percent of the total prison population, 60 to 70 percent are black or Chicano compared with a non-white overall prison population of 46 percent. The majority are there for "disrespect for authority," disobeying some disciplinary rule—refusing to work, shave, attend group therapy; a growing number are there because they are suspected of harboring subversive beliefs.

In 1972 ten inmates of Folsom Prison filed a federal suit (unsuccessful) charging they had been kept in long-term solitary confinement because of their political views, and alleging that the practice is routinely used against prisoners who are outspoken about prison conditions or voice "militant" political views. Department spokesmen strenuously deny that they use lock-up in the Adjustment Center as punishment for political dissidents and leaders of ethnic groups. Philip Guthrie, press agent for the Department, told the Sacramento Bee on March 10, 1972: "We're very careful not to lock a guy up just because of his political views." But in their closed departmental meetings it is a different story. As reported in the confidential minutes of the wardens and superintendents meetings, October 11-12, 1972, under the topic "Inmate Alliances," Director Raymond Procunier "asked the problem be kept in perspective, comparing it to the Muslim situation ten years ago. The director suggested the leaders of the various groups be removed from the general population of the institutions and locked up."

Much has been written about the California Adjustment Centers, for it was in the exercise yard of "O-Wing". Soledad Adjustment Center, that three unarmed black convicts were shot to death by a guard in early 1970, triggering a series of events that culminated in the death of George Jackson, the trial of the surviving Soledad Brothers, and the trial of Angela Davis, all acquitted by juries. From three sources one can infer something about conditions of life in the Adjustment Centers, and the roots of violence therein.

Departmental memoranda to staff in charge of "O-Wing" contain these directives:

Yard Exercise.—Two officers (one armed with a Gas Billy and one armed with Mace) will enter the tier to be released and, after subjecting each inmate to an unclothed body search, release him from his cell, by key, directing him to the yard.

All inmates housed in "O-Wing" first tier, when escorted from the security section for any reason, are to be given an unclothed body search while still in their cells. . . The inmate will be given a visual inspection of his body, to in-
Any inmate who self-mutilates or attempts to hang himself will be housed in the Hospital Annex cells only in the direction of the medical staff.

Robert E. Doran describes what he learned about the guards' view of assignmentss to the Adjustment Center. "Those staff who have 'really been there,' experienced the trouble, used the gas, the batons, the weapons, and the muscle, and did so effectively, receive the highest status and deference from other custodial staff. Staff battle ribbons and badges are won or lost within the A/C when trouble takes place. Actually the A/C, much like the general prison situation, has in terms of relative percentage of time, very little trouble. But it is the folklore, the beliefs and the history as passed from one generation of custodial personnel to the next that propugnates the idea that has grown up around the A/C which in effect says, 'This is the front line, here is where the battle is really won or lost for staff who wear the custodial uniform.'"

Testifying in San Francisco before a Congressional subcommittee, two lawyers related some exploits of these frontline heroes. Edwin T. Caldwell of San Francisco said, "I will testify for the record that I am a registered Republican from a conservative background. This is such a shocking thing for me I just can't believe it exists."

Caldwell told the committee his client in Soledad's "O-Wing" had been "viciously attacked" by guards on numerous occasions, and had suffered a fractured tooth, a broken jaw, and lacerations requiring six sutures. Fay Stender of Oakland handed the committee chairman a note signed by Lieutenant Flores, Adjustment Center guard, written in response to an inmate who was coughing blood and had asked for help. The note said: "Yell for help when the blood is an inch thick, all over the floor, and don't call before that."

Details of the highly specialized services to be rendered the eighty-four chosen from this milieu, and the nature of the needed intervention, were discussed at a "think session" called 1 November by Laurence Bennett, head of the Department of Corrections Research Division. Participants were some twenty-five representatives of the healing professions—medicine, psychology, psychiatry—many of them faculty members from nearby universities and medical schools.

The new unit, said Max May, program administrator, would be closely modeled after Patuxent Institution in Maryland, with forty-two-one-man cell-blocks, "single five-by-seven-foot cells with bars, only we call them barriers." Construction costs would be kept to a minimum since the prisoners were to build their own cages, the work, according to the grant application, consisting "primarily of pouring two concrete floors, erecting wire screen partitions, also a gun tower."

