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Peter R. Breggin

## The Return of Lobotomy and Psychosurgery

Author's Note (1982)

In 1971, I discovered that a substantial group of psychosurgeons had again become active, and were planning an international resurgence of lobotomy and other forms of psychosurgery. "The Return of Lobotomy and Psychosurgery" was written to alert the media and the general public to this potential menace. When no one could be found to publish this controversial document, I had it inserted into the *Congressional Record* by Congressman Gallagher. Gallagher's assistant, Charles "Chip" Witter, had encouraged the congressman to be critical of government-sponsored behavior control projects.

Following the publication of the *Record*, I contacted the Associated Press and was pleasantly surprised when they showed a willingness to put the story on the AP wire. That wire story kicked off what would become an international campaign to prevent the resurgence of lobotomy and psychosurgery. The campaign had been largely successful. Through a combination of public pressure, law suits, and legislation, many American psychosurgeons have been forced to give up performing the operations. The "second wave of psychosurgery" which they were touting in 1972 has not developed, and today the number of operations has declined to 200-300 per year in the United States. No doubt, however, the psychosurgeons will attempt to resurrect their surgery as soon as public criticism abates. H. T. Ballentine in particular remains very vocal in support of his surgery.<sup>6</sup>

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Although the Congressional Record was not intended as a scientific document, its scientific observations have held up over the years.<sup>1-7</sup> My major error was in naively accepting the reports on electrical stimulation of the brain which described the capacity to control specific kinds of behavior. All forms of psychosurgery remain relatively crude and grossly destructive. The individual's behavior and mental activity can be levelled or impaired, but more specific effects cannot be achieved with any regularity.<sup>2,6</sup>

Since writing "The Return of Lobotomy and Psychosurgery" I have gone on to develop the brain-disabling hypothesis which states that *all* the major psychiatric interventions—the major tranquilizers, lithium, the antidepressants, electroshock, and psychosurgery—achieve their primary clinical effect by impairing brain function.<sup>3-7</sup> This impairment produces either euphoria (a false impression of happiness) or apathy (an enforced docility). I have given the name *iatrogenic helplessness*<sup>5-7</sup> to these common effects of all the major somatic treatments in psychiatry.

The political issues surrounding psychosurgery became more clearly defined as the campaign against psychosurgery grew. I discovered, among other things, that the National Institute of Mental Health and the Justice Department were sponsoring a joint project involving psychosurgery for the control of violence.<sup>2</sup> Neurosurgeon Vernon Mark, psychiatrist Frank Ervin, and their associate, neurosurgeon William Street, had been advocating psychosurgery for the control of the black urban uprisings which were threatening America in the late 1960s and early 1970s. With the documentation of these seemingly unbelievable disclosures, the anti-psychosurgery movement gained considerable momentum. The federal project was terminated, and Mark, Ervin, and Sweet felt compelled to modify their original statements about the potential efficacy of psychosurgery in the political arena.<sup>2</sup>

I have changed some of my own political views with further experience. My efforts led directly to the formation of a National Commission on Psychosurgery; but I learned the bitter lesson that government sponsored commissions support the establishment, not the critics of the establishment. This practical consideration has discouraged me from pushing for federal regulation of various activities, including psychiatric "treatments." More important, I have come to the conclusion that no one, *including me*, has the right to impose his views about therapy upon other consenting adults.<sup>3,7</sup> I have therefore changed the position which I advocate in this paper, and now believe that no form of treatment should be banned by legislation. Voluntary patients should be allowed to choose any therapy they wish for themselves, even if it is brain-damaging. However, patients have the right to be fully informed about the controversial nature of the treatments and about their damaging effects. If they have not given informed consent for the treatment, they should be encouraged to sue for damages. I continue to favor outlawing brain-disabling treatments for children, involuntary mental patients, prisoners, and persons adjudicated incompetent.<sup>3</sup>

Following the publication of "The Return of Lobotomy and Psychosurgery," the Center for the Study of Psychiatry was formed to educate the

public concerning the threat of psychiatric technology to political freedom and individual well-being. The Center eventually distributed 10,000 copies of the Congressional Record article, and tens of thousands of additional copies were reprinted and distributed around the world by patient rights organizations. It became an underground bestseller in the movement to curtail psychiatric oppression. Nowadays my views no longer seem so radical, and my more scientifically oriented critiques of psychiatric technology are even finding their way into the professional literature. It's hard to believe that it was ten years ago when I turned to the Congressional Record as a "last resort" for the publication of "The Return of Lobotomy and Psychosurgery." I want to thank Prometheus Books and Rem B. Edwards for at last making it available in book form to the reading public.

(By Hon. Cornelius E. Gallagher, of New Jersey, in the House of Representatives)

Mr. GALLAGHER. Mr. Speaker, I rise today to insert into the Congressional Record one of the most shocking documents I have ever seen. "The Return of Lobotomy and Psychosurgery," by Dr. Peter R. Breggin has not been previously published and represents the first critical review of the current resurgence of this mutilating operation on a wide scale. Dr. Breggin covers the world scene in the first section, concentrates on its use in the United States in the next two sections and concludes with a sensible program for prompt action. His bibliography is extensive and indicates the depth of his research.

Psychosurgery is now being used to control so-called "hyperactive" children and it is even used on children as young as 5 years old. Dr. Breggin describes the frightening use of this surgery on individuals who suffer from "anxiety" and "tension" and other forms of behavior which might be classified as neuroses, and he documents an increasing tendency to select women, older people and now children as targets. He cites dozens of on-going projects.

While there was a strong negative response to the original wave of psychosurgery which claimed up to 50,000 victims in the United States alone, this human revulsion was not widely expressed in the medical literature. I have been informed that the decline of lobotomy in America during the late 1950's was because of the increasing use of electroshock and drugs, not because of any public or professional outcry. This current wave of lobotomy and psychosurgery of all forms should be met with a prompt public interest and, in no case, should it be allowed to spread without informed scrutiny. Dr. Breggin performs a distinct public service by bringing forward an immense amount of information which has hitherto been buried in somewhat arcane journals.

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Mr. Speaker, I have used the words "shocking and "frightening" to describe what Dr. Breggin has disclosed. I am especially upset to discover that

irreversible brain mutilation is being used on hyperactive children. When my privacy inquiry held a hearing on the use of behavior modification drugs on grammar schoolchildren in September 1970, we learned that there was nothing wrong with these children in the medical sense. It was behavior and behavior alone that created the diagnosis of minimal brain dysfunction and perhaps the only proper definition of that term was presented by Dr. Francis Crinella: "one of our most fashionable forms of consensual ignorance." At least 250,000 children, in all parts of the country, are now receiving drugs to mask the effects of MBD, but the drug therapy can be stopped. Nothing can undo brain mutilation, according to Dr. Breggin, and I am convinced that public debate must take place over the use of such irrevocable destruction of the creative personality.

Mr. Speaker, "shocking" and "frightening" are too mild to describe my reaction to this material. The following article, "The Return of Lobotomy and Psychosurgery," is copyrighted by Dr. Peter R. Breggin in 1972 and I think many Americans will be grateful to Dr. Breggin for allowing its publication in the RECORD. As a man who has been concerned about the erosion of human values for some 7 years and who has taken effective steps in the past to guarantee our citizens the right to pursue happiness in their own way, let me say that I am personally grateful to Dr. Breggin for his courage, scholarship, and humanity. I am proud to insert his copyrighted article in the RECORD at this point:

## Introduction

The purpose of this report is to alert the American public to the details of a current resurgence of lobotomy and psychosurgery in America and around the world.

In lobotomy and psychosurgery parts of the brain that show no demonstrable disease are nonetheless mutilated or cut out in order to affect the individual's emotions and personal conduct. In each of the studies presented here, the expressed purpose will be the control of some form of behavior—most often aggressive behavior—or the blunting of an emotion, usually "tension" or "anxiety."

The surgical methods vary widely both here and around the world, including the old-fashioned "modified" pre-frontal lobotomy, essentially a mutilating operation in which the surgeon cuts a narrow slice through the midline base of the frontal lobes, partially incapacitating the highest and most refined functions of the human brain and the human being. These frontal lobes, the highest evolutionary organ in the human being, are also being attacked with ultrasound, electrical coagulations and implanted radium seeds.

Newer operations also attack the amygdala of the temporal lobe of the brain, the cingulum which lies beneath the frontal lobes between the hemispheres, the thalamus, hypothalamus and related structures. As you will see in this survey, the great body of evidence supports the notion that all these operations

accomplish the same thing—a “blunting” effect upon the human’s emotional responsiveness. They are partial lobotomies.

The first wave of lobotomy and psychosurgery, which claimed 50,000 persons in the United States alone, was primarily aimed at state hospital patients with chronic disabilities. The current wave is aimed at an entirely different group—individuals who are relatively well-functioning, the large majority of them with the diagnosis of “neurosis,” many of them individuals who are still living at home and performing on the job.

Women constitute the majority of the patients, with old people and children as other large groups. In Japan, Thailand, and India, children have been large target populations for some time; but now in America, for the first time in many years, numbers of children are again being submitted to psychosurgery, particularly at the University of Mississippi, where O. J. Andy is operating on “hyperactive” children as young as age five.

The current rate of psychosurgery in the United States is difficult to ascertain, but you will be able to make your own estimates from the mass of material presented here, including about 1,000 cases since 1965 which have come to my personal attention during my informal survey and review of the literature. Three American psychosurgeons have accounted for more than 500 among themselves in recent years, and I have counted at least 40 individuals currently involved in psychosurgical projects. In addition, several psychosurgeons who will be quoted have estimated a current rate of 400–600 cases per year, and most important, every psychosurgeon agrees that we are just beginning to witness a massive increase in psychosurgery to rival the wave of 50,000 two decades ago.

There are a number of signals indicating the start of a major resurgence. A new International Association for Psychosurgery has been formed with an American, William Scoville, as its head. Many promotional statements are again appearing in print in widely circulated magazines such as *Newsweek*, *Medical World News* and *Psychiatric News*. Current textbooks in psychiatry and current year books of treatment will be found reviving psychosurgery, and major publications such as the *Journal of the American Medical Association* and the *American Journal of Psychiatry* have been offering pro-lobotomy articles based upon inadequate scientific studies.

Current scientific studies will be found as wanting as those which originally led the prestigious Group for the Advance of Psychiatry to condemn the entire body of lobotomy literature as promotional and marred by exaggerations of success and denials of grossly mutilating effects upon the personality. Those few follow-up studies with matched controls (56, 73, 93) will describe a disastrous first wave which leaves little optimism for the future.

The material will be prescribed in three parts:

I. Current Psychosurgery Around the World. II. Current Psychosurgery in the United States, and III. Newest Advances in Mind Control. It is useful to start with the material around the world because it more clearly documents the menace of psychosurgery.

The bibliography is by far the most extensive published on psychosurgery since 1965. The great majority of articles describe current psychosurgery, while a few are retrospective evaluations, and most refer to the United States (1, 2, 10, 18, 22, 23, 26, 28, 29, 30, 37, 38, 39, 40, 42, 43, 44, 50, 51, 54, 58, 61, 65, 66, 71, 72, 77, 78, 79, 81, 85, 86, 87, 95, 96, 98), England (3, 12, 20, 21, 24, 42, 46, 47, 48, 53, 55, 57, 58, 70, 76, 78, 79, 82, 83, 84, 88, 89, 90), and Canada (4, 5, 7, 18, 52, 56, 59, 60, 88, 89, 90, 91, 99).

Finally, I am grateful to Congressman Cornelius Gallagher for the opportunity to present the body of my research to the general public.

## I. Current Psychosurgery Around the World

Psychosurgery is currently being done in Canada, Australia, France, Spain, Italy, West Germany, Norway, Sweden, Denmark, Finland, Switzerland, Thailand, India, and the world's leaders, Japan, England and the United States, nearly all of whom were represented among the one hundred psychosurgeons gathered in Denmark for the Second International Conference on Psychosurgery in the summer of 1970 (79-80). Russia outlawed lobotomy and psychosurgery in 1951, and Khachaturian published a lengthy polemic explaining why.

My survey is based upon material which was presented at the International Conference, published in the literature or sent to me by the psychosurgeons with whom I have been in contact here in the United States. It is bound to be selective, since only the better work tends to get published or reported, while the less satisfactory work is discarded or kept out of sight. This will be particularly true in regard to a procedure like psychosurgery that has received considerable negative publicity.

Similarly, the published work and reported cases in any field of medicine are likely to reflect only a small portion of what is going on, and in the field of psychosurgery, the effects of the current promotion may not show up for some time.

Now for a review of psychosurgery around the world.

Some of the most candid reports come from Madras, India, one of the leading medical centers in that part of the world, where several high ranking medical and psychiatric authorities are deeply involved in the psychosurgery of children. The chief investigator is Dr. Balasubramaniam, Honorary Neurosurgeon, Government General Hospital and Government Mental Hospital, Madras. He is well-known among western psychosurgeons, delivered a paper at the Second International and publishes in English language journals.

