

Psychosurgery and Other Somatic Means of Altering Behavior

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"The brain is no longer a sacred organ, excluded from surgical therapy because it supposedly houses the human soul." Dr. H. Thomas Ballentine, Jr., Massachusetts General Hospital.¹

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Psychosurgery differs from brain surgery. Brain surgery has been done as an accepted part of medical practice as a means of eliminating diseased tissue—primarily cancer and other tumors, but also abscesses and scar tissue that is a focus of epileptogenic activity. Psychosurgery is also brain surgery but is performed not to eradicate disease but to relieve pain, alter feelings and change behavior; scientific psychosurgery dates back to the development of the lobotomy procedure of Egas Moniz of Portugal who in 1936 published his *Tentaives opératoires dans le traitement de certaines psychoses*² which earned for him the Nobel prize because this pioneering work was seen as such a potential boon to mankind. A less scientific kind of psychosurgery had been performed in Ancient Egypt and pre-Columbian America; even earlier, trephines (small circular holes) were drilled into the skull by primitive man, as is evidenced by prehistoric skulls with trephination. Trephination is still practiced, "in primitive cultures as a form of magic medicine."³

Even prehistoric and primitive man ascribed the cause of disordered behavior to the brain. It followed naturally that if the skull could be pierced the evil that was within could be let out and dissipated.

The early brain surgery procedures were performed to improve disordered behavior, but only in the nineteenth century did doctors begin to understand the localization of function within the brain, that, for example, a left-sided paralysis was caused by a lesion in the motor area of the right cerebral hemisphere, and only in this century have skilled neurologists been able to pinpoint through localizing symptoms the precise area of disease in the brain.

Modern nomenclature reserves the term *brain surgery* or *neurosurgery* for the accepted procedures to cure disease or to alleviate symptoms caused by organic pathology; the newer term *psychosurgery* is used for procedures to relieve pain or alter behavior where organic pathology is absent or is minor.

But the distinction between brain surgery to eradicate disease and psychosurgery to alter behavior is not clearcut. Patients with brain tumors show many evidences, often bizarre, of disordered behavior; a change of behavior or of personality in later life is one of the prime diagnostic criteria of a brain neoplasm. The surgery removes the diseased tissue and either restores the patient to his premorbid personality and behavior or, dependent upon the site of brain tissue removed and the extent of the surgery, leaves the patient with a permanent behavioral disorder (regressive behavior, poor judgment, impaired motor function).

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We are also aware of conditions such as epilepsy in which no discernible brain lesion exists, yet on the basis of brainwave tracings a focus can be discovered from which there is an abnormal electrical discharge. The surgery to remove the tissue which is the epileptic focus does not remove tissue which is overtly diseased but it does remove tissue which must be covertly diseased since it creates disordered brainwaves. Surgery here is done primarily to influence the symptoms of the disease—convulsions or other behavioral manifestations of epilepsy—since the diseased tissue itself is not the site of infection or aberrant cell multiplication and would not require surgical removal were it not for abnormalities of behavior.

We can then create four classifications of brain functioning which lead to surgical intervention, neurosurgery and psychosurgery:

1. Brain disease with minimal behavior disturbance.
2. Brain disease with gross behavioral disturbance (most pathological conditions for which brain surgery is done).
3. Behavioral disturbances which result from abnormal brain tissue which would not merit surgical intervention if behavior were not disturbed.
4. Behavioral disturbances with no identifiable tissue or brainwave pathology.

Thomas Szasz has questioned the use of the medical model—with its procedures of classification or diagnosis, prediction or prognosis, and prescription (of medication, surgery, or other forms of therapy)—for situations in which there is no traditional medical disease. Our categories 3 and 4 deviate from conditions which have traditionally been considered “medical.” Psychosurgery is now being performed for chronic violence, chronic criminal behavior, chronic anxiety, chronic obsessive rumination and also for schizophrenia. Although Szasz has often been criticized for presenting an extreme position, opposed to traditional psychiatry and promoting the restriction of the role of the psychiatrist purely to educator and voluntary (i.e., non-coercive) psychotherapist, his emphasis on the dangers of the mixture of the medical and social deviancy models have particular application for psychosurgery.

The term “mental illness” is also widely used to describe something quite different from a disease of the brain. Many people today take it for granted that living is an arduous affair. Its hardship for modern man derives, moreover, not so much from a struggle for biological survival as from the stresses and strains inherent in the social intercourse of complex human personalities. In this context, the notion of mental illness is used to identify or describe some feature of an individual's so-called personality. Mental illness—as a deformity of the personality, so to speak—is then regarded as the cause of human disharmony. It is implicit in this view that social intercourse between people is regarded as something inherently harmonious, its disturbance being due solely to the presence of “mental illness” in many people. Clearly, this is faulty reasoning, for it makes the abstraction “mental illness” into a cause of, even though this abstraction was originally created to serve only as a shorthand expression for, certain types of human behavior. It now becomes necessary to ask: What kinds of behavior are regarded as indicative of mental illness, and by whom?

The concept of illness, whether bodily or mental, implies deviation from some clearly defined norm. In the case of physical illness, the norm is the structural and functional integrity of the human body. Thus, although the desirability of physical health, as such, is an ethical value, what health is can be stated in anatomical and physiological terms. What is the norm, deviation from which is regarded as mental illness? This question cannot be easily answered. But whatever this norm may be, we can be certain of only one thing: namely, that it must be stated in terms of psychosocial, ethical, and legal concepts. For example, notions such as “excessive repression” and “acting out an unconscious impulse” illustrate the use of psychological concepts for judging so-called mental health and illness. The idea that chronic hostility, vengefulness, or divorce are indicative of mental illness is an illustration of the use of ethical norms (that is, the desirability of love, kindness, and a stable marriage relationship). Finally, the widespread

psychiatric opinion that only a mentally ill person would commit homicide illustrates the use of a legal concept as a norm of mental health. In short, when one speaks of mental illness, the norm from which deviation is measured is a *psychosocial and ethical* standard. Yet, the remedy is sought in terms of *medical* measures that—it is hoped and assumed—are free from wide differences of ethical value. The definition of the disorder and the terms in which its remedy are sought are therefore at serious odds with one another. The practical significance of this covert conflict between the alleged nature of the defect and the actual remedy can hardly be exaggerated.⁴

Perhaps law cannot argue with psychiatry's efforts to change human behavior by means of psychosurgery; after all, the main purpose of law has always been to change human behavior—to change violent ways of settling disputes into peaceful ones, to persuade people to conform their practices to traditional methods in an effort to prevent arguments and minimize disputes, to deter people from seeking unique solutions but, instead, to force them to rely on proven solutions. We could say that law is interested in nothing except human behavior and that law has always been engaged in the effort of trying to change and modify human behavior. The law has been attempting to do this by time-honored, not notably efficient means—by providing examples which act as deterrents; by punishments, prison sentences and threats of prison sentences, money loss, public scorn; these are the kinds of mechanisms that the law has available to change human behavior. (In addition, it has the appeal to rationality.)

Hypnosis—In the last two centuries a literature has developed of newer ways to change human behavior which can be subsumed under several broad headings. The oldest of these methods is hypnosis. Scientific interest in hypnotism dates to immediately before the French Revolution when Mesmer popularized hypnotic seances which he falsely ascribed to electrical currents achieved by stroking ivory rods. Benjamin Franklin, Guillotin, and Lavoisier were members of a committee that failed to endorse the scientific basis of Mesmer's work; nevertheless, following the rage for "mesmerism" the hypnotic state began to be a subject for scientific inquiry. Mesmerism has been cited for its importance in the history of ideas: it was a major mediating force in the transition from the "cold rationalism of the midcentury" to the more romantic, less scientific, thought of the late century characterized by Rousseau: it has been said that the French "buried Voltaire and flocked to Mesmer."⁵

Calder summarizes current thought on hypnotism:

Hypnosis is a more ritualised method of mind control and John Clark of Manchester University has developed a quasi-mechanical method for producing the hypnotic trance. His hypnotising machine is essentially a tape-recording of a voice going through the basic patter of the hypnotist. It is under the control of the subject himself, who has to press a button at critical moments during the programme—for example, when his eyes are closed. Otherwise the previous part is automatically repeated as often as necessary. Superfluous parts of the ritual are stripped away, and all the subject looks at is a drawing-pin stuck in the wall.

This mechanisation is useful for research on hypnotism but it also tells us that, while the hypnotised state remains mysterious, there is nothing magical in the procedure for making the mind flip over into that state. It illustrates the immense power that words, even from a tape-recorder, can exert over the human mind, though hypnotism may also be possible without the use of words. While watching the hypnotist Jean-Martin Charcot at work in Paris, Sigmund Freud first suspected the existence of the unconscious mind, but since then hypnotism has figured only in a minor way in psychiatry and research.

What can be accomplished by the hypnotist? Demonstrations of robot-like response to commands, or of suggested immunity to pain, fall far short of enduring control of the conscious mind. No one is likely to do anything important as a result of hypnosis that he would not otherwise willingly do. Even the claims that, under

hypnosis, a person can recall in detail long-forgotten experiences of his childhood become doubtful, when it turns out that much of the information is invented and the rest would be likely to be remembered anyway. Hypnosis may be useful, nevertheless, for digging out ordinary memories repressed in a mental patient.

As a technique of mind control, the weakness of hypnotism is that the unwilling subject can nearly always resist it. On the other hand, an important practical conclusion from studies of hypnotism is that some people—about one in twenty—are exceptionally prone to hypnosis and other suggestions. Stephen Black of London reported that most of the people he interviewed who had seen flying saucers fell into this category of deep-trance hypnotic subjects. Elements of the hypnotist's art may be adopted by priests and orators, to some effect.⁶

Brainwashing—A second variety of mind control is brainwashing. Particularly in Russia, China, and in other Communist countries methods have been developed to indoctrinate masses of people to conform their behavior to societal norms and to persuade deviants to recant. Techniques involving the use of psychological pressures, especially the appeal to loyalty, combined with isolation experiences and sometimes the use of drugs have proved more or less effective in altering beliefs and behavior.