The objective, said Bennett, is "to develop a basic knowledge of the causes of aggressive, violent behavior. Our aim is to learn how to identify small groups, how to deal with them more adequately. We hope through psychological management to learn how to lessen their violence potential."

Discussion from the floor, and at the pleasant luncheon gathering in the faculty club dining room, centered on methods by which this might be accomplished: "We need to find the stimulus to which the subject responds. We also need to find out how he thinks overtly and to change how he thinks." "We need to dope up many of these men in order to calm them down to the point that they are accessible to treatment." "Those who can't be controlled by drugs are candidates for the implantation of subcortical electrodes (electrodes plunged deep into the brain)."

Dr. Keith Brody of Stanford University, who said he runs a "unit for mood disorders," stressed the importance of "intensive data collection" via spinal taps and other tests: "Those tests can lead to therapy decisions. We need to segregate out and dissect out these sub-groups." Other proposals for therapy were to burn out electrically those areas of the brain believed to be the "source of aggressive behavior"—one speaker said he reckoned about ten percent of the inmates might be candidates for this treatment; the administration of anti-ketosterone hormones, which have the effect of emasculating the subject; the use of pneumoencephalograms (injecting air into the brain cavities).
Asked whether the Anectine torture "therapy" would be resumed in the new unit, Bennett did not answer directly but declared with some exasperation, "If it could be shown empirically that hitting an inmate on the head with a hammer would cure him, I'd do it. You talk about his civil rights—civil rights for what? To continue to disrupt society?" Nor would he answer the further questions: "Does not the prison system itself, and particularly the Adjustment Center, generate violence?" and "Would the researchers be directing any part of their injury to violence by guards against prisoners?"

As for the compliant participation of the distinguished group of faculty members in this bizarre discussion, one possible explanation was suggested by the lone black psychiatrist present, Dr. We've-Never-Lippscomb, who had stormed out of the meeting halfway through, declaring: "I couldn't take any more of this crap." Later, he told me, "What you are seeing at that meeting were the grant hunters, hungry for money, willing to eat any shit that's put before them."

(Item VI.D.6)

**THE PACIFICATION OF THE BRAIN**

*Stephen L. Chorover, Psychology Today, May 1974, pp. 59-69*

To suppress violent people, surgeons now burn the brain's fragile centers. A neuroscientist, reviewing the scientific evidence, reports the operation's side-effects on monkeys: they lost their grip on reality, became deranged, and directed their sexual activity toward a wide variety of animate and inanimate objects. By treating antisocial behavior as an individual matter, he says, we ignore the larger pressures of society and enter the brain at the patient's peril.

Biologists and behavioral scientists stand today where nuclear physicists stood almost 30 years ago. In 1945, developments in nuclear physics led to the atomic bomb, and ushered in a new world of ethical and social problems. During the past few decades, developments in the behavioral sciences have spawned a wide-ranging psychotechnology, a varied arsenal of tools and techniques for predicting and modifying human behavior. Like thermonuclear technology, psychotechnology is complex and controversial. Its development and deployment raise problems that we can no longer afford to ignore.

Psychosurgery is a particularly controversial form of psychotechnology. Also known as "psychiatric neurosurgery," "mental surgery," "functional neurosurgery," and "sedative neurosurgery," it is brain surgery performed to alter thoughts, social behavior patterns, personality characteristics, emotional reactions, or other aspects of subjective experience in human beings. However, it does not encompass brain surgery directed at treating specific kinds of neuropsychology (e.g., tumors and strokes) or disorders of movement (e.g., tremors and paralysis).

The proponents of psychosurgery claim that certain mental illnesses, behavior disorders, and emotional disturbances can be treated by surgically destroying particular brain regions. Some of its more outspoken advocates have gone as far as to suggest that psychosurgery ought to be used to control the behavior of criminals and other social deviants. M. Hunter Brown, a California psychiatrist, has pointed out the supposed cost benefits: "Each violent young criminal incarcerated from 20 years to life costs taxpayers perhaps $100,000. For roughly $6,000, society can provide medical treatment [i.e., psychosurgery] which will transform him into a responsible, well-adjusted citizen."