He headlines his basic theoretical paper "Sedative Neurosurgery" and then opens with one of the most forthright and simplistic descriptions in the psychosurgery literature: "Sedative neurosurgery is the term applied to that aspect of neurosurgery where a patient is made quiet and manageable by an operation." P. 377.

Classical prefrontal lobotomy, the operation done on so many tens of thousands, is one variant of sedative surgery, he says. His own up-to-date amygdalotomy and more occasional hypothalamotomy are newer variants. His work heavily involves children who are hospitalized, and he tells us: "The patient who requires this operation may manifest with one of the various behavioral disorders listed below. The commonest is restlessness." B. 377.

You will see that this is not a practice limited to India, and that both Japan and the United States are doing psychosurgery on hyperactive children.

Writing in July, 1970 in the American Journal, *International Surgery*, Balasubramaniam summarizes his results with 115 patients, three of them *under age five* and another 36 *under age eleven*. Using diathermy or injections of foreign matter, such as olive oil, to destroy areas of these childrens' brains, he produces this result: "The improvement that occurs has been remarkable. In one case a patient had been assaulting his colleagues and the ward doctors; after the operation he became a helpful addition to the ward staff and looked after other patients. In one case the patient became quiet, bashful and was a model of good behavior." P. 21.

Balasubramaniam sums up in his concluding sentence: "This operation has proved to be useful in the management of patients who previously could not be managed by any other means." P. 22.

If this turns out to be true, as I believe it will, then amygdalotomy surgery will be the ultimate "therapeutic weapon" for any state hospital superintendent or prison warden.

A bizarre report comes out of Thailand, where Chitanondh is also performing amygdalotomies on brain damaged patients, psychotics, neurotics, epileptics and behavior problems under the psychiatrically absurd rubric of "olfactory seizures and psychiatric disorders with olfactory hallucinations." In other words, if he finds a case where the sense of smell is involved in any fashion, then he chops out the amygdala on the grounds that it is involved in smell perception and elaboration. This is the same amygdala that Balasubramaniam mutilates on the grounds that it is involved in aggression. Again and again we will find this phenomenon—that the psychosurgeon picks out the symptom that he wants to focus upon, then destroys the brain's overall capacity to respond emotionally, in order to "cure" the symptom which he focused upon, completely neglecting that he has simply subdued the entire human being.

One of Chitanondh's patients is a nine-year-old boy whom he thinks has an olfactory hallucination but who is obviously involved in a behavioral struggle with his parents. This patient has a "habit" of running away from home, allegedly to smell engine oil in cars!

"Chief complaint of an obsessive smelling habit. For two years before admission he had a strong compulsion to smell engine oil. . . . He would not give any reason why he had to do this. The parents punished the patient but he would not give up the peculiar habit." P. 192.

Despite the boy's denial that he was hallucinating, the neurosurgeon performs

this "sedative neurosurgery" and of course the boy no longer runs away to smell engine oil.

In a rare show of public disagreement, the discussants quoted after this report seem piqued at their colleague's assault upon this child. One, a neurosurgeon, says: "If the neurosurgeons move psychosurgery from the frontal lobe to the temporal lobe (amygdala), we need to know some elementary psychiatry." P. 196.

Does this mean, as it seems, that it is not necessary to know elementary psychiatry if the neurosurgeon sticks to the frontal lobes—literally the heart-land of man's highest and most subtle functions?

Another discussant of Chitanondh's work, a Japanese, warns that he, unlike the Thal, only operates on the mentally retarded! In a sentence he thus condemns his own methods as too gross or too inhumane for children of normal intelligence, while at the same time condemning the mentally retarded to sub-human status.

The Japanese have been doing both frontal lobotomies and the newer amygdalotomies (temporal lobotomies) steadily without going underground during the late 1950's and the 1960's. They publish their work in English language journals and influence the International and American movement.

Narabayashi and Uno of Tokyo report in 1966 on a follow-up of 27 children ages *five to thirteen* who have had amygdalotomies. They operate on: ". . . children characterized by unsteadiness, hyperactive behavior disorders and poor concentration, rather than violent behavior; it was difficult to keep them interested in one object or a certain situation." P. 168.

Here is a description of the *best* results as achieved in five of their many cases: "(They) have reached the degree of satisfactory obedience and of constant, steady mood, which enabled the children to stay in their social environment, such as kindergarten or school for the feeble-minded." P. 167.

Sano, also in Tokyo, reports on 22 cases beginning with the youngest *age four*. His *best* results? "Emotional and personality changes: the patient became markedly calm, passive and tractable, showing decreased spontaneity." P. 167.

Remember these descriptions when we examine related surgery being performed on depressed people, obsessive neurotics and a raft of others in the United States. Again and again we will find a kind of "tunnel vision" that allows a psychosurgeon to obliterate the liveliness and spontaneity of the individual while acting as if he is merely attacking a symptom or specific "illness" such as depression or obsessive neurosis.

Professor Sano is not an incompetent whose hypothalotomy operations cannot be trusted for technical expertise. He is an Honorary President of the International Association for Psychosurgery. Sano will be joining several American psychosurgeons (W. H. Sweet, Frank Ervin, Vernon Mark and others) at a large upcoming conference on violence and its treatment at the Texas University Medical School on March 9-11 in Houston (98).

The Japanese have not given up the more traditional frontal lobotomy. From the recent Second International Conference, Kalinowsky comments

"An impressive clinical report of 519 patients was given by the Japanese neuropsychiatrist S. Hirose, who prefers the orbitoventromedial undercutting procedure." This is a more limited, modified frontal lobotomy, involving cuts where they will do the most, in the brain pathways which lie toward the midline underside of the frontal lobes.

I have a summary of Hirose's talk given at the Second International in the summer of 1970 in which he describes 119 cases that he has done since 1957. He says that he operates on neurotics and psychotics, individuals with "protracted emotional tension states, over-sensitivity, excessive self-consciousness, and obsessive states."

Much as he did in his 1965 *American Journal of Psychiatry* report, he continues to recommend mutilating the brains of people who are: "delicate, warm-hearted, conscientious, enthusiastic, perfectionistic . . ."

This is important—that even the old-fashioned lobotomists are now advocating their gross forms of intervention for more normally functioning human beings. "A kind of plastic surgery of mental states," Hirose calls it in 1965.

Moving away from the Far East, we find that the West Germans are very active.

Hassler and Dieckmann have been operating on the thalamus of children—13 cases reported in this article—in order to reduce "aggressiveness, destructiveness and agitation."

They also believe they can "treat" specific psychiatric illnesses when they attack and destroy sections of the brain. Their psychiatric rationalizations are extremely crude; "Obsessive-compulsive neuroses are comprised as well of the perpetual repetition of non-sensical ideas as also of the psychomotor phenomenon of compulsion . . . (*sic*) Thus the irrational activation of thought may result from functional disturbance of the intralaminar nuclei."

The notion that specific neurotic disorders might be traceable to a disturbance in a nucleus within the brain is so crude that even the Russian, Khachaturian, with his own lack of sophistication, was able to dismiss it two decades ago.

The gross destructiveness of this kind of surgery, despite all apologies to the contrary in the literature, is again indicated by Hassler and Dieckmann's report that it can produce severe amnesia which lasts up to six weeks after surgery. In their minds, this is not an untoward side-effect, but an important aspect of the treatment which *helps* the therapeutic result.

This is in fact a common theme—increased damage leads to increased result—in the early lobotomy literature of Freeman and Watts (1950). Freeman (1959) suggests that it is good to damage the intellectual capacity of the neurotic because the neurotic thinks too much (p. 1526); and similarly the West Germans boast of: "alleviation of impulsion and over-subtle reasoning in all cases."

One of their patients became dangerous and attacked two nurses after surgery.

Still in West Germany, F. D. Roeder experimented with lesions in the hypothalamic region in an effort to cure "sexual deviation." The written report

is only 25 lines long but the pathology slide takes up half a page, in typical psychosurgical reverence for technology. This is what he accomplished: "Potency was weakened, but preserved. . . . The aberrant sexuality of this patient was considerably suppressed, without serious side-effects. One important feature was the patient's incapacity of indulging in erotic fancies and stimulating visions . . ."

He boasts in addition that there was a disappearance of homosexual impulses and that psychiatric commitment could therefore be avoided. Psychiatric commitment avoided by obliterating a man's fantasy life.

Now for the English-speaking world.

In Sidney, Australia, a group including Harry Bailey and John Dowling has published a report of 50 cases of cingulotomy with mention of 50 more on the way. The patients include a wide variety of people with depressions, including psychotics and obsessive-compulsive neurotics, and the cases were purposely selected to limit them to individuals with "basically sound personality structure" rather than to hopelessly deteriorated individuals.

The Australians report "excellent" results in the form of a statistical outline of psychological test results and impressions of post-surgical adjustment, including comments on the return of professional people to a successful professional life. But there is only one very short clinical description, and we must take their statistics on faith.

Nor can we trust their assertion that many return to professional work, since Freeman (1959) and Sargent and Slater (1964) have already disclosed that modified lobotomies return individuals to professional work but that they function with less sensitivity toward others and even with ruthlessness.

This Austrian study also displays the typical lobotomist preference for women: 64% according to a small print footnote to a chart. These psychosurgeons lament public resistance to their work which apparently limits their access to patients. For some unexplained reason, they label this public resistance "the Ben Casey effect."

Nearer to home in the English speaking world, the Canadians are becoming active again. In recent years the old-fashioned modified prefrontal lobotomy has been used on a variety of non-schizophrenic patients by R. F. Hetherington, P. Haden and W. Craig, Departments of Surgery, Psychiatry and Psychology, Kingston Psychiatric Hospital and Queens University, Kingston, Ontario. Their report to the Second International Conference in 1970 admits that the hospital refused to allow them to operate on males because of the unfavorable publicity given to lobotomies in Canada after the negative follow-up studies of McKenzie and Kaczanowski. But they were allowed to operate on women, 17 in number.

Still in Canada, we find Earle Baker, Assistant Professor of Psychiatry, University of Toronto, reporting in 1970 on "A New Look at the Bimedial Prefrontal Leucotomy." (Leucotomy, or "cutting of the white matter," is used as a synonym for lobotomy.) He describes 44 cases with "hard core functional psychiatric illness," including *six with personality disorders* and *twenty-five with neuroses*, who have been lobotomized between 1958 and 1968!

The article is fairly typical of the older literature with the exception of its more modern claim that lobotomy offers something for everyone: “. . . Safe and effective method of reducing the symptoms of excessive tension, anxiety, fear, or depression in patients with a wide variety of illnesses, including anxiety neurosis, phobic psychoneurosis, obsessional neurosis, neurotic or psychotic depressive reactions and schizophrenia. This operation should be considered in such neurotic, personality and psychotic illnesses when medical treatment has failed.” P. 37.

Baker openly acknowledges that the operation produces an organic brain syndrome—a sign of generalized damage to the entire brain. In this instance, it is characterized by “some disorientation, apathy, silliness and denial,” lasting up to two or three weeks and sometimes longer. In addition, as in the old days, there are “occasional changes in moral code, anger, sexuality, or interpersonal relations,” which the authors admit are permanent.

Women are their main targets, too, 27 females and 17 males, age 20–58, and as we continually see, the women “do better,” 12 of 25 women accounted for declared to have an “excellent” result, while *only* 4 of the 17 men accounted for have an “excellent” result. That’s 48% against 23%, but the investigators involved do not even mention this enormous discrepancy. It must be taken out of a chart!

Baker and his associates give us some fascinating vignettes to support their contemporary use of the frontal lobotomy. Case #1 is a suburban housewife who is promiscuous, runs away from home and becomes suicidal on occasion. After her lobotomy she is no longer promiscuous and becomes a faithful partner in her marriage.

These modern lobotomists describe considerable changes in the lives of their patients and make facile moral judgments about these changes. One man sold the family business that he never wanted; one middle aged man went out dating for the first time in his life; two couples came to blows for the first time; and three marriages broke up—all of which the authors put their approval upon as signs that the operations made the patients “more open” and “less dependent.”

One of their patients became so liberated that he went on to rob a bank. The judge gave him an extra heavy sentence, presumably to compensate for the moral obtuseness produced by the surgery.

Moore wrote a response to the *Canadian Medical Association Journal* stating that the judge was wrong in giving the longer sentence because the patient’s moral code would be unaltered by an “indefinite jail sentence,” as a result of his surgery.

Unlike the Far Eastern and some European psychosurgeons, the English by-and-large have retained an *unabated* preference for mutilating the frontal lobes.

The English total is now reaching or surpassing the 20,000 mark. Tooth and Newton took a national census of England and Wales and came up with an official count of 10,827 as of 1954—but even this figure excluded the

several hundred done in general hospitals, as well as the unknown hundreds done before 1942.