Says Calder, "Stories told of the likely effectiveness of brainwashing are often exaggerated yet there is no denying human vulnerability to torture, mental as well as physical. One of the simplest and cruellest techniques is sensory deprivation—the denial of the normal inflow of information from the environment which is not merely interesting but essential for the proper functioning of the brain."⁷ (The use of "the hole" in prisons is based on the demoralizing effect of deprivation of sensory stimuli, but many "normal" phases of prison life suffer from some degree of sensory deprivation. The rebellious prisoner is being transformed into the cooperative prisoner.)⁸

Donald Hebb says, of the typical student who took part in his group's experiments of this kind at Montreal, that taking away the usual sights, sounds and bodily contacts could disturb his capacity for critical judgment, 'making him eager to listen to and believe any sort of preposterous nonsense.' Solitary confinement in a bare and silent cell is an ancient prelude to brainwashing. Sleep deprivation is another obvious and powerful technique for temporarily deranging an individual: political prisoners of our time have told of being wakened by loud noises every quarter of an hour. Such treatment accelerates the effect of solitary confinement, as does confusing information—in the timing of meals, for example—which disorganises the victim's sense of time and place.

If a dog begins to recognise a bell as a signal of impending food, then the food is withheld for increasingly long intervals, the dog will eventually break down completely, going into a state known as general inhibition. The same outcome occurs when a dog has been taught that a circle signals 'food' while an ellipse signals 'no food' and then the animal sees shapes that could be taken either as circles or ellipses. Even the most phlegmatic dog breaks down in these circumstances, if it is first physically exhausted by exercise or disease. Such procedures, from the classical experiments with dogs by Ivan Pavlov in Russia, give a rough scientific basis for further well-known techniques of mental assault on prisoners.

What is remarkable is not that forceful brainwashing is possible but that it can often be resisted. It is not very effective in implanting new opinions or false information in unwilling heads. Some people are very suggestible, whether or not they are ill-treated. Others, quite understandably, will agree to anything or confess to anything to escape further torture. When attention is individualised, the pressures can be made unendurable. But the results of a large-scale indoctrination effort of recent times—that of the Chinese on prisoners of the Korean war—were really quite unimpressive.

Americans were distressed that 13 per cent of their servicemen actively collaborated with their Chinese captors, but the reason seems to have been poor morale and discipline, and the unaccustomed experience of privation, rather than the ingenuity of the interrogators. Men who stood firm, giving no hint of co-operation whatever,

were sometimes knocked about but their minds were left alone. A group of a hundred Turkish prisoners in Korea retained such discipline and comradeship that they completely resisted efforts in indoctrination.⁹

The use of brainwashing techniques by the police has led to false confessions by people who have not committed crimes; but education, indoctrination leading to loyalty to school, profession, church, and state are also examples of brainwashing.¹⁰

Drug Therapy—During the last thirty years, drug therapy has become important in psychiatry; drug therapy plus the self-administration of over-the-counter drugs, the use of such substances as alcohol and marijuana to induce more pleasurable or more peaceful states—these are important methods of behavior control. Some of the categories of behavior-changing drugs are tranquilizers, antidepressants, psychic energizers, sedatives, and narcotics. Says Calder, "Of the existing possibilities for mind control by drugs, the very simplest of these we have noted may be the most sinister—tranquilizers in the public water supply. Another scheme foreshadowed in fiction envisages the state as drug-pusher, exacting obedience in exchange for the daily 'trip.'" Calder captions a picture of a recumbent rhinoceros: "Drugs make wild animals easier to handle. Could the same principle be applied to 'wild' citizens?"¹¹

The possibility of the use of drug therapy to influence human behavior (for example, to make citizens tolerate situations which otherwise seem intolerable) has been foreshadowed in the novels of George Orwell (*1984*) and Aldous Huxley (*Brave New World*). A real life parallel, in addition to the great number of prescriptions for tranquilizers, antidepressants, and amphetamine energizers and appetite-suppressants now dispensed by physicians, which must have some effect on the attitude of the citizenry towards the society, is the methadone program which is described by some critics as giving government officials unprecedented ability to control behavior.

Black leaders, in particular, have described a disproportionately black patient population that is legally addicted to methadone, dependent on the government as the source of that methadone, and so subject to the will of that government; they see the methadone program as a way that the government can control behavior and political action.

A more realistic possibility is the development of long-range tranquilizers which can be given with or without the consent of the patient, because they are given by injection rather than by mouth. Already in use for chronic schizophrenics is a long-acting injectable phenothiazine which is given only once every two weeks, viz. injectable fluphenazine.

A single intramuscular injection every two weeks by a nurse obviously consumes far less nursing time than does the administration of oral medication once, twice or three times a day. Many schizophrenic patients are unreliable about taking oral medication following their release from the hospital. Others become quite skillful at evading the actual ingestion of oral medication even while hospitalized. Injectable depot fluphenazine ensures that effective antipsychotic medication is being made available to the patient.¹²

At present two minor tranquilizers, Librium and Valium, are being taken on a regular or an intermittent basis by more than one million Britons, and the British National Health Service pays more than \$20,000,000 yearly for these two drugs. Legal action resulted when a Monopolies Commission Report found that the active ingredients for Librium could be bought in Italy for about \$10 a pound, in contrast to the \$420 a pound which Roche Products Ltd., the British company with exclusive rights to sell these products in Britain, paid to its Swiss parent company, the patent-holder, F. Hoffmann-La Roche and Company. At first Roche threatened to defy the rollback on prices, but when the government sought an injunction against this, which might have involved criminal rather than civil penalties for defiance, the company announced

it would comply but would seek compensation for the \$25,800 a day loss of revenue.¹³

Most of the behavior change that we achieve through drugs is a change of general behavior and not a change of specific behavior. The drugs change moods; they deal with anxiety, improve performance, attack such general symptoms as tension or depression, but they do not deal with more specific syndromes or symptoms such as *a propensity to fire-setting or acting-out sexual behavior*. The more specific syndromes or symptoms may respond to an amelioration of a more general symptom. A patient whose problem is self-destructive behavior may respond to a tranquilizer or to an antidepressant. But this is "shotgun" therapy, a very important means of changing human behavior but scarcely the answer to crime in the streets. In an effort to get drugs or chemicals that will work on specific brain sites so that behavior can be changed more selectively, as selectively as the behavior changes that can be achieved through electrodes which deliver an electrical stimulus to a very limited and selected portion of the brain, research goes on to find drugs which act more selectively. In addition, "chemitrodes," very fine tubes inserted into the brain, are used to make it possible to apply drugs and chemicals to selected minute regions of the brain.

ECT—One of the most used somatic methods of dealing with psychiatric problems and changing feeling is Electroconvulsive Therapy (ECT).

Electroconvulsive therapy, although when first introduced by Cerletti and Bini in 1938 was recommended for schizophrenia and neurotic conditions, was rapidly proved ineffective for these diagnostic entities and it is now used in mental hospitals for three conditions; depressive psychosis, mania, and catatonic excitement. The latter two are rare conditions. Particularly in rural areas ECT is also given on an outpatient basis and often the conditions for which it is given, both by rural and smalltown practitioners and in a minority of mental hospitals, are not confined to the three conditions on which there is general agreement—it is given for acute schizophrenia, chronic schizophrenia, neurotic depression, sociopathic behavior, alcoholism, and recently in Massachusetts to a teenager hospitalized for smoking marijuana! It has also been given to enforce hospital discipline—an investigation of the Lima (Ohio) State Hospital revealed that patients were kept in line by the administration of and by the threat of shock.

Electroconvulsive therapy is given very sparingly in good mental hospitals. The Institute of the Pennsylvania Hospital, one of Philadelphia's well-known private psychiatric hospitals, reported that during a recent year (1970-1971) about 7.5% of inpatient admissions were treated with electroconvulsive therapy.¹⁴

On the other hand, a private proprietary hospital may give ECT to 60%, 70% or even 100% of its patients—some hospitals use this as the only treatment modality. Factors in this disparity of treatment would appear to be the economics of hospital management, the limitations on time of hospitalization created by Blue Cross reimbursement plans, and the limitations of the staff of the proprietary hospitals rather than any difference in the diagnostic categories of the patients in these two kinds of institutions.

Some proprietary hospitals rely on this modality for the convenience of the staff, since the effect of successive shock treatments is to render the patient more and more confused, regressed, noncombative, pliable, and above all, forgetful. A hospital which relies primarily or largely on ECT can minimize the need for patient care and other types of therapy and minimize the need for trained and perceptive personnel.

A patient who protests his admission and who thus creates a "disturbance" that requires staff attention will forget his complaints concerning his hospitalization after several ECT treatments.

Hospitals which give a large percentage of their patients ECT are often profitable business entities—they are referred to in psychiatric circles as "electric shock factories," "shock factories," or "shock mills." Neal Chayet, a lawyer who concentrates on mental

health problems, believes malpractice actions could lie (but there is no known reported case) against "the physician who lives in an area where the local general hospital has a good psychiatric ward, but sends his patient to a shock mill instead. . . ."15 In actual practice, psychiatry has no central governing agency that inquires into what institutions give how much ECT, many local practitioners have so little psychiatric knowledge that they do not know how many psychiatrists disapprove of this kind of treatment, and the proprietor of the local shock mill often has a better reputation in the community than psychiatrists who run hospitals using other modalities; the shock mill proprietor is often thanked because he returns the patient to the community (groggy, forgetful, and often vulnerable to further breakdowns) in a three-week period.

Sometimes ECT is used for punitive purposes. It is a way of showing the patient who causes commotion "who is boss" and, in addition to reducing the patient to the point where he cannot effectively protest or assert legal rights, also to "teach him a lesson."

The New York Times reported on November 27, 1971, concerning the Lima (Ohio) State Hospital:16

Lima, Ohio, Nov. 26—The fortress-like state hospital for the criminally insane here has been described—by inmates, staff members, state officials and Ohio's governors—as a chamber of horrors.

The conditions that they have reported included the following:

The use of electric shock treatment as punishment. . . .

ECT has been described as ideally suited to control hospital behavior.

It causes memory disturbance so that the patient will not be believed and cannot make an effective case if he complains to outside authorities.

It is extremely frightening.

It leads to increasing regression, disorganization, confusion, and "craziness" (which is temporary) and so makes patients who are not clearly psychiatric cases and not clearly committable very definitely psychiatric cases and committable.