Instead of summarizing the legal and ethical issues raised by the use of psychosurgery as a treatment for violence, I wish to focus here upon its purported scientific basis. I will examine whether psychosurgery is a therapeutic procedure in which specific benefits for the patient reliably follow the production of brain lesions, or an experimental procedure with consequences that are unpredictable and may be disastrous.

**SICK MINDS, SICK BRAINS**

Since ancient times, physicians have known that there is a relationship between the brain and the mind, and that brain injury or disease may be accompanied by dramatic and debilitating changes in the afflicted person's mental life.
During the 19th century, the idea took hold that mental disease was synonymous with brain disease, and that the disturbed or disturbing behavior of certain people had its origins in the derangement of specific brain organs. All that remained to prompt the birth of psychosurgery was for someone to get the idea of abolishing troublesome behavior by selectively destroying the offending brain organ.

In the first published account of psychosurgery, in 1801, Gottlieb Buerkhardt, supervisor of an insane asylum at Prefanger, Switzerland, justified the destruction of brain tissue in psychotic patients by arguing that "... our psychological existence is composed of single elements, which are localized in separate areas of the brain." Buerkhardt thought that the excitement and impulsivity of his patients resulted from an excess of neural activity originating in the cerebral cortex; if one removed appropriate parts of the cortex, one would remove the pathological impulses.

Buerkhardt operated on six patients, with poor results. One patient died, and another, who reportedly were peaceful and easier to manage on the wards, continued to exhibit psychotic symptoms. Buerkhardt was not discouraged, and he urged his colleagues to "tread the path of cortical extirpation." But he faced vigorous opposition by a large segment of the medical community, and it was to be almost another half century before another psycho-surgeon appeared on the scene to claim he had tread the path with success.

INDIFFERENT MONKEYS

In 1935, at the International Congress of Neurology, two American brain researchers, Carlyle F. Jacobsen and John F. Fulton, reported that they had destroyed the prefrontal regions of the brain in monkeys and chimpanzees. The animals showed marked deficits in learning and memory, as well as a host of other drastic behavioral changes. In several cases, bilateral frontal lobe lesions made the animals strikingly indifferent to stimuli that previously had provoked extreme agitation and frustration.

In the audience was a Portuguese neurologist, Antonio Egas Moniz. He rose to ask if it would not be possible to relieve anxiety in man by surgical means. Fulton was shocked by this proposal, but Moniz was undeterred. He returned to Portugal convinced of the similarity between Jacobsen and Fulton's description of animal behavior and the querulous and agitated state of many chronically hospitalized mental patients. And he became determined to surgically modify the mental life of obsessed and melancholic patients, through the operation that came to be known as prefrontal leukotomy or lobotomy.

In their first operation, Moniz and his colleague Almeida Lima used injections of alcohol to coagulate certain fiber tracts running between the frontal lobes and other parts of the brain. Within a short period of time, however, they abandoned this technique in favor of cutting the fibers with a special knife called a leucotome, which they inserted through a small opening drilled in the skull. During a 10-week period in late 1935, Moniz and Lima performed 20 leucotomies.

Moniz claimed that seven of his patients were "cured" by the surgery, and that another eight, who had previously been violent and agitated, became calm, tractable, and generally easier to manage. He described his cases with a minimum of critical detail and a large measure of self-praise, hailing the advent of leucotomy as "a great step forward... in the study of psychic functions on an organic basis... with both cures and improvements, but no failures to make us draw back."

Like Buerkhardt before him, and like many of his psychosurgical successors, Moniz was anxious to give his procedures the semblance of scientific validity. But the fact remains that from the start, prefrontal lobotomy could be justified only by ignoring the evidence from animal experiments, that the destruction of frontal-lobe tissues led to a wide range of disabling behavioral effects.

DAMAGED PEOPLE

As long as prefrontal lobotomies were performed mainly on chronically hospitalized psychotics, untoward side effects were difficult to recognize. Eventually, however, the operation became so popular that it was in use throughout the world, not only on psychotic patients, but also on so-called psy-
The relative inaccessibility of structures deep within the brain posed a serious problem for early psychosurgeons. Encased within its solid cranial vault, the brain is relatively impervious to surgical assault. Even when the skull is partially removed, the cerebral hemispheres that lie exposed comprise only a small and superficial portion of the entire brain volume. Hidden beneath them is a vast and incredibly complex system of cells, fibers, blood vessels and neural networks. One cannot gain direct access to these deeper regions, without mutilating the overlying areas in the process.