Extrapolating from Pippard's official count of 400 plus in the year 1961, Sargant and Slater estimate a total of 15,000 by 1962. If that rate remained constant, we would now be reaching a grand total of 18-19,000 in 1972. But the rate seems to be accelerating! The British surgeon, Geoffrey Knight, for example, presented statistics on 1,050 cases of his own at the 1970 Second International, and much of his work originates after 1960.

I can only give a small sampling of the English literature, for England appears to have led the world since the relative decline of the lobotomy in America.

Knight and his associates seem to be the most busy, at least in the published literature. I add this qualification because Walter Freeman told me of one British surgeon who had done 4,000 without any follow-up studies, published or unpublished! But to return to Knight, his original method is described as a bimedial lobotomy with orbital area undercutting of the frontal lobes, really the old-fashioned modified frontal lobotomy which so many psychiatrists think has been long dead. It is an extensive mutilation of the brain, involving a narrow longitudinal 2 cm. wide by 6 cm. deep cut at the midline of the frontal lobes at about the level of the eyes, or orbits. His first series included 550 patients, many of them with depressions.

It is impossible to judge the effects of his surgery, since he is a statistical lobotomist who offers practically no data about the people involved. Even a surgeon reporting on a new technique for removing an appendix is likely to tell us something about the general condition of his patients as well as the exact kind of appendix he is talking about, purulent, ruptured or whatever. But in taking out pieces of the brain, Knight tells us nothing or next to nothing about the nature of the individuals involved either before or after surgery. It is no surprise then that Kalinowsky, in a phone conversation with me, said that some psychosurgeons read Knight's own data completely differently than he does, in this instance favoring the results of his older methods to his new radiation implants.

Knight's new radioactive technique, again applied to hundreds of patients, is simply a more sophisticated method for destroying frontal lobe tissue. He plants radioactive seeds in the areas he might otherwise attack surgically (57, 58, 83). But the actual effects upon the personalities of his patients cannot even be guessed at—except on the basis of our general knowledge about the effects of lobotomy. All we can find in Knight's many journal articles are meaningless lists of one or two word diagnoses paired statistically with equally meaningless categories of improvement.

Knight tells us in a 1966 report that he was inspired to action after reading about the increased admission rate of old people to the state hospitals. What is his solution? Rehabilitation centers? Better housing and more social opportunities for the old? No. His answer is increased lobotomizing of older people, and he has done exactly that.

An article by Sykes and Tredgold follows up another series of 350 patients, some of them apparently done by Knight. Again we have empty statistics, and the general impression that the lobotomy never had a bad side-effect on anyone, or hardly anyone. But one statistic tells us a great deal about the mentality of the lobotomist—only 59 of these 350 patients had a serious trial of psychotherapy before being subjected to surgery.

What is Knight's theoretical justification? It is the same old "reduction of intensity of emotional reaction," Knight tells us in 1969. His elaboration of the theory behind this is crude and simplistic beyond belief: "Since primitive emotions are damaging emotions, it might be deduced empirically that the interruption of connections from primitive cortical areas would contribute to the results obtained." P. 257.

This theory amounts to nothing more than a *bias*—that strong emotions are bad. He calls these emotions "primitive," when in fact they may be the highest expression of our human development. Indeed, the frontal lobes are integral to all of man's most sensitive, subtle and human qualities—love, empathy, creativity, abstract thinking and such (25, 26, 34, 92). Severing the connections between these lobes and the lower brain does not bleach the lobes of their primitive influences, but in fact ruins the function of these lobes. The lower portions of the brain are no more "primitive" in function than the heart and lungs which phylogenetically pre-date much of the brain's development.

Knight supports the theoretical basis for his operation, entirely from animal experiments—as if the whole body of lobotomy literature did not exist. But what he says is what the lobotomists have been saying all along anyway. Animal psychosurgery succeeds in producing "quiescence and tameness."

Post and his colleagues are again representative of the statistical lobotomist, reporting on 52 patients in middle and later life who are allegedly helped (40% of them) by the old-fashioned bimedial frontal lobotomy.

Marks and his colleagues somehow came up with twenty-two cases of "agoraphobia"—fear of open spaces—and lobotomized them, again with the bimedial frontal lobotomy. They present no case material, so we can't judge what they mean by "agoraphobia" or why they would destroy a person's brain to cure such a symptom. In fact, agoraphobia as an isolated symptom is so rare that one must distrust their clinical judgment in its entirety. People crippled by such a symptom almost invariably demonstrate a complex of psychiatric symptoms, as do almost all individuals who are psychologically crippled.

The absurd becomes obscene in an unsigned editorial comment in 1969 in the *British Medical Journal* calling for brain surgery for sexual disorders (5). The editorial comment praises German investigators for destroying a portion of the brain (hypothalamus) of three male homosexuals, resulting in "a distinct and sustained reduction in the level of sexual drive," and all other drives of course, though they are unmentioned.

This editorial considers the "need to protect the public," but also suggests that voluntary consent should be obtained. But voluntary consent is a myth

when the individual involved is a social deviant subject to the alternative of prison or involuntary mental hospitalization (13).

But why call this editorial obscene? Because the writer brings up the alternative of castration for homosexuals and argues that castration is "open to question on ethical grounds," while lobotomy is not. This Englishman would rather lose his brains than his testicles.

The *Manchester Guardian*, April 2, 1968, reports that a gambler who has stolen money has been sent from court into psychiatric custody for "voluntary" brain surgery to cure his gambling. The psychiatrist involved was Harry Fleming, senior consulting psychiatrist, Winwick Hospital.

Dr. Fleming did not go uncontested. Another psychiatrist, F. R. C. Casson wrote into the medical journal, *Lancet*, to complain: "I have not previously heard of leucotomy being suggested as a remedy for compulsive gambling. By its reduction of moral inhibitory factors, one would imagine that it might facilitate irresponsible gambling behavior." P. 815.

## II. Current Psychosurgery in the United States

Petter Lindstrom, who has many hospital appointments around the country, including the Children's Hospital and Adult Medical Center in San Francisco, estimates that 400-600 psychosurgical operations are performed each year in the United States, and he personally accounts for 250 in the past five years in a recent letter to me. H. T. Ballantine, a psychosurgeon at the esteemed Massachusetts General Hospital, writes to me that he agrees with this estimate and that he has done 160 since 1965. Both Jack Lighthill and M. Hunter Brown in Santa Monica, California, also agree with the estimate and personally account for 110 cases in the past five years.

All the psychosurgeons who have written to me 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.

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.

Freeman, formerly Professor of Neurology, the George Washington University School of Medicine in Washington, D.C., has come out of retirement with invitations to speak at national and international conferences, including his appointment as an Honorary President of the new International Association for Psychosurgery. In a very recent (late 1971) article in the *British Journal of Psychiatry* he advocates operating upon schizophrenic patients early in

their illness rather than as a last resort. This will open the way for another phase of massive institutional lobotomization of young people.

Speaking at the Washington, D.C. academy of Neurosurgery in 1965, Freeman accurately describes the effects of his surgery when he points out that lobotomy leads to some of the same results as the last stages of deteriorating schizophrenia. When such a patient is so demoralized and deteriorated by institutional life that he no longer gives the ward any trouble, then there's no purpose to giving him surgery. Says Freeman: ". . . a deteriorated schizophrenic looks and acts the same with or without his frontal lobes. When the progress notes of such a patient read, "Gives no trouble on the ward," it is generally too late to expect any substantial result from operation." P. 157.

Lothar Kalinowsky, Professor of Psychiatry, New York Medical College in New York City, has written numerous books on somatic therapy, and more recently has spent considerable time on promotional for psychosurgery, including the *Psychiatrist News* article, plus a published panel, and at least one unpublished panel on the West Coast.

In the published panel discussion Chairman Kalinowsky is again touting lobotomies for "intractable and disabling neuroses, chronic depression unresponsive to other treatments." Panel member Henry Brill, a very well known state hospital psychiatrist from Pilgrim State, Long Island, where several thousand lobotomies were once done, spoke with indignation when he defended this treatment as prematurely discarded and "cast aside too cavalierly." Brill also let on that "informal communications with American psychiatrists indicate that the operation has not been abandoned as completely as one might imagine from a casual reading of the literature."

Fritz Freyhand of St. Vincent's Hospital, James Cattell of the department of psychiatry at Columbia P and S, and Joseph Ransohoff, from Bellevue, in New York City, participated in the panel. Dr. Ransohoff mentioned that he'd done 35 lobotomies in the past five years.

Kalinowsky himself refused to give me an estimate on the phone or by mail concerning the number of lobotomy referrals he had done in the past few years. Only a few, he kept protesting, but with further questioning he admitted to having seen three patients in the last week (May 3, 1971) as possible candidates for lobotomy, one or two of whom he said would probably end up under the surgeon's knife.

E. A. Spiegel, Professor Emeritus at Philadelphia's Temple University, has been active as President of the International Society for Research in Stereencephalotomy and as editor for the annual review called *Progress in Neurology and Psychiatry*. For the first time in many years, in 1970 he allowed psychosurgery to appear in his review book in the form of a three page survey.

Spiegel and his Philadelphia colleague, Henry T. Wyeis, are pioneers in stereotaxic brain surgery, but they have done only a few psychosurgery or psychiatric cases in recent years. Wyeis reporting at the Second International on four "compulsive neuroses" operated on during the previous four years (79).

Spiegel's *Progress in Neurology and Psychiatry* is not the only annual review to

resurrect psychosurgery in America. *The Yearbook of Psychiatry and Applied Mental Health*, edited by Wortis, abstracts an article I will review in this section. The American psychiatrist, Francis J. Braceland adds an editorial comment: "It is interesting that psychosurgery is once more being considered. . . . The followup study is encouraging. . . . Nevertheless, these procedures should be used only as a last resort, and after all other methods have failed."

Another major promotional figure in American psychosurgery, William B. Scoville of Hartford Hospital and Yale University, is President of the new International Society for Psychosurgery. In *Medical World News* he reports doing about two a month, (57) and in a letter to me he notes the demand is going up now. This Associate Clinical Professor of Neurology at Yale uses orbital undercutting, a frontal lobotomy not unlike that used by the dean himself, Walter Freeman, so many years ago.

Writing in 1969, Scoville recommends lobotomy for depressions and for anxiety states, especially in the aged, much as Knight recommends. He also lists some cases of conversion neurosis, severe obsessive-compulsive neurosis, and certain forms of schizophrenia, even though he says the delusions may get worse. And going contrary to many other lobotomists, he suggests it for some drug addicts.

Most important is his recommendation for depression, since depression is one of the most common problems in any psychiatric practice, especially in the elderly for whom he strongly favors lobotomy. His comments are particularly dangerous because he favors lobotomy over repeated courses of electroshock, stating: "More than one or two courses of shock treatment probably causes more diffuse brain damage than the newer fractional lobotomies." P. 153.

He repeats this allegation about electroshock in his promotion of lobotomy in *Medical World News* in January 1971. It is important because electroshock is used so very widely, tens of thousands of patients every year, so that any trend to replace it with surgery would vastly increase the lobotomy population, a trend already apparent in England.

Still in his 1969 article, Scoville argues that all forms of psychosurgery accomplish the same basic mutilation, partial destruction of the "limbic system" or emotional regulating connections between the midbrain and frontal lobes, with a resultant disruption of the emotional component of the mind.

As he succinctly puts it: "All prefrontal surgery probably benefits by a blunting function." P. 456.

Consistent with this, he says: "It is apparent to this writer that different types of mental disease do not require different areas of ablation or tract interruptions. There appears no need to vary location of operation in the neuroses, cyclical depressions and schizophrenia." P. 456.

He adds that the lower down the cut, the more specific the suppression of emotion, while the higher the cut, the more intellectual impairment.

I agree with Scoville that the mind functions as a whole and is disrupted as a whole, and that the basic goal and the basic consequence of psychosurgery are always one in the same—to blunt, tame, quiet, sedate, or otherwise submerge or partially destroy the individual's unique emotional responsiveness.

In *Medical World News*, Scoville is said to have performed over a thousand lobotomies.

J. M. C. Holden, Associate Professor of Psychiatry and Physician Superintendent of the St. Louis State Hospital Complex, offers one of the most extensive and candid reviews of frontal lobotomy in late 1970 in *The American Journal of Psychiatry*, reporting on over 400 cases done some time ago in the St. Louis area. I wrote and asked about the numbers currently being done, and his colleague, L. Hofstatter, replied that the state hospitals no longer do them and that those being done are carried out in private practice.