ECT is now being given increasingly selectively except for small proprietary hospitals and for the large public mental hospitals in other countries. For example, in many countries of South America it is widely used in state hospitals.

Both ECT and the excessive use of tranquilizers have been described as methods some hospitals use to control patients.

The Talking Therapies—Psychoanalytic psychotherapy and psychoanalysis are other ways to attempt to modify behavior. Unlike ECT, drugs and psychosurgery, but like hypnotism and behavior modification techniques, these require the active cooperation of the subject or "patient;" they are sometimes called "the talking therapies." The aim of therapy is often said to be the freeing of talents and capabilities, especially the ability to have a wider range of options among which to choose, with the analyst having no stake in how these improved capabilities will be utilized. (In particular, the fact that the analyst has himself been analyzed is supposed to insure the objectivity of his point of view, although this claim for analysis is hard to document.) They depend on communications—largely verbal but the nonverbal interaction too is increasingly being recognized as an important aspect of the therapeutic relationship—and the use of these communications to mobilize thoughts, feelings, and memories. According to Freudian theory, disordered behavior or warped character structures can be modified as the individual recognizes facets of himself that have been repressed, as he faces nondefensively the anxiety-provoking thoughts and situations which have led to an overemphasis on defensive psychology, and as he learns new ways to order his inner psychical life (the relation of his Ego, Id, and Superego) and to relate to the outside world.

Psychoanalysis once pretended to be nonjudgmental and value free. Much of the

literature states or implies that the analyst is objective, free of a preconceived agenda, that he will not impose his concepts of "health" and "normality" on the subject. Some psychoanalytic writers now concede that both psychoanalysis and individual psychoanalysts operate by value systems which are both covert and overt (work is better than idleness, heterosexuality is better than homosexuality, freedom from anxiety is better than anxiety) and which often creates a conflict between patient and therapist. Some writers on this topic propose an altered and nontraditional role for psychoanalysis and psychoanalytic therapy in which it will promote radical rather than establishment life styles and free itself from accepted concepts of "health" and "normality."¹⁷

Behavior Modification—More recently there has been attention to psychological methods of behavior modification. Various types of reward and punishment mechanisms are utilized to augment some kinds of responses and to dampen out others. Although all kinds of behavior-modifying techniques, whether based on psychological stimuli (psychotherapy, behavior modification, hypnotism), or chemical stimuli (drugs), or somatic intervention (electrical stimulation, psychosurgery), involve similar ethical and moral questions, it is particularly in connection with the use of psychological means, which are seen to have a potential to mass produce "1984" or a "*Brave New World*," that we have such questions asked as, Who is to determine what kinds of behavior are good and what kinds of behavior are bad?, and How do we ascertain the value systems of the people who control behavior modification planning?

Psychosurgery and Electrical Stimulation of the Brain

The ultimate in sophisticated techniques of behavior change is actual surgical alteration of the brain. The surgical techniques can be considered with similar related methods of behavior change—electrode implantation which differs, however, in that it is reversible and so is more analogous to drug therapy—and the use of implantation of radium and other substances to modify brain tissue. We can consider these techniques from two differing points of view. We can look at the kinds of behavior which society wishes to alter—antisocial behavior, violent behavior, criminal behavior—and we can see whether these new techniques have value in altering these kinds of undesirable behavior. We can also look at these techniques from a civil rights or civil liberties point of view, and we can look to see what are the legal protections, what are the legal safeguards for someone whose behavior is considered subject to alteration, and we can ask whether the subjects of these techniques are in a position to understand the nature of the surgical intervention and so give valid informed consent. We can also ask if the subjects are in a position to refuse the procedure if they wish so that their informed consent is truly voluntary or if instead they are particularly vulnerable to coercive pressure.

Psychosurgery has recently come to the fore as a topic for both medicolegal and ethical debate. *Science*, the official publication of the American Association for the Advancement of Science, in its March 16, 1973 issue has a discussion of the pros and cons of such procedures under a headline, "Psychosurgery: Legitimate Therapy or Laundered Lobotomy?"¹⁸ The National Institute of Mental Health is in the preliminary stages of the preparation of a psychosurgery report; *Scope*, a Washington mental health newsletter, reports that NIMH feels that it wants to look more closely at psychosurgery but does not want to offend critics of the practice whose political impact is being felt. A preliminary draft has recommended that an outside medical group should study the safety and efficacy of psychosurgery; it states that this issue has become a lightning rod for other controversial issues, mass behavior control, the oppression and control of minority groups, but that in spite of this it should be studied further.¹⁹

Another indication of the interest in this topic is the list of new books on psychosurgery. Recent titles include: *The Surgical Control of Behavior*,²⁰ *Psychosurgery: Proceedings of the Second International Conference on Psychosurgery*,²¹ *Violence and the Brain*,²² and *Physical Control of the Mind—Toward a Psychocivilized Society*.²³ A second indicator is proposed legislation—two bills which have been introduced—to control psychosurgery. S.J. 86 (Ninety-third Congress, First Session) calls for a two-year moratorium on the use of Federal funds and facilities for projects involving psychosurgery; during the period of the moratorium the Secretary of Health, Education and Welfare would have the responsibility of compiling and analyzing data on a sufficient number of cases involving psychosurgery to present to Congress “his views and recommendations as to the circumstances, if any, when it is appropriate to perform psychosurgery.” H. 5371 would prohibit all forms of brain surgery designed to alter or control behavior. According to the author of the bill, Representative Louis Stokes (Democrat, Ohio), “My bill would outlaw this dangerous and immoral practice. It would fine doctors and institutions up to \$10,000 for each operation. A psychosurgery commission would collect the fine on behalf of the patients, and could go to court to obtain injunctions to stop performance of this operation. The commission would be made up of nine nonprofessional members, three of whom represent minority groups.”²⁴

The Rise and Fall of the Lobotomy—Peter Breggin, M.D., the Washington psychiatrist who has led the drive to outlaw or put a moratorium on psychosurgery, has described the first wave of psychosurgery which followed the publication of the Moniz technique. Between 40,000 and 50,000 operations using this technique and variants were done in the United States. Says Breggin:

No one knows for sure how many persons were mutilated in the ‘first wave.’ Walter Freeman, America’s dean of lobotomy, has given me a personal and probably reliable estimate of 50,000. Most chronic mental hospitals—and there are hundreds in the country—have a caseload of old lobotomy patients. The past literature contains hundreds of articles, and many lobotomists and hospitals accounted for several thousand at a time. Freeman, for example, says that he did about 4,000.²⁵

The basis for the lobotomy is the knowledge that the frontal lobes of the brain, approximately the anterior one-third of the brain, do not control such specific functions as speech, vision, or voluntary muscle movement but do seem to have some nonspecific functions concerning the experiencing of anxiety and initiative. Redlich and Freedman indicate that following the initial development of the technique by Moniz, neurosurgeons devised a number of procedures ranging from radical lobectomies (removing a lobe of the brain) to the transorbital lobotomy, popularized by Dr. Freeman, in which a long sharp instrument (shaped like an ice-pick) was inserted between the eyeball and the orbit so that no burr holes were required; the instrument would then be manipulated to sever some of the tracts of fibers in the brain that connect the cortex, subcortex, and other brain structures. If cortical tissue is removed, the proper term is lobotomy; if only white fibers are severed and no tissue is removed (for example, the transorbital procedure) the correct term should be leucotomy and the ice-pick like instrument is known as a leucotome. The transorbital procedure was devised by Freeman, a neurologist, and Watts, a neurosurgeon, but Freeman advocated it as being so simple that a psychiatrist alone could perform the operation, and he proceeded to perform many operations without surgical assistance and to train psychiatrists in the technique. Electroshock, which also could be administered by a psychiatrist by himself would immobilize the patient and could be used instead of other kinds of anesthesia, so the psychiatrist could be in complete control of the procedure.

Robert H. Moser, M.D., Clinical Professor of Medicine, University of Hawaii College of Medicine, describes the procedure graphically; he is reminiscing about the year 1946 and his “leaner days as a medical student.”²⁶

For ten bucks a night, my equally impecunious roommate and I would prostitute our embryonic medical talents and hire out as emergency-room "docs" (hacks?) at a nondescript midtown hospital.

After all the hell of a Saturday night, replete with auto catastrophes, stabbings, poisonings, precipitous deliveries, rat bites, appendectomies (under "supervision") etc., for a few dollars more, I functioned as chief headholder for a noted neurologist (famed for his knowledge of neuroanatomy) who specialized in "ice-pick" lobotomies. The patient would be wheeled into the operating room, where electrodes were strapped to his skull, and he would be zapped into temporary oblivion. During the post-ictal period, a carefully scored surgical "ice-pick" would be inserted at the inner canthus of the conjunctiva [of the eye], tapped gently with a hammer, wiggled, tapped, wiggled. He would awaken deprived of a significant chunk of his intellectual capacity. We did three or four within an hour or so—it was a bloodless and thoroughly horrifying experience. I helped only once, but I am told it happened once a week for a few years.

Redlich and Freedman in their text describe the lobotomy:²⁷

After the standard operation, the patient shows profound confusion. Most patients have a rather severe organic deficit state with disturbances of orientation, memory, initiative, and abstract thinking, which are of relatively short duration. During the immediate postoperative period, they are usually incontinent, a symptom which H. Houston Merritt called "Don't-give-a-damn incontinence." At this time, patients show such signs of cerebral lesions as unequal pupils and a positive Babinski sign, but even at this early stage, many patients show a lessening of preoperative tension and often euphoria. Within a few weeks, the massive signs of organic confusion disappear, and the patients' behavior becomes more normal. They are no longer incontinent; yet peculiarities in their toilet habits, such as endless sitting on the toilet, remain. This is probably just one of the expressions of a lack of initiative typical of this stage; it has also been considered an expression of aggressive infantile behavior.

In most reports, it is characteristically stressed that the lobotomized patient: (1) becomes less tense and anxious; (2) shows decreased incentive; (3) becomes cruder and less socially sensitive; and (4) does not deteriorate in gross fashion, but nonetheless shows some subtle evidence of a disturbance in his ability to think at abstract levels. The clinical improvement of agitated, extremely anxious, deluded, and severely obsessive-compulsive patients is probably caused by a reduction of anxiety and replacement of very pathological defense mechanisms by more acceptable and normal defenses.