**NEW TECHNIQUES**

To solve this problem, students of animal brain function developed, around the turn of the century, a method that came to be called stereotaxic brain surgery. This method permits a surgeon to identify the location of a particular point within the brain in terms of three coordinates, using anatomical landmarks on the head's surface as reference points. Sets of maps or stereotaxic brain atlases, are now available for many species, including human beings. After determining the coordinates of a particular brain region from the appropriate atlas, the surgeon positions the subject's head within the working field of a special stereotaxic instrument. He can then direct probes or electrodes comprised of fine insulated wires toward the intended target; through a small hole drilled in the skull. It is possible to leave the probes in place within the brain for extended periods of time, with little discomfort to the subject, by securing the shafts of the probes to the surface of the skull.

Once in place, the electrodes may serve several purposes. First, by using electronic amplifiers and other equipment, one can record the electrical signals arising from the region of the brain near the uninsulated electrode tips. Al-
though one cannot be sure that such signals originate in the immediate vicinity, grossly abnormal patterns of electrical activity often indicate disordered functioning near the electrode tip, or in a brain region functionally related to it.

Second, by passing a weak electric current through the electrode and into the brain, one can stimulate the tissue in the vicinity of the electrode tip, frequently this seems to produce a particular kind of behavioral response in the patient. Although such behavior may be only remotely related to the response patterns normally associated with the brain region in question, stimulation experiments have figured prominently in recent attempts to learn more about how brain functions are organized.

Third, by passing stronger currents through the implanted electrode, a surgeon can destroy the tissue in the vicinity of the electrode tip. Thus psychosurgeons can produce lesions in parts of the brain, were formerly inaccessible.

Psychosurgeons have recently introduced yet another technique, drawn from the world of modern electronic communications. Miniaturized, wireless telemetry systems make it possible to transmit signals between an electrode implanted in the brain of a freely-moving patient, and a stimulating or recording device located some distance away. This means that the person in control of the telemetry system can unobtrusively monitor or manipulate the brain activity and behavior of an otherwise unrestrained individual.

NEW TARGETS

The advent of stereotaxic psychosurgery has stimulated interest in new targets within the brain. The major focus of attention has shifted from the frontal lobes to the limbic system. This system includes certain “primitive” portions of the cerebral cortex (the hippocampus, hippocampal gyrus, and cingulate gyrus), and also a number of deeper-lying structures with which they have primary connections (the amygdala, septal nuclei, anterior thalamic nuclei, and hypothalamus). Overlying the limbic system, especially in primates (including man) is the enormous, mushrooming neocortex, with which most brain scientists associate our “higher” cognitive ability.

Loosely speaking, then, the limbic system occupies an intermediate position between the lower and higher parts of the brain. It seems ideally situated to receive, transform and transmit signals passing between the older brain structures, which are involved in stereotyped behavior and visceral (“gut”) and glandular responses, and the newer structures, which involve sensation, perception, thought, language, and other complex social acts. As one long-time student of the brain has put it, the limbic system is the possible mechanisms by which “the brain transforms the cold light with which we see into the warm light which we feel.”

Finally, limbic-system mechanisms seem to contribute to a person’s sense of individuality and concepts of reality. They mediate emotional feelings that ultimately guide behavior required for self-preservation and the preservation of the species.

What happens when these critical structures are injured or destroyed? As in the case of prefrontal lobotomy, we find an early and portentous answer in experiments on laboratory animals.

DERANGED MONKEYS

In 1937, Heinrich Kluver and Paul C. Bucy reported that they had destroyed the temporal lobes and parts of the limbic system in rhesus monkeys. After the operations, they observed striking derangements in the behavior of the monkeys, including difficulty in recognizing objects, increased sexual activity directed toward a wide variety of animate and inanimate objects, and a compulsive orality that caused the monkeys to place both food and nonfood objects repeatedly in their mouths.