Holden is very candid about the kind of damage done by the original lobotomy operations. "The frequent effect of such overoperation was irreversible change in mood, emotion, temperament, and all higher mental functions. The more extensive the section, the greater likelihood that such symptoms would develop. Postoperative mortality and morbidity, incidence and duration of confusion, urinary incontinence, unequal pupils, facial asymmetry, convulsions, and other neurological sequelae were greater when the section had been more extensive. Excessive weight gain and temporary or permanent changes in performance on the rational learning test and conventional intelligence and personality tests after operation were also reported. . . . Some patients showed frank clinical deterioration that persisted after operation." P. 595.

He adds that not only did this prefrontal lobotomy destroy areas of the frontal lobe, but that the degeneration reached down into the thalamus.

Holden candidly describes the operation that mutilated tens of thousands in the English-speaking world alone, and then goes on to *praise it* as a necessary phase, a stepping stone, toward the newer, better surgery, and toward a better scientific understanding of the brain.

He recommends experimenting with more limited and localized surgery, but he himself admits that the areas attacked and destroyed—the hypothalamus, the nuclei of the thalamus, the amygdala—are all functionally *inter-related* "to mobilize the total body resources in stressful situations." "Interference with *any part* [my italic] of these circuits is reflected in changes in the homeostasis in others, but the nature of this interdependence and its precise relationship to behavior remains speculative." P. 593.

He acknowledges that some people have raised ethical objections, but he doesn't discuss these objections, and instead concludes that the modified *frontal lobotomy* should be continued in the United States as a "treatment" in neurotic and psychotic states characterized by a high degree of emotionality or tension.

Arthur Winter of East Orange, New Jersey, will soon be coming out with a book on lobotomies in collaboration with Scoville and Heath. Winter writes to me that he is doing "stereotaxic prefrontal lobotomies," limited to one side of the frontal lobes, in some instances at least. He would not tell me how many cases he had done, but sent me a detailed report on one 33-year-old man with a diagnosis of schizophrenia on whom he had operated in 1969. A photograph provided by him in *Medical World News* shows a good size "1 cm." obliteration looking as large as a walnut squarely in the middle of one frontal lobe.

Winter bases his work in large part on the Shobe and Gildeas article in the *Journal of the American Medical Association*, October 7, 1968, a report which describes "excellent" follow up results with a group of largely older private patients with agitated depressions. There are no control groups and insufficient clinical data.

The use of prefrontal lobotomy on individuals with agitated depressions opens the way to massive lobotomization of large segments of the population. The individual with an agitated depression is typically an older woman (18 females to 9 males in Shobe's study) who becomes depressed, hypochondriacal, obsessive and generally tense during her midlife and menopause. This person has always been a target for whatever current "therapy" someone wishes to push—insulin shock, electroshock, anti-depressants, tranquilizers, and now, lobotomy.

Petter Lindstrom of San Francisco has been reporting for many years on the use of destructive ultrasonic energy as a substitute for the surgeon's knife in frontal lobotomy. He calls it PST for Prefrontal Sonic Treatment. In *Medical World News* he is reported to have done 475 patients over the past twelve years, from children age eleven to elderly people age eighty, suffering from just about everything—anxiety, depression, obsessive neuroses, phobias, hypochondriasis, addictions and pain.

In a recent, as yet unpublished paper, presented at the Second International Conference on Psychosurgery (1970), Lindstrom presents this case: "A 13-year-old schizophrenic girl became disabled by progressive anxiety and psychosomatic symptoms in spite of drugs and psychotherapy, and was unable to go to school. Following the PST she was able to return to school and now has attended school regularly for four years, achieving passing grades. She has been helping with the work at home. Both the patient and the parents are pleased with the progress."

Writing in 1964 and talking about a series of 60 psychotics and 154 neurotics, he drops that typical statistic without remarking upon it—72% females among the psychotics, and 80% females among the neurotics.

Lindstrom apparently balks at being called a lobotomist. He says that he has been able to titrate his doses of energy so that he can reach a point where the damage is not grossly perceptible and hence does not constitute a lobotomy. But if he's getting a behavioral effect, he's done a lobotomy, even if it's merely a lobotomy by disruption of the brain chemistry. Otherwise it's a placebo.

Lindstrom, Winter, Scoville, and other lobotomists are making direct attacks on the frontal lobes. This is still among the most popular approaches to the psychosurgery of American patients.

H. T. Ballantine, Jr., is performing cingulotomies at perhaps the most prestigious general hospital in the world, The Massachusetts General of Boston. Scoville says that this type of surgery represents a "fractional lobotomy (77, 78). Ballantine also notes that the operation, when done on monkeys, produces "tameness and placidity," which certainly puts it in the class of the lobotomy in this regard.

Scoville, in his introduction to the unpublished Transactions of the Second International, believes that cingulotomy surgery is only successful because it is inaccurate and inadvertently cuts directly into some of the fiber tracts of the frontal lobes.

Ballantine makes references to other surgeons with series of 52 and 16 patients, and briefly describes his own series, mostly psychotics, ages fifteen to eighty-three with that typical distribution, 20 females, 14 males. He tells us virtually without explanation, that 22 were usefully improved, 10 were failures and 8 became *symptom free*.

Only dead people are symptom free.

Ballantine writes me that he is still active and has operated on 160 patients since 1965.

M. H. Brown and Jack Lighthill of Santa Monica, California, report in 1968 on another group of patients who have had their cingula obliterated. They have done 110 cases, 71% women. Two thirds of them had intractable neuroses, and 91.9% are considered good results, with little explanation of how this evaluation was arrived at. "Destructive emotional forces were removed," they tell us, including a reduction in anxiety, phobias, depression, hostility and obsessive thinking.

In recent personal correspondence with me, Dr. Lighthill sent copies of letters from other psychosurgeons applauding a "second wave" of psychosurgery around the world. He agreed with Lindstrom, as I mentioned, that 400-600 operations are being done a year in the United States, and said that his own group had operated on 110 patients before 1966, and an equal number, 110 *since* 1966.

Lighthill writes to me and Brown mentions at the Second International that they see a bright future for operating on criminals, especially those who are *young* and *intelligent*, a promise you will see being fulfilled in Mississippi.

Neurosurgeon Glenn Meyer and psychiatrists at the University of Texas Medical Branch in Galveston have also been experimenting with cingulotomies for the past several years, with a total of 27 performed on "alcoholics" and "drug addicts," as reported in an unsigned front page article in *Psychiatric News*, the official newspaper of the American Psychiatric Association, December 16th, 1970 (71). A psychiatrist, Winston Martin, reports on the data in this article entitled "Psychosurgery Hailed in Experimental Texas Study." The report speaks of results that are "nothing short of spectacular." "The procedure either helps or completely rids the patient of his emotional illness." No side-effects are found whatsoever, but it is noted that 15% of the patients have seizures post-operatively. Their press release announces that a "cure" has been found (71).

Vernon Mark, Frank Ervin and his associates from Boston City Hospital report in 1970 the details of one case of depression in which the psychosurgical operation was a great success but the patient killed herself.

Briefly here is the story. A woman with a long and difficult psychiatric history is brought in for psychosurgery, specifically a thalamotomy, mutilation

of an emotion regulating portion of the brain. Her mother is heavily involved with her and with the psychiatrist and surgeon, and is probably a significant force in getting her to submit to surgery. The patient gets obviously worse after the first mutilation is performed, so she is done again with the convenience of her implanted electrode. After the second mutilation she becomes enraged at her psychiatrist and her neurosurgeon, and refuses to talk with or deal with her neurosurgeon any more. Nor will she ever submit to a suggested *third* operation. Her electrodes are therefore removed, but her rage is dismissed as "paranoid" by V. H. Mark and his associates.

Her mood then improves, as we are told, until she reaches a state of "high spirits." She is allowed out of the hospital to shop whereupon she goes directly to a phone booth, calls her mother to say "goodbye," takes poison and kills herself.

Her suicide is not seen as the vengeful act of a mutilated soul against her mother and her physicians. Instead, her suicide is interpreted as a sign that she was getting over her depression, a "gratifying" result of the operation—the word gratifying cropping up several times. All this is based upon the simplistic notion, sometimes taught to beginning psychiatric residents, that the occasionally observed phenomenon of suicide in the midst of an apparent recovery can be explained by a hydraulic conceptualization of increased energy permitting the patient to suicide before the depression is fully over. This explanation overlooks the individual dynamics, which cry out in this case.

This is the *only* detailed case report I have found in the entire current lobotomy literature, and I am grateful for this one instance in which enough material is provided for an independent judgment of the "gratifying" effects of psychosurgery.

But I have left something considerably more disturbing for my last detailed report—the mutilation of very young children for the admitted purpose of making them more manageable at home, at school or in the hospital.

Led by Congressman Gallagher's committee hearings, there has been a public outcry against the *drugging* of hyperactive children. Now we have physicians performing mutilating *surgery* upon hyperactive children, sometimes with multiple operations that can lead to gross intellectual deterioration. Surgery, unlike medication, is always permanent! And while only one center in the United States is known to be pursuing this work at the present time, there is the *current* precedent of psychosurgery on hyperactive children around the world (8, 9, 19, 62, 64, 75) as well as a past precedent for multiple severely mutilating lobotomies on children in the United States by Freeman, Watts and Williams (25, 94). In addition, Ballantine has operated on children as young as fifteen and Lindstrom on children as young as eleven. I also have had personal communications with one well-known American professor of psychiatry who advocates lobotomy on children but feels that "irrational" public resistance would prevent it at the present time, and Brown and Lighthill want to operate on young psychopaths.

O. J. Andy, Professor and Department Director of Neurosurgery at the University of Mississippi School of Medicine in Jackson is currently active in

operating on hyperactive children. He is assisted by a psychologist, Marion Jurko, but lists no psychiatrists on his team. In 1966, he describes his surgery as "under the charge of I. S. Ravdin, Professor Emeritus of Surgery at the University of Pennsylvania and James D. Hardy, Professor and Chairman, Department of Surgery at the University of Mississippi in Jackson.

In a personal letter to me dated May 28, 1971, Andy writes that he has operated on 30-40 patients ages seven through fifty, the *majority* children. In another personal letter to me, his colleague, Jurko, writes that the age range begins at *five*. The goal is frankly stated by Jurko—to "reduce the hyperactivity to levels manageable by parents"!

Andy and his colleague, Jurko, reported their work at the Second International Conference on Psychosurgery, as well as in American and international journals, but nonetheless Andy appears wary of the accusation that these children have "psychiatric problems." These are not psychiatric cases but "behavioral problems," presumably with neurological causes, he writes to me. But he admits that he can find nothing neurologically wrong in many of these children, except something as meaningless as difficulty in a specific form of wrist coordination (alternating pronation and supination) which any anxious child might fumble with.

Despite his protests about the non-psychiatric nature of these children's problems, he goes on to describe them as suffering from "some form of hyperactivity, aggression and emotional instability." He makes this quite specific: the trilogy of symptoms is hyperactivity, aggression and emotional instability. As we'll see, *all* of his patients suffer from very well-defined psychiatric problems, and his surgery, thalamotomies and a few cingulotomies, is aimed at nothing more nor less than controlling aggression in difficult children. Andy writes to me: "In relation to the operative results, the category under aggression appears to be alleviated to a much greater extent than the other two categories [hyperactivity and instability]."

As Freeman and Watts discovered years earlier in *Psychosurgery* and as Williams and Freeman report in their study of lobotomized children, it can be very difficult to control a child surgically. But you can usually mutilate him repeatedly until he stops bothering anyone. Quoting Andy's letter: "On the other hand, although a child who is somewhat retarded and nonproductive can also undergo a very dramatic change from an extremely aggressive and hyperactive individual to one who is cooperative and easily managed, although still not productive." (sic)

Just how hard it is to control a child is illustrated in a case which he reports on two occasions. In 1966 he describes J. M. as follows: "A boy of 9, had seizures and behavioral disorder (hyperactive, combative, explosive, destructive, sadistic)." [His parentheses.]

In the tradition of Freeman's mutilation of children and aggressive adults, he simply operates and operates and operates until the child causes no more trouble. He begins with a bilateral mutilation of the thalamus, and repeats it on one side nine months later. The patient's behavior then "improves" and he

can return to special education. After a year, though, "symptoms of hyperirritability, aggressiveness, negativism, and combativeness slowly reappeared," so he was brought back and operated on more extensively, this time mutilating the fornix. Now the patient gets worse and shows signs of brain damage from the surgery in the form of the loss of recent memory. So the child's brain is mutilated a fourth time. Now, Andy tells us, "the patient has again become adjusted to his environment and has displayed a marked improvement in behavior and memory."

Because Andy repeats the same four cases in a 1970 report, we find out that J. M., this little boy of 9, had about as bad an outcome as we might have imagined. He is of course still easy to manage. "Intellectually, however, the patient is deteriorating."

Andy operates in Jackson, Mississippi, but does not tell us the race of the children he has operated on. [Subsequently, we located three children, who were black.]