Freeman and Watts and a number of British psychiatrists at one time pleaded for early referrals of schizophrenic patients for the operation, but today no one advocates early lobotomy of schizophrenics. We seriously question the use of lobotomies in any psychiatric syndrome except for desperate cases for whom all other interventions have failed. We oppose the use of lobotomy in the vast majority of depressive and neurotic patients. The method is also unsuitable for the treatment of sociopaths. An important indication for lobotomy, outside the field of psychiatry, is the relief of otherwise intractable organic pain.

Lobotomy is far from a harmless procedure. There is a fatality rate of from 2 to 4 percent; and postoperative complications such as cerebral hemorrhage and convulsive seizures are not infrequent. It is even more important to weigh the patient's relief from psychotic symptoms against the danger of the occurrence of such sequelae as tactlessness, insensitivity, crudeness, sloppiness, irresponsibility, and a rather general disregard for more refined social relations. Even if slight, these traits can be very annoying to relatives and friends, although the patient typically is unaware of them. One husband said of his lobotomized wife: "She's not driven by all the devils of hell any more, but she has become so sloppy and smelly!" Fortunately, more severe ethical aberrations in lobotomized patients are rare. In any case, it is important to involve lobotomized patients in a program of psychotherapy and rehabilitation, which gives some degree of assurance that some of the undesirable consequences are minimized.

Although these practices (which we will refer to by the term most frequently used,

lobotomy, in spite of our statement that leucotomy is the technically correct term for most procedures since they do not involve removal of tissue) largely passed from the scene in the 1950s, Walter Freeman and others continued to advocate them, standard psychiatric texts recommended them for rare cases where other therapeutic modalities had failed, and in some foreign countries, notably in Latin and South America, the lobotomy was done and probably continues to be done on a large scale in order to decrease the census of state hospitals by restoring chronic patients to a functioning state. One reason for the popularity of this procedure in poor countries is that tranquilizing drugs, the introduction of which led to the decline in popularity of the lobotomy, are a continuing cost; the lobotomy is an inexpensive and definitive procedure if performed in accordance with the Freeman-Watts technique. (Newer methods of psychosurgery are expensive, and the cost factor is one reason drugs rather than psychosurgery may achieve greater utilization as a means of behavior control.)

The decline in the popularity of the lobotomy following this "first wave" appears to be directly related to the development of tranquilizing drugs. In addition, results were very equivocal; its adherents cited cases of persons restored to function; its opponents cited cases of chronic regressed hospitalized patients.

Many sensitive psychiatrists saw the lobotomy as crude and cruel. One psychiatrist told me that during his residency he worked with a patient whom he thought was making considerable progress and had no longer a need to be hospitalized. When this patient told her admitting psychiatrist that she was ready to leave the hospital, he opposed this, and the resident finally concluded that this senior psychiatrist's loyalties lay more with the family, which preferred to have this member hospitalized, than with the patient who seemed to be making a bid for health. When the lady insisted on signing out of the hospital against the medical advice of the admitting psychiatrist, he threatened her with a lobotomy unless she withdrew her notice of intent to leave. He was persuaded to change his position and the lady was allowed to leave unlobotomized, but the incident emphasizes how the ability to impose such procedures on patients elevates the authority and the power of the psychiatrist.

The lobotomized patient raises interesting questions concerning criminal responsibility. The literature on this subject does not contain material on criminal acts done by lobotomized patients, and the impression is given that lobotomized patients are usually docile and law-abiding. Anecdotal material indicates that certainly some lobotomized patients have committed acts of violence; Patrick McGrath, M.D., Physician Superintendent of England's Broadmoor Hospital, recalls twenty patients he has seen in that institution who had previously received a leucotomy for schizophrenia and then had gone on to commit murder—in three cases of their mothers and in the remainder of readily identifiable delusional targets.²⁸

For a variety of reasons, then, the lobotomy largely disappeared from the American scene from the mid 1950s until the mid 1960s. When it returned it appeared with a difference—this was now much more selective and skilled psychosurgery designed to ablate very discrete portions of the brain; the objective was to change functions more selectively without producing so many side effects.

"*The Second Wave*"—"All the psychosurgeons who have written to me," says Dr. Breggin, "agree that the current rate is going up rapidly and that we are, in the words of one of them, approaching a 'second wave' of psychosurgery."²⁹

Dr. William B. Scoville, Associate Clinical Professor of Neurology at Yale, and President of the new International Society for Psychosurgery, who performs about two operations monthly, gives one reason for the resurgence of psychosurgery: In the 1950s and 1960s, he says, psychosurgery was held in abeyance until adequate trial had been made of shock treatment and newer drug therapies (especially the phenothiazines). These treatments have proved inadequate in the most intractable mental illnesses; repeated shock treatments have proven more destructive than highly selective surgical lesions.³⁰

Says *Science*:

The lobotomy has been abandoned in favor of interventions in various parts of the limbic system—the portion of the brain that rules the higher functions of emotion, self-awareness, and creativity. Stereotaxic surgical procedures, which enable electrodes to be inserted and directed to any part of the brain, have made operations highly selective. The trouble is, there is still no conclusive evidence correlating specific brain structures with specific behavior.

At present, probably no more than 500 psychosurgery operations per year are being performed in this country, by perhaps a dozen neurosurgeons. Nonetheless, the new ways scientists are finding to tamper with the nature of life itself, combined with the social awareness born of the political upheavals of the 1960s, have produced a considerably higher level of sensitivity than that which governed brain surgery two decades ago.

The controversy centers upon brain operations to control violent behavior allegedly associated with epilepsy, and criticism has been focused on a trio of doctors associated with Harvard University: William Sweet, chief of neurosurgery at Massachusetts General Hospital; Vernon Mark, neurosurgery chief at Boston City Hospital; and Frank Ervin, a psychiatrist and neurologist who is now on the faculty of the University of California at Los Angeles and associated with the newly formed Center for the Prevention of Violence there.

In 1967, these three wrote the *Journal of the American Medical Association* a letter that has now become a staple exhibit among the opponents of psychosurgery. The letter suggested that, while environmental and social factors undoubtedly played a role in the urban riots that were then raging through the country's metropolitan centers, another factor was being ignored: namely, the possible role played by brain disease—"focal lesions" that spur "senseless" assaultive and destructive behavior. There is a need, said the letter, for research and clinical studies to "pinpoint, diagnose, and treat those people with low violence thresholds before they contribute to further tragedies."

Around the same time, the group set up a Neuro Research Foundation at Boston City Hospital to carry out the appropriate studies and identify possible subjects for brain surgery. In 1970, through various mysterious maneuvers that no one seems to be able to explain, they persuaded Congress to direct the National Institute of Mental Health (NIMH) to award them a \$500,000 grant to carry on their work. Louis Wienkowski, director of NIMH extramural research, says NIMH was not prepared to support such activity and tried to fulfill congressional intent by using the money for animal studies. But the funds eventually found their way to the Sweet group in the form of a closely monitored contract, with the stipulation that no brain operations on human beings be performed. While Sweet's work was regarded with apprehension by the medical community, the law enforcement community has shown more enthusiasm: at about the same time, the foundation obtained a grant of \$108,000 from the Law Enforcement Assistance Administration of the Justice Department to test procedures for screening habitually violent male penitentiary inmates for brain damage.

Congressional interest, too, remained alive last year. The Senate Labor-Health, Education and Welfare appropriations subcommittee, headed by Warren Magnuson (D-Wash.), was so impressed with Sweet's testimony on the need to investigate the relationship between violence and brain disease that they stuck a \$1 million line item in the budget of the National Institute for Neurological Diseases and Stroke (NINDS) to be applied to research in this area. The appropriation was killed when President Nixon vetoed the Labor-HEW bill last September, and its resurrection is unlikely.³¹

Science goes on to say that "the issue has become highly confused, partly because discussions of psychosurgery fail to differentiate among various procedures and the purposes for which they are used." The article then goes on to describe specific techniques.

The cingulotomy is probably the most prevalent kind of operation, according to Paul Fedio of NINDS [the government's National Institute for Neurological Diseases and Stroke.] This is not performed for violence-associated disorders and is probably

psychosurgery in its purest form because it is done for behavioral disorders in persons with no apparent brain pathology. H. T. Ballantine of Massachusetts General Hospital [Harvard connected and described by Breggin as "perhaps the most prestigious general hospital in the world"] is probably the most prolific cingulotomist, and he does it for alleviation of intractable pain as well as for various "neuropsychiatric illnesses" such as depression, anxiety states, and obsessional neuroses that have not proved amenable to other kinds of treatment.

Then there is the thalamotomy, which was used in the past to curb the psychomotor effects of Parkinson's disease, and has since been replaced by the drug L-dopa. Thalamotomies are still in the running, though, with O. J. Andy using this procedure for persons suffering from "hyper-responsive syndrome," a vaguely defined disorder marked by violence and total unmanageability. Andy says all his patients suffer from "structural pathology" of the brain.

Finally (for the purpose of this article), there is the amygdalotomy. Fedio says this procedure was originally developed to curb epilepsy. Sweet and his colleagues are extending this procedure to people with diagnosable brain damage—who suffer outbursts of uncontrollable violence, but who do not necessarily have epilepsy. One problem is that the connection between violence and epilepsy is extremely murky. Furthermore, says Fedio, there is no concrete evidence that an individual's violent behavior is associated with the specific damage that has been located in his brain.³²

The controversy about psychosurgery became less abstract when it was revealed in 1971 that three prisoners at Vacaville (California) Prison had been the objects of psychosurgery in 1968 "to have violent seizures controlled."

The California prison system contains prison adjustment centers to house the most violent prisoners; Vacaville Prison is a super adjustment center for prisoners who are too difficult for other adjustment centers. Its title is the Maximum Psychiatric Diagnostic Unit; its functions are the diagnosis and treatment of prisoners and also research on prison volunteers. (The California Department of Corrections has sponsored prison research using prisoner volunteers for United States Army studies on diseases endemic to Vietnam, on a vaccine for the plague, on the toxicity of DDT, organic phosphates, and other chemicals.)