There were two other important effects. Although these monkeys had previously been fearful, wild, and difficult to handle, after the operation they became quite tame. They also appeared unable to inhibit responses leading to painful consequences, often exposing themselves to threatening or injurious situations. In a film that Kluver made, an operated monkey placed the lighted...
end of a cigarette in its mouth, quickly threw it down when he was burned, and then repeated the same painful act several times again in rapid succession.

The "Kluver-Buch syndrome" demonstrated that temporal lobe structures are involved in a wide range of behavioral activities. Its dramatic features soon induced other investigators to pursue similar studies. For our purposes, the most important subsequent discovery was that in many species, several of the more severe emotional aspects of the syndrome could be produced by lesions restricted to one part of the limbic system, the amygdala.

In one study, Arthur King and several colleagues performed amygdalotomies on monkeys that had been living in a free-ranging colony. In the laboratory, most of the operated animals seemed to become less aggressive, and friendlier toward their human handlers. Of course, this result was exactly what one would predict on the basis of Klüver and Bucy's original findings. But, when the animals rejoined their old troop in the wild, a very different picture began to emerge. Although they had exhibited increased friendliness toward their human captors, they appeared confused and fearful among their former friends and relations. When other troop members approached in a neutral and nonthreatening way, the amygdalotomized animals would usually cower or flee. Conversely, when a dominant member of the group made a threatening gesture, an altered animal, which would otherwise have adopted a submissive posture, would instead display an unseemly degree of insubordination, it would attempt to attack the dominant animal, and thereby invite a predictable and often terrible beating.

All in all, the amygdalotomized monkeys were incapable of coping with the complexities of social life in their normal environment. This incapacity caused them to become social isolates. Eventually they all died, either from starvation or from attacks by predators.

The results of these animal experiments suggest that no single part of the limbic system is concerned with only a single aspect of behavior. They should make us skeptical about the claim that specific therapeutic effects are attainable by destroying the amygdala or various other parts of the limbic system.

Since we have devoted our attention to the effects of amygdalotomy upon behavior in nonhuman primates, let us now focus on destructive lesions in the amygdalas of human beings.

EXCISING VIOLENCE

In a previous PT article I pointed out that some psychosurgeons have suggested the existence of a causal link between brain disease and social violence, and have advocated psychosurgery as a scientifically valid and therapeutically successful treatment for human beings whom they perceive as exhibiting "poor control of violent impulses." In that connection, I referred to a book called Violence and the Brain, in which Vernon H. Mark and Frank R. Ervin describe their use of bilateral amygdalotomy with people who were allegedly suffering from episodes of unprovoked and uncontrollable violence due to limbic brain disease. Since that article was not primarily concerned with psychosurgery, I was content to state my conviction that Mark and Ervin's arguments have many logical and scientific shortcomings. Nor did I attempt to substantiate my belief that the book fails to provide the reader with clear and self-critical accounts of the cases reported.

In the book, Mark and Ervin described most of their patients as not only disturbed and impulsively violent, but also as suffering from some form of epilepsy. It is their contention that in most of these cases, the violent behavior was not only irrational and unprovoked, but was also directly traceable to brain disease. They assert, furthermore, that in most cases, their patients' behavioral problems were substantially alleviated by an amygdalotomy or other forms of limbic-system psychosurgery.

In attempting to evaluate these claims, it should be noted at the outset that there has long been a popular belief in a connection between epilepsy and violence. The common phrase, "a fit of anger" nicely epitomizes this view. But several clinical studies that have dealt with this question have failed to confirm this belief. A comprehensive review of the question, sponsored by the National Institute of Neurological Diseases and Stroke, concluded that "... the best generalization is that violence and aggressive acts do occur in patients with temporal lobe epilepsy but are rare, perhaps no higher than in the general population."
Bearing in mind that the existence of a relationship between epilepsy and violence remains an open question, let us consider closely one of Mark and Ervin's most highly touted cases, "Thomas R."

**COURTESY AND RAGE**

Mark and Ervin introduce Thomas as "a brilliant, 34-year-old engineer with several important patents to his credit." They say his manner was "... quiet and reserved, and he was both courteous and sympathetic." They say further that "he was an extremely talented, inventive man, but his behavior at times was unpredictable and even frankly psychotic."