Andy does not limit his brain surgery to children. The adolescents upon whom he operates, according to Jurko's letter, often have criminal records, with "explosive, impulsive and unpredictable behavior." Thus they are fulfilling Brown and Lighthill's hope for a great future for psychosurgery operating on people with criminal behavior. Jurko does not say, however, whether these adolescents are young and intelligent, as Brown and Lighthill would hope for their surgery candidates.

In the absence of an outraged response from the medical and lay public, we will probably be in for a tide of psychosurgical mutilations of children, much as we already have in India, Thailand and Japan!

Andy also operates on adults. Here is how his colleague, Jurko, pictures these adults in a letter to me: "The adults are average to above average in intelligence. Many have held jobs of responsibility prior to and even during their years of increasing discomfort (2-10 years). Most of them have a constant pain syndrome, face, chest quadrant, etc. . . . Most of them will tell you that they are tense, nervous, anxious, depressed, and have strong suicidal thoughts. Many show high specific anxiety and some have evidence of "free-floating" anxiety.

These people sound remarkably like very many psychotherapy patients prior to successful therapy.

Andy's case reports in the literature, so limited in number and simplistic in presentation, yield similar thumbnail sketches: in one case, "alcoholism, drug addiction, attempted suicide, aggressive and destructive outbursts, nervousness, and emotional instability," or in another case, "nervousness, spells of shaking all over, explosive anger, attempted suicide."

Earlier we found Brown and Lighthill advocating the use of psychosurgery for young criminals, and now we find Andy and Jurko are operating upon young individuals with criminal records. And at the time that I am making this report, a project has been uncovered in the California prison system aiming at one use of psychosurgery for the control of prison inmates (66)! A sharp

condemnatory response from the press, congressional interest, and the work of the Berkeley Medical Committee for Human Rights (Edward Opton, Jr.) has caused the project to be temporarily tabled.

### III. Newest Advances in Mind Control

The psychosurgical techniques in Part III seem especially suited to totalitarian application on a large scale for a wide variety of citizens, and so I have separated them out for special attention. Each of them has been developed for the specific purpose of controlling the individual without requiring prolonged hospitalization and without preventing him from returning to his family and his work.

The first study involves the direct use of "psychotherapy" by psychiatrists to monitor the gradual, progressive lobotomization of the individual. It first appeared in 1963 in *Current Psychiatric Therapy*, a widely read American yearbook, and it is still continuing. The work, described as "progressive leucotomy," is reported by three Britishers, H. J. Crow, R. Cooper and D. G. Phillips, Burden Neurological Institute and Frenchay Hospital, Bristol, England. The technique involves a carefully organized management of the individual patient as he undergoes progressive electrical frontal lobotomy over a period of half a year or more under the direct supervision of a "psychotherapist."

The targets of the new technique are people with "anxiety-tension states" and "obsession syndromes," particularly individuals "of good intelligence and personality," who "sometimes have heavy responsibilities." The goal is a carefully titrated lobotomy which blunts the individual's emotional responsiveness without incapacitating him in the performance of these responsibilities.

The technology utilizes 24-36 tiny electrodes which produce small coagulations of tissue when the current is turned on. After they are implanted within the frontal lobes through two holes in the skull, they can then be left in place within the brain for up to seven months, taped to the scalp in a hidden fashion which permits the patient to walk around and even to leave the hospital between his treatments. His physicians can then talk with his family and with the ward staff to evaluate how "good" his behavior has become, before subjecting him to further partial lobotomies.

That these physicians are not talking about minor damage to the brain is indicated by the admission that they "overdid it" in one of their fourteen cases, though they do not tell us what happened to the victim.

As a psychiatrist, I am haunted by one aspect of this technique, the participation of the "psychotherapist," who literally sits beside his patient conducting an interview with him while the neurosurgeons gradually turn up the electrical current. In this manner the "therapist" monitors and titrates the amount of tissue destruction required to change the patient's ongoing emotional reactions. The patient cannot tell when his brain is being coagulated, but the therapist can tell immediately, since destruction of frontal lobe tissue is immediately

reflected in a progressive loss of all those human functions related to the frontal lobes—insight, empathy, sensitivity, self-awareness, judgment, emotional responsiveness, and so on.

When Freeman and Watts (1950) operated on their patients without general anesthesia, the patients sometimes cried out that they were dying from the surgery as they felt their vital mental functions being cut away. The surgeons would then tell them to pray or to sing patriotic songs or simply ignore them while going on with the cutting.

The newer methods of these Britishers are much more subtle, but basically the same. The patient is fussed over and given reassurance. The process is so gradual and remote—controlled electrically with no obvious intervention taking place—that the patient never realizes what is happening to him. In fact, the patient gets so much attention from the ward team that other patients on the ward, who cannot discern the gradual extinction of his human qualities, ask if they can have the treatments, too.

H. J. Crow reports again on his work in 1965, and his report is noteworthy as a typical lobotomist article, all technology, a few sparse statistics about his successes, many diagrams, and *not one sentence* that could be called a clinical or human description of a patient. He continues to use “up to 34 separate small electrodes widely spread like a net across each frontal lobe,” and has added electrodes in the anterior portion of the cingulum for patients with “obsessional” symptoms, thus performing both lobotomies and cingulotomies on some of his patients.

This article not only leaves out any descriptions of the patients beyond these one and two word diagnoses (“all anxiety syndromes, some having obsessional features”). It also seems to leave out that one disastrous case which they admit they “overdid” in the first article. Thus Crow says, “Of the first 25 cases . . . all have returned to a social life which is more or less normal.”

We are told that individual and group psychotherapy goes on during the progressive lobotomization and then that intensive forms of therapy continue afterward for years. What we see described is a very directive influence, the sort we might expect would work with someone who had been brain damaged:

“From my experience, patients at this stage are amenable to, and eagerly seek advice about their future. Common-sense planning of their work and leisure, and advice about more ordinary attitudes in personal relationships, allows them to get started in a workable pattern of new life which they soon stamp with their own new and individual characteristics. They often need reassurance that an appropriate anxiety about, say, health or money is not a sign of returning illness. After an intensive course of advisory therapy an interview, often short, every month or two for half a year with lengthening intervals thereafter, is usually sufficient to help the patient to make and keep his readjustments.”

He then says that some of these patients “require support for a long time,” and goes on to describe social work, welfare, rehabilitation and psychological services, all of which may be brought to bear upon the patient.

Their lobotomized patients are thus given extensive often long-term services probably made available to very few if any other patients in Great Britain, certainly not to patients suffering from "anxiety syndromes," and yet they never once mention the possibility that whatever useful effects they achieve may be due entirely to these massive efforts mobilizing psychiatry, social work, welfare, rehabilitation and psychological services. Typically, they have no control groups with patients who are given these services without lobotomies!

If the patients are not brain damaged, why do they need such intense supportive help in the management of the details of their everyday life? Why would regular psychotherapy be contra-indicated as "unnecessary and unprofitable at this stage, and will at best delay intrapsychic and social adjustments"? Freeman and Watts also found that lobotomy patients needed daily guidance and were poor candidates for psychotherapy, but the reason was obvious in their case—the surgically damaged patients had lost the capacity for insight and judgment.

Crow reassures us that there are no bad side-effects, specifically no "insensitivity in social relationships." But a few pages after this reassurance, he tells us that the surgery sometimes produces "an over-optimistic attitude to his own capacities and to others' good will."

He also seems to imply that this may often be a "permanent euphoria" typical of brain damaged patients: "This can, of course, be a permanent euphoria, but I have seen cases where it has been a transient phenomenon and seemed to be a true joyfulness of release."

This kind of euphoria from brain damage is apparent in the two largest American studies from the 1950's: Greenblatt, Arnot and Solomon, and Freeman and Watts. Freeman and Watts' book is filled with case histories that read like classic studies of brain damaged individuals. In the other study, Harry Solomon in the introduction speaks of a "joyfulness" much as Crow does, but in a remote portion of the book the psychologist says the clinicians are too biased to be trusted and that the patients are actually brain damaged and "slap-happy." Many followup studies have found severe brain damage and deteriorating states years after lobotomy (23, 59, 61, 93).

Crow has sent me a page summary of his report at the Second International Conference on Psychosurgery, August 1970, in which he reports that he has done 103 patients since 1958. He summarizes a very naive and crude psychophysiological theory to justify his surgery, in which a specific region, "the anterior para-cingulate," is "involved in retaining mental items in consciousness, and thus to obsessionalism." Unlike some other lobotomists, he is unwilling to admit the inter-relatedness of human brain and mind functions, and the general blunting function of all psychosurgical interventions.

Implanting electrodes into the brain is at the heart of all of what is called ESB, or Electrical Stimulation of the Brain. The "stimulation" can be mild and probably reversible, or permanently destructive, depending upon the strength of the electrical current.

One of the most active ESB psychosurgeons is Robert G. Heath, Chairman and Professor of the Department of Psychiatry and Neurology at Tulane

in New Orleans. He will soon be publishing a new book as part of the revival of psychosurgery.

According to *Medical World News*, which provides a disturbing photograph of one of his patients "wired up," Heath holds this record of 125 electrode implantations at one time, a brain turned into a human pincushion. These tiny electrodes are attached to wires or injection catheters which must also pass through the brain tissue.

Heath claims that these implantations are "harmless," but in an aside he lets on that they are in fact so traumatic that "studies were not initiated until a minimal period of six months following operation, assuring elimination of any variation introduced by operative traumas, e.g., edema, anesthetic effects." 1963, p. 572. Six months is a very long recovery time for a non-traumatic procedure. But since Heath will let a patient remain wired up for years, six months may not seem a long duration to him.

The justification for this trauma to the brain is "therapy," and Heath claims that it is never done for any reason except "therapeutic." But if you read his articles, you will find *almost nothing* about therapy in them. Sometimes he doesn't even mention what disease the patient is supposed to have! And many of his "results" offer nothing more than a sentence or two about a curious response of some scientific interest elicited by an obviously non-therapeutic stimulation exercise. And in keeping with this, and typical of most modern psychosurgical literature, his emphasis is almost entirely on developing a new technology. There are pages and pages about technique for every few lines about its effects upon the patient.

In "Electrical Self-stimulation of the Brain," Heath describes individuals who wear their own self-stimulation units on their belts, transistorized packets, which they can take with them as they walk around, even as they go to work outside the hospital. These experiments often involve research into "pleasure centers" within the brain, and sometimes patients will indulge themselves at the rate of more than one thousand stimulations an hour.

In one case a man pressed one of his several buttons in a "frantic" fashion because it built him up toward a feeling of orgasm that he was never quite able to consummate. This particular man's problem was "narcolepsy," a tendency to fall asleep unexpectedly in inappropriate situations, and since he wore his pack on his belt, his friends or other patients could simply press his "wake up" button for him when he began to doze off.

Electrodes can be implanted in pain centers as well as pleasure centers. The totalitarian potential is beyond belief—a permanent set of buttons for pain and pleasure which *other people* can control. And as we'll see when we get to Delgado, these portable stimulators can be manipulated by *remote control*, even by computers at a distance!

As we will also see in Delgado's work, sexual responses seem particularly easy to elicit by ESB. Another of Heath's patients was so subject to this kind of control that he would make a sexual reference whenever one particular electrode was activated. And though Heath gives us no clinical details about this

or any other of his patients' experiences, *Medical World* reports that Heath has used these techniques to treat homosexuals and frigid women.

On rare occasions Heath elaborates a philosophical basis for his work. Writing in *The Journal of Neuropsychiatry*, for example, he takes a strong moral stand that Einstein's level of thought was better than Christine Keller's, the woman who created a scandal around her sexual activities with British politicians in 1963. Heath explains that Einstein's thought was of a higher level because Einstein's thought was less pervaded with "emotion and wishes." It is an exact equivalent of Knight's statement that "primitive emotions" are bad emotions. Not much justification for coagulating, radiating, slicing up or stimulating the brains of their patients.

Heath's concerns go far beyond the laboratory. He was elected President of the Society for Biological Psychiatry in May, 1969, at their Miami Beach annual meeting. In his presidential address, published as "Perspectives in Biological Psychiatry," he takes the stand that *all* the significant advances in psychiatry have been biological, and he postulates that so-called mental patients suffer from "inappropriate anxiety." Therefore the cure—"instantaneous replacement of irrelevant anxiety with positive pleasure feelings" by psychosurgical techniques.

He becomes quite specific in his presidential address when he talks about drug addiction. Is the root of the problem poverty and racism, since drug addiction around the world and in America is overwhelmingly a problem of the poor! No, it's not that. Is the new phenomenon of drug addiction among middle class youth related to the disaffection of youth from the society? No. Does it relate to the tremendous profits made by criminal groups from promoting drugs among the poor? No. What then is the problem of drug addiction according to Dr. Heath? Drug addiction, he says, is an attempt at self-medication for pleasure in people who have a *neurological defect in their pleasure centers!* His cure then is corrective surgery or a better, more efficient pleasure producing compound.