In 1971 the California Department of Corrections had drawn up a proposal and sought funds, \$300,000 from the Department of Justice's Law Enforcement Assistance Administration (LEAA) and \$189,000 from the state, for experimentation 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 that could serve as the focus for violent behavior outbreaks. If these areas were "verified" as the source of aggressive behavior, the prisoners would be asked to volunteer for neurosurgery.

In November, 1971, Edward Opton, Jr., senior research psychologist at the Wright Institute, Berkeley, California, was asked to sit in on a discussion of the proposal; he objected to the experiment when it was revealed that the proposals called for psychosurgical experimentation on prisoners and also referred to the possible pharmacological ("chemical") castration of violent prisoners. It was subsequent to this that the information was first made public concerning the three 1968 operations.

Professor Michael Shapiro and his law students from the University of Southern California led a fight, waged in legislative hearings and in newspapers, that led to the abandonment of the project. Said Opton, "The proposal to continue this work has been shelved for the time being, probably because of the publicity stink that followed the hearings."³³

Although psychosurgery continues to be performed in the United States at a rate of from 400-600 cases a year and is probably increasing, and is becoming popular in many foreign centers, Japan, India, Canada, Australia, England, Norway, Finland, and West Germany (but not in Russia where it is outlawed), only two incidents involving individual

patients (in addition to the Vacaville proposal and psychosurgery programs sponsored by Mississippi neurosurgeon Orlando J. Andy and the Veterans Administration) have come to public attention.

The Louis Smith case involves issues of (1) psychosurgery; (2) informed consent; (3) the ability of psychiatrists and others to predict future dangerousness; and (4) special criminal psychopath statutes.

In 1970 Dr. Jacques Gottlieb and Dr. Ernst Rodin, both associated with the Lafayette Clinic, which is the psychiatric teaching hospital of Wayne State University (Michigan) proposed a study of methods to treat uncontrollable aggression, both surgically and by use of experimental drug therapy. The Michigan State legislature appropriated \$228,400 for the research project which was to be a comparison of the two methods of controlling behavior. The project was to include 24 state mental patients; the goal was to restore them to society. The subjects were all to be nonpsychotic brain damaged males over 25 with I.Q.s over 80, hospitalized for at least five years, who had been subjected unsuccessfully to all other known forms of treatment, who remembered their violent acts and felt remorse about them, and who were capable of understanding and deciding whether they wanted to undergo the treatment.³⁴

[A semantic analysis reveals how vague and ambiguous many of the criteria for this project were. What is the definition of "brain damaged"? What is the definition of "all other known forms of treatment"?—does this concept include individual psychotherapy, group therapy, milieu therapy, vocational and motivational therapy, electroshock therapy, chemotherapy, or whatever? Could it be demonstrated that the Ionia State Hospital patients had received the same varieties of treatment, quality of treatment, and quantity of treatment that a private patient at Chestnut Lodge, the Institute for Living, the Institute of the Pennsylvania Hospital, or Austen Riggs (all well-known private hospitals, noted for individual and expensive methods of treatment) would receive? What is the definition of "capable of understanding and deciding" and to what extent does the coercive aspect of the offer ("be a part of this experiment and possibly go home; refuse and stay in this hospital for, quite possibly, the rest of your life") make it impossible to come to a truly voluntary decision?]

The first subject chosen was a 36-year-old man who had been committed to Ionia State Hospital for 18 years; at age 17 he had allegedly murdered and then raped a student nurse at Kalamazoo State Hospital, another Michigan institution. (The newspaper reports are vague about the circumstances of this crime. Smith lived in Kalamazoo. Was he a patient at the hospital when the crime was committed?)

In the recent newspaper accounts, an attempt was made to withhold the identity of Smith. He was referred to as Mr. L. in *The New York Times*, and John Doe in other published accounts; after a Kalamazoo newspaper identified him by name, the attempt at confidentiality was dropped.³⁵

At 18 on the advice of his lawyer before trial on the murder-rape charge (the rape was alleged to have followed the murder) he had asked to be committed to a state hospital, the statute then in force which has been repealed by the legislature in 1968 (raising important questions about the right of the state to hold Smith and others who had been committed under the law) provided for the dismissal of all pending criminal charges on the medical determination of criminal psychopathy and a commitment to the state hospital.

Criminal or sexual psychopath statutes are sometimes considered liberal legislation; they remove the defendant from the jurisdiction of the criminal law system and emphasize the mental illness aspects of the individual who is officially now "mad" rather than "bad." The argument can be made that this is a humane approach to behaviorally deviant individuals, but civil-rights-minded lawyers have pointed out in recent years (1) that medical men (psychiatrists) are asked to diagnose defendants and place labels upon them that are not found in the medical nomenclature—sexual

psychopath, sexual offender, defective delinquent, criminal psychopath, habitual offender; (2) that this results in a confusion of therapeutic and criminological goals (are the criminal psychopaths hospitalized for their own protection? the protection of the state? to be "cured"?); and (3) the indeterminacy of the resulting hospitalization, for as long a period as the psychiatric staff thinks necessary, may be a serious violation of due process safeguards.³⁶ For these and perhaps other reasons, the law was repealed in 1968 and all except a few dozen patients committed under the statute were sent home. Those who were retained were kept because in the opinion of the hospital staff they were still dangerous. Smith had not been violent since his commitment but in justification of the decision not to release, the staff pointed out that he had sometimes asked to be put into isolation because he feared his violent impulses.³⁷

When the subject of the experimental psychosurgery was raised, both Louis Smith and his parents were willing and gave consent; at that time there appeared to be no other way in which freedom might be obtained from the hospital staff. Undesirable side effects, including possible death, were explained. Dr. Rodin explained to the patient and his family that ten electrodes were to be implanted deep within Smith's brain to see if abnormalities could be found that were linked with the patient's outbursts of violent behavior. The consent form which Smith and his parents signed on October 27, 1972 read: "Since conventional treatment efforts over a period of several years have not enabled me to control my outbursts of rage and anti-social behavior, I submit my application to be a subject on a research project which may offer me a form of effective therapy . . . if the doctors determine that it can be done so, without risk of side effects . . . I realize that any operation on the brain carries a number of risks which may be slight, but could be potentially serious . . . It is also possible that I might not survive the operation." (The terms "side effects" and "risks" are apparently used here with two different meanings: the doctors must determine that the operation would not cause other behavioral changes besides the elimination of rage and anti-social behavior, i.e., there must be no possibility of loss of judgment, reason, initiative. But any operation does carry with it the possibility of death from anesthesia, death under the knife, and other medical (in contrast to behavioral changes). With the concurrence of two committees, one to review the selection of experimental subjects and the other to guard the interests of the patient, the procedure was scheduled for January 15, 1973.

The second committee, designed to guard the interests of the patient, consisted of three members, a lawyer, a certified public accountant, and a Roman Catholic monsignor. By a vote of 2-1, the committee approved the consent that had been obtained; the accountant and the monsignor had no question; the lawyer, who was overruled, believed that under the conditions in which Smith found himself, the informed consent could not be truly voluntary.

Before any electrodes could be implanted, Gabe Kaimowitz, a Michigan Legal Services lawyer and a member of the Medical Committee for Human Rights, found out about it, brought this to the attention of the public through the press, and filed a suit on behalf of John Doe (Louis Smith) and at least 23 other patients. Among the contentions were that the patients were being held without authority, that no person involuntarily detained is capable of giving truly informed consent, and the use of public funds for the project was inappropriate because psychosurgery is contrary to public policy.

One difficult question: criminal charges had been dropped under the authority of the criminal psychopath statute now repealed. Could criminal charges be revived? This is a question that has not been in issue.

With preparation for the procedure completed, the Lafayette Clinic was ready to proceed with the experiment. Reports *Psychiatric News*:³⁸

At this point, Gabe Kaimowitz, representing the Chicago-based Medical Committee for Human Rights, filed a brief asking the Wayne County Circuit Court to intervene.

An injunction against starting the experiment was issued and a pre-trial hearing to determine the future of the entire project was held in early March.

The petitioner's suit contends that the patients at Ionia State (Hospital) held under the repealed sexual psychopath statute are being unconstitutionally detained and should be released; that no person involuntarily detained could consent to any form of experimentation, and that psychosurgery, in any case, is against public policy and must be stopped.

In response to the suit, the Michigan Department of Mental Health cancelled funds for the project, thus ending the hopes of the Lafayette Clinic of conducting the experiment.

With plans for the experiment scrapped, defendants have argued that the issue was moot. But the court ruled otherwise and ordered a full hearing on two issues: after the failure of established therapies and with the prospect of indefinite detention, can an adult or his guardian, if he is detained by the state, give an informed, voluntary consent to an experiment that may enhance his chances for discharge? If the answer to the first is "yes," is it then legal to conduct experimental brain surgery on a person involuntarily detained by the department of mental health?

The court is still also deliberating a motion for release of the plaintiffs because of the unconstitutionality of the statute under which they are held.

Essentially, the issues divide into two opposing viewpoints: On the one side are the petitioners for these rights of Mr. Smith and the plaintiff class whose case has been stated. On the other side are those who claim that Mr. Smith is uncontrollably violent, that he is a man who will be indefinitely detained in a mental hospital because of an inability to restrain violent impulses and who cannot be treated by conventional modalities. Is it ethical to deprive him of a treatment modality which could temper these impulses and allow his release into society? they ask.

In the middle are Mr. Smith and his fellow inmates, who will have the questions that were posed for them by the medical committee for human rights, the Michigan legal services, and the American Orthopsychiatric Association answered by the court sometime this month.

On March 23, a three-judge county court panel ruled that John Doe (Smith) was being held unconstitutionally; it ordered his attorney to prepare a summary of his treatment history, a report on his present condition, and suggestions on whether he should be released outright or recommitted through a civil procedure. The broader issue of whether or not psychosurgery can be performed on involuntarily hospitalized patients remained undecided.

On April 9 the three-judge panel gave him his freedom by signing an order for his release; this had been held up pending the hearing of testimony on whether it was safe to release Smith and to evaluate plans made for his return to society.

Dr. E. Gordon Yudashkin, the director of the Michigan Department of Health, testified that he did not feel he could release Smith and 17 other originally committed under the criminal psychopath act because he considered them dangerous, but on the other hand he conceded that they were being held unconstitutionally in view of the March 23 ruling.