In this connection, they allege a prolonged history of violence that included spells of rage, "sometimes directed at his co-workers, and friends, but... mostly expressed toward his wife and children." They report that Thomas was "very paranoid, and harbored grudges which eventually produced an explosion of anger." They say that in a conversation with his wife, "he would seize upon some innocuous remark and interpret it as an insult. At first, he would try to ignore what she had said, but could not help brooding, and the more he thought about it, the surer he felt that his wife no longer loved him and was 'carrying on with a neighbor.' Eventually he would reproach his wife for these faults, and she would hotly deny them. Her denials were enough to set him off into a frenzy of violence." Mark and Ervin say that he also experienced periods of confusion and hallucination, but "Thomas' chief problem was his violent rage."

Mark and Ervin report that prolonged psychiatric treatment had not improved the patient's behavior, and that the referring psychiatrist felt Thomas' spells of rage represented an unusual form of temporal lobe seizure. According to Mark and Ervin, an electroencephalogram revealed electrical brain activity often indicative of epilepsy, and further tests indicated the presence of other brain abnormalities.

What happened next is best described in Mark and Ervin's own words, from a 1968 report:

"After a futile attempt to control his seizures and violence with a wide range of pharmacological agents, chronic temporal lobe electrodes were implanted in his amygdala.

"Over a period of weeks, repeated stimulation and recordings were carried out to find the optimal site for destructive lesions.

"It is of interest that stimulation in the medial portion of the left amygdala nucleus produced a feeling of 'going wild' and 'I'm losing control.' On the other hand, stimulation in the lateral amygdala, three millimeters away, repeatedly produced a sensation of 'hyper-relaxation,' a feeling of 'detachment,' just like an injection of Demerol, 'just the antithesis of my spells.'

"In his usual state, this patient was keenly aware of the slightest personal insult or threat and his response was often sudden or violent. Under the effects of lateral amygdala stimulation, he showed bland acquiescence to the suggestion that the medial portion of his temporal lobe was to be destroyed. This suggestion, under ordinary circumstances, would provoke wild, disordered thinking. Indeed, eight to 10 hours after stimulation had been completed, and coincident with the disappearance of his detached and hyper-relaxed feeling, he became wild and unmanageable and protested vigorously against any destructive lesions in his amygdala." According to Mark and Ervin's account, it took "many weeks of patient explanation, and a near social tragedy" (not otherwise explained), before Thomas accepted bilateral amygdala lesions.

In any event, the 1968 report continues: "[The lesions] were carried out sequentially, and he has not suffered a generalized rage attack in the six months following his last amygdala lesion." In Violence and the Brain, published two years later, they devoted twice as many sentences to the same point: "Four years have passed since the operation, during which time Thomas has not had a single episode of rage. He continues, however, to have an occasional epileptic seizure with periods of confusion and disordered thinking."

The reader, recalling the original claim that "Thomas' chief problem was his violent rage," might conclude that amygdalotomy has effected a specific cure. The rage allegedly is gone, the other symptoms remain essentially unchanged, and there are no permanent, postoperative side effects. In light of the devastating effects of amygdalotomy in monkeys, Mark and Ervin's reports of suc-
cess with Thomas seem remarkable indeed. To me, it is especially surprising that the only adverse side effect mentioned in any of the reports I examined is temporary impotence.

Prior to his operation, Thomas was a married man who supported his family through his work as an engineer. Is he still married? Is he employed? What are his present circumstances and future prospects? Unfortunately, Mark and Ervin's brief descriptions are silent on these and many other questions.

Another View

There is, however, some independent information about Thomas now available from other sources. For example, a psychiatrist and well-known critic of psychosurgery, Peter R. Breggin, has conducted his own inquiry and published some of his findings regarding this case. Breggin claims to have interviewed Thomas and his relatives, reviewed the hospital charts, and discussed the case with several involved individuals. In recent months, I have obtained additional information to supplement Breggin's material.