Three or four years ago (1968B), Heath had already reported psychosurgical operations on 58 patients, at least 44 with psychiatric illnesses. By now he has most likely done many more. But the influence of his work goes far beyond the clinical through his positions of leadership within the psychiatric world, including his directorship of the Department of Psychiatry and Neurology at Tulane.

Perhaps the first of the new batch of books on electrical psychosurgery is *Depth-Electrical Stimulation of the Human Brain* by Mayo Clinic trained C. W. Sem-Jacobsen, who has returned to Norway, where he is Medical Director, Gaustad Sykehus, Oslo. Sem-Jacobsen's book is a classic of technology devoid of human considerations. The book can be read from cover to cover without ever gaining a clear idea what purpose all this psychosurgical gadgetry will serve. His discussion of ethics is limited entirely to *medical* considerations, such as not causing undue pain, avoiding unnecessary surgery, showing concern for the patient, and the like, all admirable, but hardly inclusive when dealing with physical control of the human mind.

We learn more about Sem-Jacobsen's work from his unpublished report to the Second International Conference on Psychosurgery, and from a description

of it in *Medical World News*. He has operated on at least 132 patients for various psychiatric problems. Feeding half a dozen or more electrodes through a single hole in the skull, he can elicit, he says, almost every mood and emotion—depression, wild euphoria, grave fright, irrational confusion. His methods for treating people involve stimulating the brain electrically until the unwanted behavior is located, and then coagulating the area with electricity.

Though technologically exacting, this method must rank as one of the most anachronistic, considering the outmoded theory behind it—that so-called mental illness can be reduced to foci of disordered brain tissue. That theory was outmoded and even an embarrassment to lobotomist Freeman (1950) when Moniz first proposed it in 1935 to justify the very first mutilations on a large scale. But since Sem-Jacobsen doesn't report anything about his patients' lives—not even the usual thumbnail sketches—in his book or in any sources available to me in the literature, we have no idea what his psychosurgery is actually doing to his clients.

The political potential of lobotomy and electrical stimulation of the brain is promoted outright by Jose M. R. Delgado, Professor of Physiology at Yale University and author of the recent book *Physical Control of the Mind*, "Toward a Psychocivilized Society," published in 1969 and available in paperback. Delgado was brought to America from Spain by John Fulton, an American physiologist whose animal lobotomy experiments and whose enthusiasm for experimenting on the human brain inspired Moniz and Freeman and whose book, *Frontal Lobotomy and Affective Behavior*, praises Moniz for his courage in defying the outrage of the medical community against his brain mutilations.

Delgado's goal is nothing less than physical exploration and physical control of the mind for the advancement of civilization: "The thesis of this book is that we now possess the necessary technology for the experimental investigation of mental activities, and that we have reached a critical turning point in the evolution of man at which the mind can be used to influence its own structure, functions and purpose, thereby ensuring both the preservation and advance of civilization. The following pages contain a discussion of what the mind is, the technical problems involved in its possible control by physical means, and the outlook for development of a future psychocivilized society." P. 19-20.

Note that he is specifically talking about tampering with the "structure, functions, and purpose" of the mind and "its possible control by physical means."

After pages of documentation about what has already been done by a few investigators working with very little funds, he then proposes a giant billion dollar government investment in mind control: "National agencies should be created in order to coordinate plans, budgets, and actions just as NASA in the United States has directed public interest and technology, launching the country into the adventures and accomplishments of outer space." P. 259.

He advocates a complete educational program, from infancy and nursery through adulthood and mass education for the indoctrination of the people

into a respect for physical control of the mind: "The mass media must be mobilized for this purpose, and preparation of entertaining and informative programs should be encouraged and promoted by the neurobehavioral institutes." P. 262.

In his introductory remarks to the section on controlling "behaving subjects" he promotes the ideal of *remote control* of human beings by other human beings. He points out that we can open garage doors from a distance, adjust a television set without leaving our seat, and direct orbiting space craft from earth. Then he makes his point: "These accomplishments should familiarize us with the idea that we may also control the biological functions of living organisms from a distance. Cats, monkeys, or *human beings* can be induced to flex a limb, to reject food, or to feel emotional excitement under the influence of electrical impulses reaching the depths of their brains through radio waves purposefully sent by an investigator." P. 75. (My italic.)

But he is aware that this may disturb some of his readers, and so he denies time and again that human beings can be controlled in any "bad" ways, turning them into robots, or the like. But he says outright that the problem fascinates him and preoccupies him: ". . . we have the possibility of investigating experimentally some of the classic problems of mind-brain correlations. In addition to new answers, implanting of electrodes has introduced new problems: Is it feasible to induce a robotlike performance in animals and men by pushing buttons of a cerebral radio stimulator? Could drives, desires and thoughts be placed under the artificial command of electronics? Can personality be influenced by ESB? Can the mind be physically controlled?" P. 97.

Delgado is working on the ultimate lobotomy—direct long term physical control of human beings. He has even gone so far as to work it out cosmetically: "Some women have shown their feminine adaptability to circumstances by wearing attractive hats or wigs to conceal their electrical headgear, and many people have been able to enjoy a normal life as outpatients." P. 88.

Again, despite his denials that there is anything reminiscent of 1984 about all this, he has been working on remote control of humans by *computers* which can selectively inhibit various emotions as they are detected and recorded from brain waves: "A two-way radio communication system could be established between the brain of a subject and a computer . . . anxiety, depression, or rage could be recognized in order to trigger stimulation of specific inhibitory structures." P. 201.

While this is "speculative," it is by no means a remote possibility. Using the computerized remote control technique, they have been able to suppress the activity of a monkey's amygdala simply by putting an inhibitory or negative and painful stimulus into the brain every time the amygdala sent out any signs of activity (p. 92). The amygdala is that portion of the brain which the psychosurgeons cut out in order to tame human beings. There is no doubt that they will soon be able to do this to humans with computers and electrodes by remote control!

The experiments Delgado describes with monkeys have gone further than any he tells about with human beings, but the model can be easily transferred

to human behavior. In groups of monkeys he has been able to activate the followers to depose the leaders, and to activate the leaders in more aggressive activities against the followers.

But he and his colleagues have already done enough to show us what is in store for mankind in the "psychocivilized" society. Not only do we have the work of Heath and Sem-Jacobsen with chronically implanted electrodes and human beings working and living with self-stimulator packs on their belts, but we have the reports of Delgado himself.

In one case, a 36-year-old woman was stimulated electrically: ". . . the patient reported a pleasant tingling sensation in the left side of her body 'from my face down to the bottom of my legs.' She started giggling and making funny comments, stating that she enjoyed the sensation 'very much.' Repetition of these stimulations made the patient more communicative and flirtatious, and she ended by openly expressing her desire to marry the therapist." P. 145.

This was a woman who had no interest in her therapist and who showed no unusual behavior when not under ESB. Another woman who was "rather unreserved and poised" became "more intimate" with the therapist when under ESB: "This patient openly expressed her fondness for the therapist (who was new to her), kissed his hands, and talked about her immense gratitude for what was being done for her." P. 145.

In a third case, an 11-year-old boy who was otherwise normal in his behavior became so sexually excited about his male therapist while being stimulated electronically that he denied his identity and decided that he would rather be a girl: "Following another excitation he remarked with evident pleasure: 'You're doin' it now,' and then he said, 'I'd like to be a girl.'" P. 147.

Delgado is also able to control physical activity. In one case a patient is being stimulated and doesn't realize it, so that when the stimulation makes him turn and look around in robot-like searching behavior, he makes up explanations to justify what he is doing, such as "I heard a noise," or "I was looking under the bed" (p. 116). In another case where the client is being made to flex his hand, he is told to fight the impulse, but he cannot. He admits, "I guess, Doctor, that your electricity is stronger than my will."

In another example, Delgado shows that the subject's state of *anxiety* can sometimes be brought under the direct control of the psychosurgeon: "One could sit with one's hand on the knob and control the level of her anxiety." P. 135.

The degree of overall brain control is then alluded to in experiments which we can only imagine: "Often the patients performed automatisms such as undressing or fumbling, without remembering the incidents afterward. Some of our patients said they felt as if their minds were blank or as if they had been drinking a lot of beer." P. 174-175.

Delgado concludes his section on "Electrical Activation of the 'Will,'" with this portentous pronouncement: "We may conclude that ESB can activate and influence some of the cerebral mechanisms involved in willful behavior. In this

way we are able to investigate the neuronal functions related to the so-called will, and in the near future this experimental approach should permit clarification of such highly controversial subjects as "freedom," "individuality," and "spontaneity" in factual terms rather than in elusive semantic discussions. The possibility of influencing willful activities by electrical means has obvious ethical implications, which will be discussed later." P. 189.

Delgado does discuss these ethical implications and invokes the model of involuntary psychiatric treatment and electroshock therapy (p. 216) as justifications for going ahead with ESB control.

The degree to which Delgado wants to control people comes out most clearly as he summarizes what's wrong with current therapy and how much more effective ESB can be. "Psychoanalysis requires a long time, and a person can easily withdraw his cooperation and refuse to express intimate thoughts." P. 216.

Even electroshock is no good in part *because he can't use it on normal people*: "Electroshock is a crude method of doubtful efficacy in normal people." P. 216.

Listen to what his methods have to offer compared to analysis or shock: "Although electrical stimulation of the brain is still in the initial stage of its development, it is in contrast far more selective and powerful; it may delay a heart beat, move a finger, bring a word to memory, or set a determined behavioral tone." P. 216.

He offers us a vision of generals and armies controlled by Electrical Stimulation of the Brain—in the interest of "preventing violence" of course (p. 176). And finally leads himself into sophistries about freedom and individually which undermine the basic tenets of western political freedom: "The individual may think that the most important fact of reality is his own existence, but this is only his personal point of view, a relative frame of reference which is not shared by the rest of the living world. This self-importance also lacks historical perspective, for the brief existence of one person should be considered in the terms of the world population, mankind, and the whole universe." P. 236.

He then goes on to *attack* the notion that man has "the *right* to develop his own mind," to develop his own unique potential "while remaining independent and self sufficient." As he concludes: "This kind of liberal orientation has great appeal, but unfortunately its assumptions are not supported by neurophysiological and psychological studies of intra-cerebral mechanisms." P. 239.

Delgado is the theoretician of the lobotomists, the great apologist for Technologic Totalitarianism (17), complete with an outright attack on "liberal" politics, meaning not the liberalism of the left, but principles of personal autonomy, independence and freedom, man's "inalienable rights" as announced in the Declaration of Independence.

#### IV. Conclusions and Recommendations

All forms of psychosurgery blunt the individual's emotions and make him more docile. Each technique attacks and mutilates brain tissue that has nothing

demonstrably wrong with it, and each does this within the delicately balanced "limbic system" of the brain which harmonizes the most highly developed human capacities, including emotional responsiveness.

While the more advanced methods of brain stimulation have a greater variety of effects, to the extent that they destroy tissue within the brain, they will tend to reduce emotional responsiveness as "partial lobotomies." And of course they subject the individual to the control of others.

Scientifically, lobotomy and psychosurgery have no rational or empirical basis. Empirically, no study has ever been done involving matched control groups. That is, no one has ever taken two similar groups and subjected one to surgery and left one alone for comparison. This is the scientific method at its best and it is totally absent from the hundreds of pro-lobotomy articles in both the first and second waves of psychosurgery.

Three controlled studies have been done retrospectively matching as nearly as possible the surgical groups and the regular hospital populations upon which no surgery was done (Robin, Vosburg and McKenzie). In all three studies lobotomy was found to have no beneficial effect whatsoever. Vosburg, Moser and even pro-lobotomy followups such as Dynes and Miller found that the lobotomy surgery had left the patients with crippling brain damage. Vosburg found that the patients had surgically-produced brain damage as well as their initial psychiatric difficulties and that "In sum, they act as if they have been hurt."

The current literature is as woefully inadequate scientifically as the earlier literature, and in fact bases itself on studies by Shobe, Tooth and Newton and others which fall by every standard of scientific research.

The scientific *rationale* is no more solid than the empirical evidence. As we have seen, psychosurgery is a uniformly damaging operation—exactly what one would expect from mutilating normal brain tissue. There can be no rationale for "helping" an individual by blunting his highest adaptive mechanisms. This method simply hides the individual's failure to adapt by partially doing away with the individual's responsiveness. In every case we are dealing with the eradication of symptoms by partially eradicating the individual. To repeat the obvious, improvement in function cannot allow mutilation of the functioning brain.

In defense of psychosurgery, the alleged biological origin of "mental illness" is often raised. Elsewhere Thomas Szasz and I (14, 15, 17) have raised serious questions about the medical model for human problems. But this distinction is not even relevant here. If we grant that some problems may be biological, it makes even less sense to mutilate the biologic process. Since the brain is such a delicately balanced instrument with unimaginable interrelations, senseless mutilations of one part or another can only disrupt the harmony still further, resulting in a general subduing of the organism and a general malfunction of his adaptational processes.