The judges were more impressed—perhaps because it helped them out of a civil rights conflict—by the testimony of Dr. Andrew Watson, a legal psychiatrist from the University of Michigan; Dr. Watson had testified that he had read Smith's hospital record and had interviewed him for a total of five hours and that he felt Smith was safe to be released. He testified that much of the aggressive behavior that Smith had shown in Ionia State Hospital had been the result of the frustration at being in the Ionia State Hospital. However, one major area of uncertainty is clearly the applicability of observations concerning behavior in a rigidly supervised situation, like a mental hospital, to an outside unsupervised situation. With mental patients who have not committed crimes, the best test of ability to do well in unsupervised situations is to allow the patient increasing doses of freedom—overnights, weekend passes, furloughs; with patients who have committed serious crimes such increasing doses of

freedom are not often prescribed—because the staff feels the patient is still dangerous or because the staff is not convinced the patient is dangerous but does not want to run the risk of a wrong decision. It is easier for Watson, who has no legal responsibility for Smith's subsequent actions, to declare him safe than for Yudashkin who in some circumstances might be civilly liable for releasing a dangerous patient and who bears public responsibility by virtue of his state job and attention focused on him by legislature and press.

Smith's attorney, Robert A. Burt, like Watson a professor at the University of Michigan Law School, told the court that he had found a halfway house for Smith. Smith testified that after 18 years of confinement he is wary of going into society and would like to do it gradually. He signed a voluntary confinement order that allowed the hospital to keep him for five more days.³⁹

The decision on whether psychosurgery was an acceptable procedure had still not been handed down when *The New York Times* on June 6 printed a followup story:

DETROIT, June 5—Louis Smith, the formerly anonymous mental patient at the center of a precedent-setting court case here that is examining the ethics of psychosurgery, has begun a new life and become a public figure during his month or so of freedom.

He has a job, has bought a car, is preparing to get an apartment and is saving his money so that he can go to a community college to further his training in commercial art and printing.

And while he is building his new life after confinement for 18 years in mental hospitals for killing and raping a nurse when he was 19, three judges of the Wayne County Circuit are beginning the task of going through 1,700 pages of transcript and five thick briefs in a case that has profound implications for medical research in the nation. The judges heard the final arguments last week in a case brought on behalf of Smith in which they are being asked to rule on whether there should be a moratorium on psychosurgery in Michigan and whether patients' involuntarily confined in mental hospitals in the state can consent to experimentation on the brain.

Both sides in the case stress in their summations that whatever the decision it will have a nationwide impact in medical experimentation, since the court is dealing with issues that have so far rarely been touched by the judicial system.

In its broadest terms, the case poses questions that have become more pressing as scientists probe ever more deeply into human behavior.

How much freedom should be granted to scientists in their pursuit of knowledge? At what point should outside institutions such as the courts step in at all—to protect individual rights in the human experiments that are often necessary to advance knowledge? (*The New York Times*, June 6, 1973, 18.)⁴⁰

A story datelined Detroit on July 12 gave the court's final verdict:

Experimental brain surgery cannot be used in an attempt to eliminate antisocial behavior in patients involuntarily confined in state mental institutions, a three-man judge panel ruled.

In a decision expected to set a national precedent, the Wayne County Circuit Court judges said consent given by the patient for the psychosurgery could not be considered voluntary because his alternative was continued confinement.

Dr. E. G. Yudashkin, director of the State Department of Mental Health, said the state does not plan to appeal the ruling. . . .

"Involuntarily confined patients cannot reason as equals with the doctors and administrators over whether they should undergo psychosurgery," the panel said in a 42-page decision. First Amendment freedoms of the patient [provide that] the "government has no power or right to control men's minds, thoughts and expressions.

"If the First Amendment protects the freedom to express ideas, it necessarily follows that it must protect the freedom to generate ideas."⁴¹

Freedom of speech seems an unlikely rationale for the prohibition of involuntary psychosurgery, particularly in a period when the Supreme Court has given neighbor-

hood standards the right to determine what is obscene; there is no absolute freedom of speech. The same rationale could be used to outlaw the involuntary administration of tranquilizers or the use of electroconvulsive therapy, each of which alter, even if only reversibly, the ability to generate ideas. And psychiatric hospital commitment could perhaps be outlawed on the same rationale that by shutting a patient up in a mental hospital it abridges his freedom of speech. Imprisonment as a punishment for crime is equally abridging to the freedom of speech. Could capital punishment, which definitely interferes with freedom of speech and the freedom to generate ideas, be abolished on First Amendment as well as Eighth Amendment grounds? The Eighth Amendment prohibition of cruel and unusual punishment, and/or the concept of the emerging right of privacy might have been better rationales for the decision to prohibit psychosurgery.

The second case involving psychosurgery for an individual patient raises additional issues because the patient's parents are more actively pushing the procedure and because unlike Smith there is apparently little possibility that the patient can be returned to the community without some demonstrated change in behavior. Although the surgery was recommended for Smith, the final decision was to restore him to society without surgery; in this case no one feels the patient can return to society as he is now.

John Gavin, Jr., a Virginia mental patient, has been in and out of mental hospitals since he was 17; he is now 22. When he was 15 he was taken by his parents to Johns Hopkins Medical Center; his mother described him at that time as a loner, an introvert, who would not go to school. He was diagnosed at Johns Hopkins with the frequently used but essentially meaningless diagnosis of "adjustment reaction of adolescence."

According to his mother, in 1968, aged 17, he was admitted to Western State Hospital (Virginia) after the family discovered that he had been using LSD (lysergic acid diethylamide), the hallucinogenic drug. Mrs. Gavin says that her son has spent about half of each year since then in the hospital and the rest of his time at home on convalescent leave.

On October 31, 1972, while home on convalescent leave, he was in Brentano's Bookstore at Seven Corners, Virginia, a Washington suburb; his mother worked in a department store in the same shopping complex. "When he left," according to a Brentano representative, "someone smelled smoke and called the fire department." His mother states that he had set fire to a book on witchcraft. At a hearing before a Fairfax County Court judge, Gavin approached the bench and said, "Hi, brother! Praise the Lord." The judge summarily remanded Gavin back to the custody of Western State Hospital.

These are the events of the Gavin case, as described in *The Washington Post*.⁴²

In February Gavin had blinded himself in one eye and badly injured the other (there are conflicting reports, either by burning himself with a cigarette or smashing his head against a wall). The parents were told that Gavin had the diagnosis of schizophrenia, and that because drugs and other treatment had failed to help him psychosurgery was the only way to halt his self-destructiveness.

The Medical College of Virginia neurosurgeon who was to have performed the operation, Dr. Donald P. Becker, neurosurgery chairman, has said:

"I personally consider this operation only when a patient's life is so miserable for himself and those in his environment that there is no alternative. Furthermore, I insist on psychiatric evaluations by three separate board-certified psychiatrists.

"This patient has been very thoroughly evaluated by at least three respected and careful psychiatrists at the University of Virginia and at Western State Hospital. His family has been thoroughly informed and the patient has given an informed consent."

Said Dr. Becker, "This is one of the severe, intractable cases where this kind of surgery may be appropriate."

On March 26 *The Washington Post* received a telephone call from a man who

identified himself only as a "former public information officer for one of the Services" (Gavin's mother said he was a fellow patient of her son) asking the newspaper to investigate the legality of the proposed surgery, scheduled for March 27, and whether it would violate any of the rights of the patient.

Telephone calls had also been received by the Virginia Attorney General's office, and the Medical College of Virginia Hospital. The calls triggered a state investigation into the legality of the operation, and the surgery was cancelled. The patient's mother defended the need for surgery with tears in her eyes: "We had to do it. We couldn't stand to see him tear himself apart piece by piece."

This was to have been the first such operation at the Medical College of Virginia. Dr. Becker when he was chief neurosurgeon at a Los Angeles General Hospital (Harbor General) and a professor at the University of California at Los Angeles had done "something less than five" such procedures.

"A telephone call in a matter like this," said John F. Imrie, Medical College of Virginia's vice president of hospitals, "naturally makes us want to inquire very carefully into the matter of informed consent and the patient's competence. He has never been declared incompetent—that would have to be done by a court of record."

"We want to make sure the hospital is proceeding appropriately," said William Crews, Virginia Assistant Attorney General. "I do think the doctor was proceeding by appropriate methods, but I want to be sure about the patient's competence and consent. I hope to give the hospital some firmer guidance Tuesday."

Mrs. Gavin expressed surprise when it was suggested that their consent for their son's operation might not have any legal meaning. She said that she assumed doctors would not recommend an operation that was not legal.

John Gavin, Sr., the patient's father, a plumbing superintendent, said, "This is too much. I come home from work and all this. I just don't know what to do."

The operation apparently has not been rescheduled, but in the meantime two other instances of mass psychosurgery programs have received publicity.

Dr. Peter Breggin says that the chief United States practitioner on psychosurgery for children is Dr. Orlando J. Andy of the University of Mississippi. Breggin says that Andy has told him that most of the 30 or 40 psychosurgical operations that he has performed have been on children, the youngest being age 7. Andy has refused to reply to this charge: "I will give my reports in scientific journals and at meetings," he has said explaining his refusal to talk to newspapermen.⁴³ The charge has been made that Andy has not had guidelines or a proper review committee procedure, that there have not been exact diagnostic criteria for patient selection, that some or perhaps many of these patients have had no other psychiatric diagnosis except hyperactivity (or "hyperreactivity") and "uncontrollability," and that most of them have been poor, black, and young. An example is given in *Mental Health Scope*, a weekly newsletter from Washington, which interviewed Dr. Andy by phone as part of a survey after the Michigan and Virginia cases.⁴⁴ The headline: SURGERY STALLED IN 2 STATES, CONSIDERED IN A THIRD:

In Mississippi, Dr. Orlando J. Andy, a neurosurgeon, told *Mental Health Scope* that he is currently considering psychosurgery for a 14-year old boy who had been referred to him by a psychiatrist. The boy, who Andy described as "wild" and "uncontrollable," has been in mental hospitals in the past, but is currently living at home.