According to Breggin, Thomas was continuously employed through December 1965. That year, he began to have serious marital problems, and visited his wife's psychiatrist. The psychiatrist has told Breggin in a telephone interview that although Thomas' wife was indeed afraid of him, the psychiatrist could remember no actual harm done to her. Breggin says, "The psychiatrist remembers that Thomas was depressed, but not sufficiently depressed to warrant electroshock or drugs. His memory is entirely consistent with the hospital records which report no hallucinations, delusions, paranoid ideas, or signs of difficulty with thinking. In the charts, his most serious psychiatric diagnosis is 'personality-pattern disturbance' in classification reserved for mild problems with no psychotic symptomatology.'

Thomas worked intermittently during the early months of 1966, until the first of his diagnostic hospitalizations at Massachusetts General Hospital, on March 11, 1966. Breggin says that the hospital charts indicate Thomas had never been in trouble at work or elsewhere for aggressive behavior. During his four diagnostic hospitalizations, according to Breggin, Thomas "was never restrained, never forced into a locked ward, or in any way treated as a dangerous man." Breggin says that the first violent reactions he saw in the records were those that occurred when Mark and Ervin proposed to make lesions in Thomas' brain.

According to Breggin's account, the electrodes remained in place until August 1, 1967. During the nine-month period when the stimulation experiments and brain lesions were being performed, Thomas' wife served divorce papers to him on the ward. She eventually married the neighbor about whom Thomas had been so concerned.

On August 27, 1967, Thomas left the hospital in the care of his mother and moved to her home in California. Within a short time, it became clear that he was socially confused and unable to cope with the complexities of normal life. He was picked up by the police in a nearby city, and on November 20 he entered a Veterans Administration hospital. It was the first psychiatric hospital of his life. He was hallucinating, delusional and confused, and he wound up on a locked ward under heavy doses of medication.

During this time the V.A. physicians apparently did not have access to his previous medical records, and thus did not recognize the realistic basis of his delusions. Breggin quotes a passage in the discharge summary of May 22, 1968: "Patient stated that Massachusetts General Hospital were controlling him by creating lesions in his brain tissue by microwave and that they had placed electrodes in his brain tissue some time before. Stated that they can control him by creating lesions in his brain tissue by microwave and that they can turn him up or turn him down." Certainly anyone with a story like that would appear to be imagining things. The V.A. diagnosis was "schizophrenic reaction, paranoid type."
Only five months after release from the V.A. hospital, Thomas was rehospitalized. Breggin reports that hospital staff notes indicate he had exhibited the first officially recorded episode of public violence in his life. An entry on October 28, 1968 says: "arrested by police—involved in fight, very impulsive." The Veterans Administration declared him to be totally disabled.

Breggin asserts that at the present time, Thomas continues to be confused and delusional; he is unable to work, generally incapable of caring for himself, and has been periodically rehospitalized as assaultive and psychotic. Breggin claims that during a recent confinement Thomas walked about the wards with his head covered by bags, newspapers and rags, fearful that his brain would be further destroyed. He quotes Thomas' mother as saying that since the operation, "The poor guy has been almost a vegetable . . . We know he was destroyed by that operation."

A VISIT TO BOSTON

There are other sources of information about Thomas' postoperative troubles. In August 1972, Ernst Rodin, a Detroit neurosurgeon, visited Mark's project in Boston. At that time, Rodin was coauthor of a proposal to perform psychosurgery on patients who were in a state hospital because of "severe, uncontrollable, aggressive outbursts." The purpose of his visit, as he described it in a memorandum he wrote shortly thereafter, was "to obtain the most up-to-date information on the results of surgery for aggressive behavior in human beings."

Rodin apparently hoped this new information would strengthen his own proposal, but he found the results of his interviews "quite disturbing." After questioning Ira Sherwin, a neurologist on the project, Rodin concluded: "The reports on the operated patients do not jive exactly between Dr. Sherwin and Dr. Mark . . . The patient Thomas R., an engineer of high IQ . . . is floridly paranoid and in a V.A. hospital in [a West-Coast city]. I was told that he will never be able to function in society. Of physiological interest, is the fact that Mark and Ervin figure prominently in his delusional system, but the delusions are not aggressively flavored and there is no drive to 'get even' for what they have done to his brain."