Vidor describes how an artist can no longer create after the lobotomy, and the dean of lobotomists, Walter Freeman (1959), tells us how in the newer

modified lobotomies creativity is still reduced to zero: "What the investigator misses the most in the more highly intelligent individuals is the ability to introspect, to speculate, to philosophize, especially in regard to the self." P. 1526. "Creativeness seems to be the highest form of human endeavor. It requires imagination, concentration, visualization, self-criticism, and persistence in the face of frustration, as well as trained manual dexterity. . . . Theoretically, on the basis of psychologic and personality studies, creativeness should be abolished by lobotomy. . . . On the whole, psychosurgery reduces creativity, sometimes to the vanishing point." P. 1534-5.

He then says that some businessmen can return to work, but that they too are impaired: "Although they may not become leaders in their professions, they serve adequately and comfortably." P. 1535.

This is not the writing of an anti-lobotomist, but the statements of the world's most experienced psychosurgeon, an Honorary President of the new International Association for Psychosurgery. The words are written as the definitive statement on psychosurgery in the prestigious source book, *The American Handbook of Psychiatry* (1959).

Ethically, psychosurgery is equally unsound. At best it blunts the individual, and at worst, it destroys all his highest capacities. As Freeman has said on many occasions, this amounts to destroying the "self" of the individual (1950, 1959). The "self" is the ethical foundation of many modern psychological theories, where it often appears in terms of "identity" or "self-insight," and other related concepts. Similarly, psychosurgery blunts or destroys the individual's capacity for autonomy and independence (14). Crow, a very modern British psychosurgeon, describes how his clients need careful guidance and support for years after their surgery in the most simple life problems. Psychosurgery offends the whole western ethical tradition of respect for the individual.

Politically, the dangers from psychosurgery are so vast as to defy summary. In his definitive text in 1950 we can see the political function of psychosurgery in the state hospital system in terms of Freeman's first four categories of success over a fifteen year period (p. 515):

First, "older patients."

Second, women more than men.

Third, Negroes especially, particularly Negro females, his most successful group.

Fourth, "simpler" occupations.

Thus he used the surgery to blunt those people whom the society found most vulnerable and most easily returnable to relatively non-functional or low level tasks within the society.

Greenblatt, Arnot and Solomon blithely sum up that "Freeman and Watts offer the opinion that results of prefrontal lobotomy are slightly better with females, Jews and Negroes." p. 21. Freeman and Watts did not say *slightly*.

Both Freeman and Watts and Greenblatt, Arnot and Solomon in their classic studies say that a major function of state hospital lobotomy is to make it easier and economically cheaper to keep the patients institutionalized! No

wonder, as Greenblatt, Arnot and Solomon again quote their colleagues, "Freeman and Watts reported that patients showing the best post operative results were those who were confused, dull, and retarded for several days after operation," p. 23.

We are again seeing an attempt to revive the use of psychosurgery to blunt and control inmates—Andy with institutionalized children and the California prison system with difficult prisoners (66).

But the total political threat of psychosurgery is considerably larger than the institutional threat. In my newest novel, *After the War* (15), I describe a futurist use of psychosurgery for political control within the society. But while I was writing this novel, I had no idea that Delgado had already formulated a political program for the control of the society under an enormous NASA-like project for physical control of the mind. Nor did I know that he and others like Heath were already far along in experimenting with implanted electrodes for the longterm (years!) control of individuals—even by remote control! Nor did I know that a number of social, economic and political problems—drug addiction, alcoholism, homosexuality, depressions of old age—were being dealt with psychosurgically. The increasing application of these methods to "neurotics" and to people who are already well enough to work and to live with their families raises the specter of wide applications, particularly of women, who continue to be the majority of victims.

On a tape recording made for the archives of the American Psychiatric Association Museum and Library, Walter Freeman discusses the original outcry against lobotomy when it first began in Portugal (29). Dismissing this outcry, Freeman laughs and quips "Oh, there's plenty of Portuguese." This is an attitude which cannot be permitted to thrive again in America as it did in the 1940's and 1950's when 50,000 victims fell to psychosurgery. Russia outlawed lobotomy in 1950 (45). We are too far behind them in this regard.

While accepting these scientific, ethical and political objections to psychosurgery in general, some well-meaning physicians and laymen still see a use for psychosurgery in the relief of intractable pain and anxiety in terminal illness (96). But the use of psychosurgery for this purpose borders on euthanasia—a partial destruction of the responsive "self" or "identity" of the living human being—and therefore suffers from all the dangers inherent in euthanasia. But still more important, to allow its use for this one purpose opens up experimentation on thousands of dying patients and further promotes its future use for other more dangerous purposes.

Some individuals with a civil libertarian orientation also believe that, while psychosurgery is personally repugnant to them, it should nonetheless be left up to individual choice. According to this principle, involuntary psychosurgery would be abolished, but not voluntary psychosurgery. But the distinction between voluntary and involuntary becomes very blurred within psychiatry. We have already found examples of "voluntary" psychosurgery performed on a chronic gambler and upon sexual deviants who were under threat of criminal prosecution. The psychosurgery to be performed upon the prisoners in California was

also suppose to be "voluntary." And as I have analyzed in some detail (13) and described at great length in my first novel (15), so-called voluntary treatment is often forced upon the psychiatric patient by threats and outright coercion even in the best of voluntary hospitals.

There is still another reason to prohibit voluntary psychosurgery, and that has to do with its mutilating effect upon the individual's mind. To the extent that psychosurgery "blunts" the individual, I personally feel that it partially kills the individual. If we accept this concept, then we can allow the person the right to suicide or partial suicide but we cannot allow a second party to aid him in the suicide. Just as it is against the law to take a person's life even with his consent, so it should be against the law to take *part* of a person's life, even with his consent.

For these reasons, I believe that all forms of psychosurgery should be outlawed in America as they were in Russia (45). [My views have changed concerning the outlawing of psychosurgery. See my introduction.]

The outlawing of psychosurgery can be accomplished directly by federal and state legislation. It can also be accomplished indirectly by taking psychosurgeons to court when this seems warranted. Suits might be based upon any tendency to make exaggerated claims, thus leading to "uninformed consent" on the patient's part. Other suits might be brought upon the grounds that the patient has been robbed of his civil rights by being deprived of his mental capacity to exercise them.

In the meanwhile, the public must apply the sort of pressure that has brought a temporary stop to psychosurgery in the California prisons. Psychiatric hospitals, institutions for the mentally retarded and general hospitals (where most are now being performed) must prohibit psychosurgery within their walls. Hospital review committees must set up where necessary to determine if questionable cases fall into the category of psychosurgery—brain surgery which mutilates healthy tissue for the purpose of blunting emotions and controlling personal conduct.

Well over 100,000 persons have already been subjected to psychosurgery around the world, including 20,000 in England, perhaps 50,000 in America, and many more thousands in Canada. We are now in the midst of a resurgence, including psychosurgery upon hyperactive children. It is time to take action before this revival takes on the proportions of the first wave that peaked in the 1950's.

## BIBLIOGRAPHY FOR AUTHOR'S NOTE

1. Breggin, Peter R. "Psychosurgery for the Control of Violence," in *Neural Bases of Violence and Aggression*, edited by W. Fields and W. Sweet, Warren H. Green Publisher, St. Louis, Mo., 1975.
2. Breggin, Peter R. "Psychosurgery for Political Purposes," *Duquesne Law Review* 13:841-862, 1975.

3. Breggin, Peter R. *Electroshock: Its Brain-Disabling Effects*, New York: Springer Publishing Company, 1979.
4. Breggin, Peter R. "Brain-Disabling Therapies," in *The Psychosurgery Debate*, edited by E. Valenstein, San Francisco: W. H. Freeman, Publisher, 1980.
5. Breggin, Peter R. "Disabling the Brain with Electroshock," in *Divergent Views in Psychiatry*, edited by M. Dongier and E. Wittkower, Hagerstown, Maryland: Harper and Row, 1981.
6. Breggin, Peter R. "Psychosurgery as Brain-Disabling Therapy," in *Divergent Views in Psychiatry*, edited by M. Dongier and E. Wittkower, Hagerstown, Maryland: Harper and Row, 1981.
7. Breggin, Peter R. *Chemical Lobotomy: The Brain-Disabling Effects of Psychiatric Drugs* (tentative title), New York: Springer Publishing Company, 1982 (in press).

## BIBLIOGRAPHY

1. Andy, O. J., "Neurosurgical Treatment of Abnormal Behavior," *Amer. J. Med. Sci.* (1966) 252:232-238. See reference 99.
2. Andy, O. J., "Thalamotomy in Hyperactive and Aggressive Behavior," *Confin. Neurol.* (1970) 32:322-325.
3. Anonymous, "Leucotomy Today," *Lancet* (1962) 2:1037-8.
4. Anonymous, "Standard Lobotomy. The End of an Era," *Canadian Med. Assoc. J.* (1964) 91:1228-1229.
5. Anonymous, "Brain Surgery for Sexual Disorders," *Lancet* (1969) 4:250-251.
6. Bailey, Harry; Dowling, John; Swanton, Cedric; Davies, Evan, "Studies in Depression: Cingulo-tractotomy in the Treatment of Severe Affective Illness," *Med. J. of Australia* (1971) 1:8-12.
7. Baker, Earle; Young, M. D.; Gauld, D. M.; Fleming, J. F. R., "A New Look at Bimedical Prefrontal Leucotomy," *Canadian Med. Assoc. J.* (1970) 102:37-41.
8. Balasubramaniam, V.; Kanaka, T. S.; Ramanugam, P. V.; Ramanurthi, B. "Sedative Neurosurgery," *J. Indian. Med. Assoc.* (1969) 53:377-381.
9. Balasubramaniam, V.; Kanaka, T. S.; Ramanugan, P. V.; Ramanurthi, B. "Surgical Treatment of Hyperkinetic and Behavior Disorders," *Int. Surg.* (1970) 54:18-23.
10. Ballantine, Jr., H. T.; Cassidy, Walter; Flanagan, Norris; Morino, Raul, Stereotaxic Anterior Cingulotomy for Neuropsychiatric Illness and Intractable Pain," *J. Neurosurg.* (1967) 26: 488-495.
11. Barhol, H. S., "1,000 Prefrontal Lobotomies—A Five-to-ten-year Follow-up Study." *Psychiat. Quart.* (1958) 32:653-678.
12. Batchela, Ivor, *Henderson and Gillespies Textbook of Psychiatry*; Oxford Medical Publishers, 1969.
13. Breggin, Peter Roger, "Coercion of Voluntary Patients in an Open Mental Hospital," *Arch. Gen. Psychiat.* (1964) 10:173-181.
14. Breggin, Peter Roger, "Psychotherapy as Applied Ethics," *Psychiatry* (1971) 34:59-74.
15. Breggin, Peter Roger, *The Crazy from the Sane* (a novel about hospital psychiatry); Lyle Stuart, Pub., 1971. A second novel, *After the Good War* (Stein and Day, 1973) deals in part with the politics of psychiatric technology including psychosurgery (paperback edition, Popular Library, 1974).
16. Breggin, Peter Roger, "Psychosurgery," *Medical Opinion and Review*, March, 1972; also, Breggin, Peter Roger, "Second Wave," in *M/H*, March, 1973.
17. Breggin, Peter Roger, "Psychiatry as Applied Utopian Ethics," for presentation and inclusion in the *Proceedings, 4th International Congress on Social Psychiatry*, May, 1972 (in press, *Mental Health and Society*).
18. Brown, M. Hunter and Lighthill, Jack, "Selective Anterior Cingulotomy: A Psychosurgical Evaluation," *J. Neurosurg.* (1968) 29:513-519.