Andy said he has not decided whether to undertake the surgery. He said he has not conducted interviews with the boy yet, but has spoken to the parents and the psychiatrist. On the phone, he said he could not remember the exact diagnoses that had been given the boy, but said there had been "several." The psychiatrist has recommended that the boy be placed permanently in a mental institution.

Andy maintained that he would make his recommendations to a newly created

board at the University of Mississippi established to pass on his and other operations conducted at medical school facilities.

Dr. Willard Gaylin, psychiatrist and president of the Institute for Society, Ethics and the Life Sciences has criticized Andy for "an almost total absence of protocol in his own research. . . ."45 In a paper on a series of 30 of his cases, Andy reported three deaths.46

The Veterans Administration series of psychosurgery cases represents a turnabout by government officials who at one time denied that VA hospitals perform brain surgery to modify undesirable behavior (April, 1973) but who later stated that 20 (and still later reduced that number to 16) such operations had been performed between 1960 and 1971 and that four hospitals are currently involved in psychosurgery (Durham, N.C., Long Beach, California, Minneapolis, Minnesota, Syracuse, New York).47 On October 20, 1972, the Deputy Chief Medical Director of the VA had issued a series of regulations outlining the process of securing approval for all cases of Surgery for Abnormal Behavior.48

Dr. Marc C. Musser, chief medical director for the VA, told an Associated Press reporter in June that the VA, as the result of a study, tightened the standards for the performance of Surgery for Abnormal Behavior in February 1973 and none of the four hospitals authorized to do such surgery had asked the VA Central Office for permission since.49

The Senate Health subcommittee (Chairman, Edward Kennedy, D-Massachusetts) of the Senate Committee on Labor and Public Welfare has announced plans for a Senate inquiry into the brain surgery performed by the VA.50

Surgical and Chemical Castration—An anonymous editorial in *Lancet*, the journal of the British Medical Association, in 1969 recommends brain surgery as a cure for sexual disorders; German investigators had devised an operation to produce "a distinct and sustained reduction in the level of sexual drive" of three male homosexuals by destroying a portion of the hypothalamus. The editorial points out that voluntary consent should be obtained and with this qualification recommends the procedure: castration is "open to question on ethical grounds" while hypothalamotomy is not.51

Eugenic sterilization, to prevent certain categories of individuals from having children, has been held constitutional in the famous case of *Buck v. Bell*⁵² and in numerous other decisions; state courts have found that it can appropriately be applied to some prisoners when it is considered a health measure and therefore non-punitive;⁵³ although two California judges ordered dozens of castrations in the 1940s, authorities believe that there had been few if any castrations for behavioral change for at least a twenty-year period.⁵⁴

The main attack on eugenic sterilization for criminals has been on the question of equal protection. In *Skinner v. Oklahoma*,⁵⁵ the United States Supreme Court held an Oklahoma statute unconstitutional which provided for the sterilization of some habitual criminals but exempted embezzlement, violation of prohibition laws, and political offenses (undoubtedly the three crimes most likely at that time to be committed by members of the Oklahoma state legislature). Skinner had been convicted once of chicken stealing and twice of armed robbery; larceny and embezzlement are intrinsically similar, the court said, and when the law "lays an unequal hand on those who have committed intrinsically the same quality of offense and sterilize one and not the other, it has made as invidious a discrimination as if it had selected a particular race or nationality for oppressive treatment."

Eugenic sterilization differs from castration, either surgical or pharmacological, in that it is designed to prevent reproduction without diminution of sexual urges; the rationale for castration is that it reduces the possibility of sexual crimes.

Castration as a means of modifying behavior is practiced, not on a large scale, in

many countries of Western Europe, particularly Denmark and West Germany. When Georg K. Sturup came to the United States to receive the Isaac Ray award for a distinguished contribution to legal psychiatry, he told in his award lecture series of the good results with castration at the institution he heads, the famous Herstedvester in Denmark, noted for its individualized and humane treatment of the mentally abnormal offender.⁵⁶ The audience, mostly psychiatrists, (including legal psychiatrists), psychologists, and social workers, was unaware until that time of Sturup's advocacy of castration.

The only recent American instance occurred in Denver in 1971.⁵⁷ Most of the issues that are raised by psychosurgery are raised by castration to modify behavior: informed consent, voluntary consent, the rights of the individual versus the rights of the state, the ethical questions concerning an "opening wedge" (whether a practice which may seem permissible in a certain context should be considered not permissible because it may set a precedent and lead to wider applications of the technique), the two meanings of freedom (proponents of the surgery advocate it as a means of freeing the individual who otherwise would be jailed or hospitalized, but opponents of the surgery see it as an attack on the freedom of the individual and the concept of free will), the procedural safeguards that should be utilized, the question of decision-making power delegated from the judiciary and the correctional system to the physician, and finally, the question of whether this is an effective method of dealing with the problem at issue.

The Denver case involved a man apprehended for molesting a young girl who admitted to molesting between 400 and 500 girls under 12 years of age during his lifetime. On the advice of a Denver surgeon who had written a medical journal report citing European success with this procedure,⁵⁸ the patient was allowed to plead guilty to two charges with 12 other counts being dropped and sentence was deferred on the condition that the patient voluntarily consent to surgical castration. Five months after the castration, doctors reported that his emotional state had much improved, he no longer had outbursts of crying; he was being seen daily as an outpatient at a mental health center and he was holding down a job.⁵⁹

The Colorado Medical Society and the Colorado Psychiatric Society both announced they might investigate this case, but no reports have been issued to the public. United Press International gave these additional details:⁶⁰

The man said the castration had cured him and stopped his sex crimes.

The operation was performed at the man's request in Denver General Hospital December 8, 1971, with the approval of surgical department administrators. It was the first recorded instance of castration in Colorado performed solely to modify behavior (castration is performed for medical indications, particularly cancer).

An unidentified Denver psychiatrist stated that the major part of the psychiatric community felt horrified about the news of the castration, but District Judge Robert E. McLean defended the operation on the ground that it was entirely voluntary on the part of the subject. "This man sat here in court under oath and testified that he had molested between 400 and 500 little girls under 12 years of age during his lifetime," the judge said. "He said, 'If you release me, I'll tell you. I'll go right out and do it again because I can't help it.'"

Denver attorney Martin Frickey, representing the unidentified patient, said the castration was voluntary and that "it had brought about a real cure for this man."

Dr. Horace E. Campbell, the surgeon who has written the article recommending the procedure, did not perform the operation. "I didn't want to be financially connected with the case, so I found a local urologist to do the operation." (Does this division of responsibility clarify or obscure ethical issues?) "It very definitely helped this guy. He's much less aggressive and much happier now. He's holding down a job." (But the reports do not indicate he had previously not held down a job; the only inferences concerning this can be drawn from the statement that his neighbors considered him

a model citizen.) "He more or less regrets the impotence, which we expected, but that's a small loss compared with a life sentence. Psychiatrists just don't want to face the fact that an organic approach can work where their methods fail." (The patient was said not to have been helped by psychoanalysis.)

The president of the Colorado Psychiatric Society said, "It will be at least a year before we can draw any conclusions. But it raises very serious ethical questions."

The president of the Colorado Medical Society was less concerned: "Considering the voluntary nature of the operation I am not at all sure the matter will be carried any further."

It should be noted that the alternative to castration for this man was probably a lifetime jail sentence or hospital commitment.

Dr. Fritz Roeder, a West German neurosurgeon who uses a coagulation electrode to destroy part of the hypothalamus as a cure for homosexuality, feels that psychosurgery not only is a better approach to the problem of the sexual deviant because it does not have some of the psychological effects, such as depression and feelings of inferiority, of surgical or chemical castration (use of hormones to feminize and to reduce sexual drive) but that it also has the advantage of eliminating forensic and juridical problems that are raised by surgical and chemical castration; he states that in the German Federal Republic about 17,000 persons are indicted annually for improper conduct with children and male juveniles, and the percentage of homosexual men in the population is 4-6%.⁶¹

In spite of Dr. Roeder's denial of juridical problems, the analogies between surgical castration, destruction of the "sex behavior center" of the brain, and other forms of psychosurgery seem to be great; all these procedures raise similar problems. Chemical castration raises fewer problems because of its reversibility. West German researchers have announced the use of an experimental drug called SH 80714, a synthetic anti-androgen, "which may make castration absolutely unnecessary, even though a West German law concerning sex offenders, passed in 1970, has made castration legal as a means to prevent repeated offenses by hardened sex criminals."⁶²

Forty male prisoners at Wormwood Scrubs Prison in London have had pellets of estradiol implanted under their skins in order to prevent the repetition of sexual offenses. The drug could have been taken orally, but the implantation is effective for a three month period and allows more control over the patient. Two years of observation showed a marked decline in patient's abnormal tendencies, according to prison officials who stated that this is no longer an experimental approach to sex offenders but can be considered positive treatment; *Science News* commented that this is likely to become standard practice in British prisons.⁶³

A controversy published in the London *Times* dealt with the propriety of using benperidol, not a sex hormone but a relative of the tranquilizers, to control sexual libido in prisoners. The controversy erupted when the compound was licensed under the Medicines Act. The charge was made that the prisoners were being used as guinea pigs, that the label of benevolent treatment should not be allowed to make legitimate attempts at control of body, mind, and sexual feelings, and that prison populations were under special pressures which negated the possibility of informed consent. The prison psychiatrist who conducted the trial stated that it had only been offered to intelligent prisoners, that the drug had to be taken orally and thus required cooperation, and the men all knew the effects of the drug. Only half of those who took the drug were in detention; the rest were on probation attending a hospital outpatient clinic. The *Times* stated that the use of benperidol seems less drastic than the brain surgery and surgical or chemical castration used in other countries, and that for men afflicted with abnormal sexual desire the risks of drug treatment appear preferable to a lifetime of anxiety that they may molest a child or commit a violent assault. On the other hand, it questioned the right of society to set up standards of behavior and

then to assert that all nonconformists need treatment, and especially so when the subject is a prison inmate. It proposed that such treatment only be offered when its effects are reversible and only to men with a definite date of release so that they will not be subject to coercion to consent. It proposed a group of independent experts to supervise the conditions of treatment to ensure no violations of the principle of informed consent.⁶⁴

Eugenic Sterilization Compared to Castration—Eugenic sterilization, not ostensibly performed for punitive purposes, is sometimes seen as a method of behavior control. Morton Birnbaum has described the practice of “institutional sterilization,” the institutionalization of low intelligence sexually active females during their procreative period.⁶⁵ Pressure is then sometimes exerted upon them to “voluntarily” accede to sterilization as an alternative to institutionalization. Institutionalization to control sexual behavior and sterilization to control not behavior but the possibility of pregnancy resulting from that behavior are usually discussed under the topic of Eugenic Sterilization, not Behavior Control, although these do represent controls of behavior.⁶⁶

Other Methods of Psychosurgery—A variety of new techniques are similar to psychosurgery but depend on electrocoagulation, radiation, ultrasonic bombardment or some other method of destroying brain tissue rather than the surgical knife or scalpel. Peter Lindstrom has developed a Prefrontal Sonic Treatment which combines both sound intensity and radiation; it has been used on chronic schizophrenics in the California state hospital system. He has treated more than 500 patients.⁶⁷ Implantation of radioactive materials, particularly Yttrium 90, has also been used as well as the application of chemicals at particular brain sites to destroy brain tissue.