Rodin wrote that he and Sherwin had also discussed other patients, including those described in Violence and the Brain. Sherwin, he said, "was not aware of any genuinely successful cases." As regards the scientific validity of some of Mark and Ervin's results, Rodin wrote: "Sherwin . . . has no faith in the data. But since his Neurosurgical superiors do possess this faith, some of the material may appear in print."

This revealing memorandum is part of the public record; it was an exhibit in a civil action brought on behalf of the first proposed candidate for psychosurgery under Rodin's project. That important case ended in a decision barring experimental brain surgery upon individuals involuntarily confined in Michigan's public institutions (see page 69).

What, then, has happened to Thomas? Late in 1978, a declaration was filed in Massachusetts' Suffolk Superior Court on behalf of the patient known as Thomas R. It charges that as a result of the surgery "the plaintiff was permanently injured and incapacitated, has suffered . . . great pain of body and mind, has been required . . . to incur substantial expenses for medical care and treatment, and has been permanently deprived of his earning capacity and his ability to work . . . " At this writing, the matter is still in litigation.

The apparent fate of Thomas R., however pathetic and disturbing, is wholly consistent with our rudimentary understanding of the brain and the complexity of its functions. No brain activity occurs in isolation, without correlated activity in other regions. As the complexity of behavior increases, so does the extent of interaction in the brain. Yet many psychosurgeons continue to ignore these facts, in favor of a pretentious and extreme doctrine of brain localization.

OPERATING ON DEVIANCE

Proponents of this doctrine sometimes attempt to use it to justify a psycho-technological approach to social conflict. I have already mentioned as a case in point the proposal to perform psychosurgery on prisoners. And, as I have argued elsewhere, there are public officials as well as psychotechnologists for
whom the distance is short from brain disease to social disorder, and the passage is swift from the medical control of neurophysiological problems to the social control of deviant individuals and groups.

Psychosurgery has been performed on sexual deviants and drug addicts. A report of 22 such cases from Germany was published in 1973. Operations have also been performed on “hyperactive” children in several countries during the past few years. One psychosurgical team, for example, recently reported results of limbic-system lesions made in 115 children, including 30 who were under the age of 11. They claimed that lesions of the cingulate gyrus, amygdala, and regions of the hypothalamus, “proved to be useful in the management of patients who previously could not be managed by any other means.”

O. J. Andy, a well-known psychosurgeon at the University of Mississippi, has reported operations on a number of children six to 19 years old. In recent testimony before a Senate subcommittee, Andy said he had performed 13 or 14 such operations, and that a majority had produced “good” or “fair” results. He also presented a few “brief case reports.” Here is one in its entirety:

“A seven-year-old, mentally retarded child had sudden attacks of screaming, yelling, running and beating the head against the wall. The walls were actually indented by the blows. Following thalamotomy three years ago, the patient did not display the wild, aggressive and screaming behavior. The improved behavior was an enjoyment for both the child and the parents.”

SHIFTLING THE EMPHASIS

Although the abusive deployment of psychosurgery might be curbed by legislative or legal means, I think that the most important task before us is to develop alternative ways of perceiving social problems. We must learn to see such things as violence and hyperactivity as something other than individual infirmities. We must understand that they cannot be overcome by merely treating certain people with the most efficient or inexpensive technological methods available. Finally, we must shift the emphasis in our thinking from a preoccupation with controlling individual deviance to the problem of understanding the various systems (social, political, family) of which both deviance and its control are interrelated parts.

Clearly, the age of psychotechnology has arrived, and psychosurgery is merely its cutting edge. We must carefully examine the entire spectrum of psychotechnology, and begin to question the basic ideologies of behavioral prediction, modification and control. To pretend that physical control of the mind is merely a futuristic fantasy is plainly foolish. To believe that it can’t happen here is even worse. To deny the power and political appeal of a repressive psychotechnology is to expedite its encroachment, and to refrain from combating it is to surrender our constitutional freedom and our human dignity.

Stephan L. Chorover, whose postdoctoral studies explored the effects of brain injury in human beings and other primates, is professor of psychology and brain science at M.I.T. In his first Psychology Today article, “Big Brother and Psychotechnology” (October 1978), he warned that psychosurgery, drug therapy, and behavior modification have become dangerous tools for social and political repression. He is developing plans for a continuing research project on the social impact of psychotechnology.
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