19. Chitanondh, H., "Stereotaxic Amygdalotomy in Treatment of Olfactory Seizures and Psychiatric Disorders with Olfactory Hallucinations," *Confin. Neurol.* (1969) 27:181-196.
20. Crow, H. J.; Cooper, R.; Phillips, D. G., "Progressive Leucotomy," in Masserman, Jules, *Current Psychiatric Therapies*, III, Grune and Stratton, 1963.
21. Crow, H. J., "Brain Surgery in the Treatment of Some Chronic Illnesses," a paper given at the British Council for Rehabilitation of the Disabled, Tavistock House (South), Tavistock Square, London, 1965. Published separately.
22. Delgado, Jose M. R., *Physical Control of the Mind—Toward a Psychocivilized Society*; Harper Colophon, 1969.
23. Dynes, John B., "Lobotomy—Twenty Years After," *Virginia Med. Quart.* (1968) 95:306-308.
24. Evans, Philip, "Failed Leucotomy with Misplaced Cuts: a clinico-anatomical study of two cases," *Brit. J. Psychiat.* (1970) 118:165-170.
25. Freeman, Walter and Watts, James, *Psychosurgery*; Charles C. Thomas, 1950.
26. Freeman, Walter, "Psychosurgery," in Arieti, S., *American Handbook of Psychiatry*, II; Basic Books, 1959.
27. Freeman, Walter, "Psychosurgery," *Am. J. Psychiat.* (1954) 121:653-655.
28. Freeman, Walter, "Recent Advances in Psychosurgery," *Med. Ann. D.C.* (1965) 34:157-160.
29. Freeman, Walter, A Taped Interview for the American Psychiatric Association Museum Library, April 17, 1968.
30. Freeman, Walter, "Frontal Lobotomy in Early Schizophrenia: Long follow-up of 415 cases," *Brit. J. Psychiat.* (1971) 119:621-4.
31. Gallagher, Cornelius, E., "Federal Funds of 283,000 to Harvard Psychologist B. F. Skinner," *Congressional Record*, H12623-12633, Dec. 15, 1971. A summary of investigations into "mind control."
32. Greenblatt, Milton; Arnot, R.; Solomon, H., *Studies in Lobotomy*, Grune and Stratton, 1950.
33. Greenblatt, Milton and Solomon H., eds., *Frontal Lobes and Schizophrenia*, Springer Publishing Co., 1953.
34. Group for the Advancement of Psychiatry, Lobotomy," in *Report #6*, 1948.
35. Hassler, R. and Dieckmann, G., "Stereotaxic Treatment of Compulsive and Obsessive Syndromes," *Confin. Neurol.* (1967) 29:153-158.
36. Heath, Robert G., "Development Toward New Physiologic Treatments in Psychiatry," *J. Neuropsychiat.* (1964) 5:318-331.
37. Heath, Robert G., "Development Toward New Physiologic Treatments in Psychiatry," *J. Neuropsychiat.* (1964) 5:318-331.
38. Heath, Robert G.; Stanley, John B.; Fontana, Charles J., "The Pleasure Response: Studies in Stereotaxic Technics in Patients," Kline and Laska, ed., *Computers and Electronic Devices in Psychiatry*; Grune and Stratton, 1968.
39. Heath, Robert G., and Guerrero-Figueroa, R., "Stimulation of the Human Brain," *Acta Neuro. Latinoamer.* (1968) 14:116-124.
40. Heath, Robert G., "Perspectives for Biological Psychiatry," *Bio. Psychiat.* (1970) 2:81-87.
41. Hirose, S., "Orbito-ventromedial Undercutting, 1957-1963," *Amer. J. Psychiat.* (1964) 121:1194-1202.
42. Holden, J. M. C.; Itil, T. M.; Hofstatter, L., "Prefrontal Lobotomy: Stepping-Stone or Pitfall?" *Amer. J. Psychiat.* (1970) 127:591-598.
43. Kalinowsky, Lothar, "Psychosurgery Panel," *Dis. Nerv. Sys.* (Feb. 1969) 30 suppl.:54-55.
44. Kalinowsky, Lothar, "Psychosurgery Said to Help in Certain Neuroses," *Psychiatric News* (1971) Vol. VI, No. 7, p. 7 (April 7).
45. Khachaturian, A. A., "A Criticism of the Theory of Leukotomy," *Neuro-patol. I. Psikhatriya* (1951) 20:#1. Microfilmed English translation, Library of Congress, TT 60-13724.

46. Knight, Geoffrey C., "Stereotaxic Tractotomy in the Surgical Treatment of Mental Illness," *J. Neurosurg. and Psychiat.* (1965) 28:304.
47. Knight, Geoffrey C., "Intractable Psychoneuroses in Elderly and Infirm—Treatment in Stereotaxic Tractotomy," *Brit. J. Geriatric Preceice* (1966) 3:7-15, 1966.
48. Knight, Geoffrey C., "Bi-frontal Stereotaxic Tractotomy: An Atraumatic Operation of Value in the Treatment of Intractable Neuroses," *Brit. J. Psychiat.* (1969) 115:257-266.
49. Lewin, W., "Observations on Selective Leucotomy," *J. Neurol. Neurosurg.* (1961) 24:37-44.
50. Lindstrom, Petter A., "Profrontal Ultrasonic Irradiation—A Substitute for Lobotomy," *A.M.A. Arch. Neurol. and Psychiat.* (1954) 72:399-425.
51. Lindstrom, Petter A.; Moench, L. G.; Roynanek, Agnes, "Prefrontal Sonic Treatment," in Masserman, J., ed., *Current Psychiatric Therapies, IV*, Grune and Stratton, 1964.
52. Livingston, Kenneth, "The Frontal Lobes Revisited. The Case for a Second Look," *Arch. Neurol.* (1969) 20:90-95.
53. Manchester *Guardian*, April 2, 1968, p. 18.
54. Mark, Vernon H.; Barry, Harbert; McLardy, Turner and Ervin, Frank, "The Destruction of Both Anterior Thalamic Nuclei in a Patient with Intractable Depression," *J. Nerv. Ment. Dis.* (1970) 150:266-272.
55. Marks, I. M.; Birley, J.; Gleden, M. G., "Modified Leucotomy in Severe Agoraphobia," *Brit. J. Psychiat.* (1965) 112:757-769.
56. McKenzie, K. G., and Kaczanowski, G., "Prefrontal Leucotomy: A Five-Year Controlled Study," *Canad. Med. Assoc. J.* (1964) 91:1193-1196.
57. *Medical World News*, "Neurosurgeons Take Route V-90 to Lobotomy," January 24, 1968, pp. H3-H4.
58. *Medical World News*, "The Lobotomists Are Coming Again," January 15, 1971, pp. 34ff.
59. Miller, A., "The Lobotomy Patients—A Decade Later," *Canad. Med. Assoc. J.* (1967) 96:1095-1103.
60. Moore, D., "Prefrontal Leucotomy," *Canad. Med. Assoc. J.* (1970) 102:876.
61. Moser, H. M., "A Ten-Year Followup of Lobotomy Patients," *Hosp. Community Psychiat.* (1969) 20:381.
62. Narabayashi, H.; Nagao, T.; Saito, Y.; Yoshido, M.; and Nagahata, M., "Stereotaxic Amygdalotomy for Behavior Disorders," *Arch. Neurol.* (1963) 9:1-17.
63. Narabayashi, H. and Uno, M., "Long Range Results of Stereotaxic Amygdalotomy for Behavior Disorders," *Confin. Neurol.* (1966) 27:168-171.
64. Narabayashi, H., "Functional Differentiation in and around the Vertical Nucleus of the Thalamus based on Experiences in Human Stereoecephalotomy," *Johns Hopkins Med. J.* (1968) 122:205-300.
65. *Newsweek*, "Probing the Brain," (Cover Story), April 21, 1971, pp. 60-77.
66. Opton, Jr., Edward, mimeographed communications on behalf of the Medical Committee for Human Rights, Berkeley, California, December 30, 1971. See also, "Doctor's Warning on Vacaville's 'Torture' Cures." The Berkeley *Barb* Dec. 2, 1971, and "Prison Reform, California Style," *d.c. gazette*, Feb. 9, 1972.
67. Personal Communication by letter.
68. Personal Communication by telephone.
69. Pippard, John, "Leucotomy in Britain Today," *J. Ment. Sci.* (1962) 108:249-255.
70. Post, F., "An Evaluation of Bimedical Leucotomy," *Brit. J. Psychiat.* (1968) 114:1223-1224.
71. *Psychiatric News*, "Psychosurgery Hailed in Experimental Texas Study," Dec. 16, 1970, p. 1. See also, *News Release*, U. Texas Medical Branch at Galveston, Sept. 9, 1970, 7 pages.
72. Rinkel, Max, *Biological Treatment of Mental Illness*; Farrar, Straus and Giroux, 1966. See p. 66 and p. 146.
73. Robin, A. A., "A Controlled Study of the Effects of Leucotomy," *J. Neurol. Neurosurg. Psychiat.* (1958) 21:262-269.

74. Roeder, F. D., "Stereotaxic Lesion of the Tuber Cinerium in Sexual Deviation," *Confin. Neurol.* (1966) 27:162-3.

75. Sano, K.; Yoshioka, M.; Ogashiwa, M.; Ishijima, B.; Ohye, C., "Postero-medical Hypothalamotomy in Treatment of Aggressive Behavior," *Confin. Neurol.* (1969) 27:164-167.

76. Sargant, W. and Slater, E., *Physical Methods of Treatment in Psychiatry*; Williams and Wilkins, 1964.

77. Scoville, William B., "Recent Thoughts on Psychosurgery," *Connect. Med.* (1969) 33:453-456.

78. Scoville, William B., ed., *Transactions of the Second International Conference on Psychosurgery*; Charles C. Thomas, in press. See reference 99.

79. Second International Conference on Psychosurgery, August 1970, Copenhagen, Denmark. Summaries furnished by participants provide the material cited. See Scoville above for in press source and see Kalinowsky (1971) for summary in print. Psychosurgeons from more than a dozen countries contributed. Now published as reference 99.

80. Sem-Jacobsen, Carl W., *Depth-Electrographic Stimulation of the Human Brain and Behavior*; Charles C. Thomas, 1968.

81. Shobe, Frank and Gildea, Margaret, "Long-Term Followup of Selected Lobotomized Patients," *JAMA* (1968) 206:327-332.

82. Slater, E., and Roth, M., *Clinical Psychiatry*. 3rd ed. Williams and Wilkins, 1969.

83. Smith, Aaron, "Selective Prefrontal Leucotomy," a letter, *Lancet* (1965) 1:765.

84. Solomon, P., and Patch, K., *Handbook of Psychiatry*, 2nd Ed., Lange, 1971.

85. Spiegel, E. A. and Wycis, H. T., *Stereencephalotomy, I*, "Thalamotomy and Related Procedures," Grune and Stratton, 1962.

86. Spiegel, E. A., Presidential Address, list Meeting Amer. Br. Int. Soc. Res. Stereencephalotomy, Atlantic City, 1968, *Confin. Neurol.* (1969) 31:5-10.

87. Spiegel, E. A., *Progress in Neurology and Psychiatry*, Grune and Stratton, 1970, see pp. 67-69.

88. Strom-Olson, R., and Carlisle, "Bifrontal Stereotactic Tractotomy: A Followup Study of Its Effects on 210 Patients," *Brit. J. Psychiat.* (1971) 118:141-154.

89. Sykes, H. K. and Tredgold, R. F., "Restricted Orbital Undercutting: A Study of Its Effects on 350 Patients Over the Years 1951-1960," *Brit. J. Psychiat.* (1964) 110:609-640.

90. Tan, E.; Marks, I. M.; Marsset, P., "Bimedial Leucotomy in Obsessive-Compulsive Neuroses," *Brit. J. Psychiat.* (1971) 118:155-164.

91. Tooth, G. C., and Newton, M. P., *Leucotomy in England and Wales*; H. M. Stationery Office, London, 1961.

92. Vidor, R., "The Situation of the Lobotomized Patient," *Psychiat. Quart.* (1963) 37:97, 104.

93. Vosburg, R., "Lobotomy in Western Pennsylvania: Looking Backward Over Ten Years," *Amer. J. Psychiat.* (1962).

94. Williams, J. M. and Freeman, W., "Evaluation of Lobotomy with Special Attention to Children." *A. Res. Nerv. Ment. Dis. Proc.* (1963) 31:311.

95. Wortis, Ed., *The Yearbook of Psychiatry and Applied Mental Health: Yearbook Medical Publishers, 1970*. Review of Brown and Lighthill Article.

96. Fedio, Paul and Ommaya, Ayoub. "Bilateral Cingulum Lesions and Stimulation in Man with Lateralized Impairment in Short Term Verbal Memory." *Experimental Neurology* (1970) 29: 84-91. This psychosurgery is being carried on at the National Institute of Neurological Disease and Stroke in Bethesda, Maryland, apparently for the relief of terminal cancer patients, and represents a more conservative approach to psychosurgery according to my initial inquiries.

97. Vaernet, K. and Madison, Anna, "Stereotactic Amygdalotomy and baso-frontal tractotomy in psychotics with Aggressive Behavior," *J. Neurol. Neurosurg. Psychiat.* (1970).

98. Breggin, Peter R., "Psychosurgery for the Control of Violence: A Critical Review." Chapter XVI in *Neural Bases of Violence and Aggression*, edited by W. Fields and W. Sweet. St. Louis, Mo., Warren H. Green, Publisher, 1975.

99. Hitchcock, et al., *Psychosurgery, 1972*, published by Charles C. Thomas, is the latest most complete pro-psychosurgery compendium with articles by Andy, Mark, Ervin and Sweet and others. An article by Ruth Anderson describes the destructive effects of the latest operations. The papers are from the Second International Congress on Psychosurgery in 1970.