Electrical Stimulation of the Brain—The most interesting technique is electrode implantation pioneered by Delgado at Yale and Heath at Tulane. Delgado has demonstrated movies of a violent, madly charging bull with electrodes implanted; the activation of an electric current stops the bull in his wild charge and turns him into a docile Ferdinand. Electrical stimulation of the brain can be combined with psychosurgery; the precise spot to extirpate is pinpointed by testing with electrical stimulation at various points. The electrode implantation can be used instead of psychosurgery; an advantage would be its reversibility. Electrode implantation raises great threat of the ability of one person to control the pain and pleasure as well as specific behavior centers and thus could give much greater control over another individual than psychosurgery. The possibility of stimulating pleasure centers and making the subject addicted to this kind of stimulation, much as a subject can be addicted to methadone, has been described by J. Anthony Deutsch:⁶⁸

Anyone who has observed electrical stimulation of the brain in the laboratory knows why it generates controversy. We watch the rat continually press a lever that will send electrical current through its brain; it will do virtually anything we demand in order to get the stimulation—run mazes, press bars, cross highly charged grids. If we give the rat unlimited access to the switch that allows current to flow into the electrodes in its head, it will press the bar thousands of times—perhaps for 16 hours a day—until it is exhausted. Nothing deters it from the ecstatic frenzy, not even food, which a hungry male rat prefers to a receptive female.

This extraordinary phenomenon was the serendipitous finding of James Olds, in collaboration with Peter Milner. Olds had implanted electrodes in rats to study the reticular formation of the brain. One such electrode landed in an area he had not intended it to hit, and the rat kept returning to the place on the table where Olds had stimulated that part of its brain. To his and his colleagues' surprise and incredulity, Olds soon demonstrated that the rat would learn to run mazes to get the electrical current—to get brain reward. . . .

. . . Because the rat that is stimulated in this fashion becomes wildly excited (human beings interpret this state as ecstasy), and because it will cross all sorts of hurdles to get the brain reward, some researchers suggest that the electrode stimulates an

unknown pleasure center in the animal's brain. To be sure, pleasure center has a catchy sound, and the rat certainly seems to be having fun. . . .

But Deutsch thinks that electrical stimulation of the brain differs from other reward conditioned responses because it is abruptly extinguished when the brain stimulation is discontinued, because there apparently is rapid forgetting of the lesson, and because in contrast to thirst and hunger which are needed to motivate an animal to seek an appropriate reward, animals will work for brain reward in the absence of any identifiable drive. Deutsch concludes:

. . . The exact processes behind brain reward are still unknown. Nor do we have a good sense of how brain reward works in human beings, although ESB has been applied in clinical work. The human patient generally is more casual and lackadaisical under ESB than the experimental animal; there is no direct human parallel to the excitement and single-minded frenzy that we have seen in the rat. But then the human brain is far more complex and highly evolved than the rat's brain.

We have much to learn. While we may hope that brain reward eventually will be used to relieve intractable pain, we are a long way from becoming an implanted people who pursue electrical pleasure and neglect all else.

Electrical stimulation of the brain differs from psychosurgery in that it is reversible. It also differs from psychosurgery in that up to this time its technique is so expensive and so theoretical in its implications that it has only been practiced at a very few neurophysiological research centers. Psychosurgery has been criticized because its techniques may be applied very selectively at Yale and Harvard but can be easily copied in Mississippi. On the other hand, one reason for locating brain centers, such as the center that allows the bull to charge furiously, is not only so that they can be temporarily knocked out of commission through an electrical charge but so they can be permanently knocked out of commission, perhaps by a larger electrical charge or by some other psychochemical or psychosurgical method. So although the two most famous researchers with ESB, Delgado and Heath can truthfully stress the reversibility of their alteration of behavior, there is no reason their knowledge cannot be used to secure permanent change.

In a discussion at The Hastings Center of the Institute of Society, Ethics and the Life Sciences on Physical Manipulation of the Brain, Dr. Perry London, clinical psychologist, Professor at the University of Southern California, challenged Dr. Delgado:⁶⁹ ". . . There is something about this new technology that is different from most of the issues of public versus private interests which have preoccupied men in the past. Unlike compulsory education, unlike vaccination, unlike the traditional domain of conflict between the state and the individual, the arena of discourse here is the executive apparatus of the individual. The issue . . . is whether it's justifiable, and under what circumstances, to radically alter the nature of the individual."

Replied Delgado, "I think that there is something new. One, we are dealing with the brain directly, circumventing sensory inputs. Two, we can experiment with classical mental functions, such as memory, understanding, will, etc. This was not possible in the past. Three, we can relate mental functions to chemistry and to neural structure. This also is new. Therefore, I think that today we have new possibilities to study the brain technically, theoretically, and practically."

Later in the discussion, Dr. Herbert Vaughan, Professor of Neurology at Albert Einstein College of Medicine, said: "My experience as a neurologist is that people do consider the brain to be one of the areas in which the possibility of a surgical or physical procedure is most feared. Is there, within each of us, perhaps inborn, some fear that requires us to protect ourselves against encroachment upon the brain?" Replied Delgado, "The inviolability of the brain is only a social construct, like nudity."

In an article in *The Humanist* entitled "Brain Manipulation: Psychocivilized Directions of Behavior," Delgado counters the Breggin position that there is something

sacred about the human personality:⁷⁰ “. . . Accepting the fact that we are merely a product of genes plus sensory inputs provided by the surroundings, we approach a conclusion similar to that formulated so lucidly by Skinner: Cultures must be designed with a human purpose. Just as we have developed city planning, we should propose mental planning as a new and important discipline to formulate theories and practical means for directing the evolution of man. We should not consider ourselves the end products of evolution; rather, we should try to imagine that thousands of years from now the inhabitants of the earth could differ more from present man than we differ from gorillas and chimpanzees. . . .”

In contrast to those who see behavior control and added knowledge of new techniques of control as threats to freedom, Delgado sees these as conferring freedom. He sees man now as unfree, and he sees new techniques as having the potential for giving man freedom:

Liberal societies are based on the principle of self-determination. They assume that each person is born free and has the right and ability to develop his own mind, shape his own behavior, construct his own ideology, and express his personality without external pressures or indoctrination. The role of education is to help natural development without trying to change the individual. Privacy has a high priority, including its intellectual, emotional, material, and territorial aspects. Personal freedom is limited only when there is interference with the rights of others.

This nonrestrictive orientation has great appeal, especially for those educated in liberal societies, but unfortunately its assumptions are not supported by neurophysiological or psychological studies of intracerebral mechanisms for free behavior. For his brain lacks the stored information, neuronal circuitry, and functional keyboards that are prerequisites for the formulation of choices. The brain per se with all its genetic determination is not sufficient for the development of a mind. Mental structure depends on external information that will be stored as symbolic codes with material traces carved in the proteic flesh of the neurons; to evaluate sensory messages and determine a course of action, one must correlate present information with past experience. This fact is rather important, because without a frame of reference, evaluation of reality is not possible, and a frame of reference is not provided by the genes. The empty brain of the newborn lacks the necessary information and neuronal mechanisms to process the almost infinite number of inputs from the environment. Since only a limited number are used to structure each individual, their initial selection depends on chance and on such variables as the presence and behavior of parents and teachers. During the early years of childhood, the individual is unable to search independently for alternatives. Until our capacity for intelligent choice, or even resistance, has emerged, our personality is structured in a rather automatic way.

Both sides in the behavior control dispute claim, then, that they are promoting freedom—Breggin the freedom of the individual to make choices and Delgado the freedom of the individual to have choices to make.

Questions Raised by Behavior Control—The question of behavior control whether through somatic (biological) intervention or through psychological conditioning raises such questions as—

If society wants to control behavior through scientific means, who will make the decisions as to what behavior should be controlled and how it should be controlled?

Is it true as Breggin asserts that those doing psychosurgery are really doing experimentation under the guise of treatment?

Are the problems of informed consent being given adequate consideration in this field?

Are hospital review committees adequately protecting the interests of patients? Do they review the technical competence of the medical technician rather than the human implications for the subject?

How can a line be drawn between those conditions where we might approve of psychosurgery—intractable pain, for example—and those conditions where there would be almost general disapproval—for chronic alcoholism or sociopathic behavior? What about severe anxiety? Obsessive behavior that interferes with the ability to live a normal life? Homicidal and suicidal behavior? Drug addiction?

Should the presence or absence of diseased tissue in the brain be an important criteria in whether psychosurgery is allowed? The presence or absence of brain wave abnormalities?

What is the role of the government in promoting psychosurgery research? Has the National Institute of Mental Health adequately dealt with this problem? Should the Law Enforcement Assistance Administration of the Department of Justice be sponsoring (as it does) research in violence control that includes psychosurgery?

Would a moratorium on such research be helpful?

On a philosophical level, is the operation an abrogation of freedom or does it confer freedom by relieving the individual from forces which prevent him from exercising options and from developing his potential?

Are there some scientific procedures which may have a potential for good but have so much potential for harm that they should be prohibited? Is it right to prohibit scientific research under any circumstances? Is it practical to prohibit research? How should research, if it is not prohibited, be controlled?

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