

Chapter XVI

PSYCHOSURGERY FOR THE CONTROL OF VIOLENCE: A CRITICAL REVIEW

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Recent statements by lobotomists and psychosurgeons have appeared in the press and on television to the effect that lobotomy has been replaced by newer methods. Other reports say that psychosurgery is carried out under carefully controlled conditions and that it is based upon careful scientific methodology. Several other psychosurgeons have tried to give the impression that the technique is limited to individuals with brain damage, epilepsy and violence. All these statements are false.

In the *Congressional Record* of February 24, 1972, I describe in detail the return of lobotomy and psychosurgery as a treatment for psychiatric disorders in which the patient suffers from neither brain disease nor epilepsy. In the entire study involving nearly 100 papers and 1,000 recent cases in America, few of the psychosurgeons were operating on individuals with brain disease and none were basing their work on the treatment of epilepsy. In fact, only one project in America is dealing with this combination of brain disease, epilepsy and violence, and I did not discuss it in the first review in the *Record*. But the recent publicity necessitates an examination of this work by Mark and Ervin.

Concerning the self-restraint and scientific orientation of lobotomists and psychosurgeons, in the several hundred published articles by lobotomists and psychosurgeons, there are few if any that qualify as "scientific." The matched control group is the acme of the scientific method, and there are *no* such studies in the entire psychosurgical literature, except for three follow-up studies which showed that the surgery was no help and tended to produce severe side-effects, including lethargy, loss of interest in the world and intellectual deterioration.^{79,94,121,33,81,84}

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The situation has changed little since the Group for the Advancement of Psychiatry published a report condemning psychosurgery as a method whose promoters exaggerated its good effects while denying its mutilating effects upon the personality. The Group for the Advancement of Psychiatry advocated scientific research and careful controls and warned the psychosurgeons to limit their work and their claims. None of this has taken place. Mark and Ervin are the only group who have described a board whose duty it is to review surgical candidates. But their board is concerned with certifying the presence of epilepsy, and cannot stop them from doing psychosurgery on their epileptics. In general, there are no controls on the activities of surgeons, and in several centers, disheartened psychiatrists have been unable to stop the activities of psychosurgeons against whom they have strong feelings. In one medical center I have contacted, the department chairman in psychiatry did not know that the department chairman in neurosurgery was active in psychosurgery.

Because Mark and Ervin have received considerable publicity for their work on epileptics with violence, it is important to emphasize that this is the only major psychosurgical group in the country specifically tying their work to a theory of epilepsy and violence. The others are operating on patients without known brain disease and without any epileptic cause for their violence. In fact, as I describe in the *Record*, the majority of patients operated on in America are women with neurotic problems!

But the publicity given to Mark and Ervin in response to my disclosures in the *Record* necessitates a thorough examination of their work in this study. Limited as it is, it also offers unique political dangers which also require analysis. As I will try to show, they are simply performing a psychosurgical operation on violent people who also happen to have epilepsy.

Since the publication of the *Record* study, a new interest in psychosurgery for the control of violence has become apparent. Vernon Mark and Frank Ervin have drawn particular attention to brain surgery as a means of political control in their recent book, *Violence and the Brain*,⁷⁰ and in still more recent statements to the media. The president of the new International Association for Psychosurgery, William Scoville of Yale and Hartford, has also advocated the use of psychosurgery for psychopaths in Arthur Winter's new book, *The Surgical Control of Behavior*.¹²⁴

M. Hunter Brown has also advocated and described psychosurgery for psychopaths in recent publications.^{25,26,89} O. J. Andy in Mississippi has operated on adolescents with criminal records and on little children as young as age five who demonstrate aggression and hostility.^{2,4} Aarons in the *Washington Post* has disclosed the use of brain surgery on violent inmates in the California prison system, as well as proposed plans to expand this program.¹ In addition, Judy Randal of the *Washington Star* has reported that Frank Lorimer of the Illinois Prison system is advocating a similar program.¹³¹

Closely related to this "law and order" orientation, Fields has recently unearthed the use of psychosurgery on heroin addicts in Philadelphia.¹²⁸ Experimental work on psychosurgery for addiction has also been carried out in Galveston with much publicity but with no scientific reports.⁹²

The political dangers of psychosurgery for violence will be discussed in the conclusion of this study, but here it is necessary to point out that the psychosurgeons themselves have been advocating their approach for wide-scale social control. Mark, Ervin and Sweet in 1967 remarked that the Detroit riots could not have been caused by political conditions alone.⁷⁴ They conclude that violent protesters may have had brain disease, and they advocate large scale screening and treatment. In their book in 1970⁷⁶ they elaborate upon their use of electrical methods of screening and control and even take it on themselves to describe what is "unacceptable violence" in both the personal and political arena. They imply that 5 to 10 per cent of Americans have brain disease that may require treatment! Their work has obvious "law and order" appeal, and it is no surprise that they are supported in part by more than \$100,000 from the Justice Department, Law Enforcement Assistance Administration.¹³⁴

Sweet, Mark and Ervin are not alone in their interest in political applications of psychosurgery. In a recent popular paperback, Delgado of Yale has advocated "physical control of the mind," including psychosurgery, for the control of domestic and international violence in the political sphere. He wants the United States to begin a billion dollar program for physical control of the mind, complete with mass education, public school projects and research into psychosurgery.³²

As we shall see in this review, psychosurgery has a long and awesome history as a means of social control, and it is being resurrected for this purpose within our institutions and within the society at large.

It is no exaggeration to say that we are in danger of a growing use of psychosurgery to intimidate and control our population.

DEFINITION OF PSYCHOSURGERY

Psychosurgery is any surgery which mutilates or destroys brain tissue to control the emotions or behavior without treating a known brain disease. In 99 per cent of the cases, the brain surgery will actually attack normal tissue. In a few cases, some brain disease will be present, but in these instances, the brain disease will have nothing in particular to do with the symptoms which the surgery is attacking. Thus, psychosurgery is a pacifying operation which blunts the emotions and subdues behavior regardless of the presence or absence of any brain disease or any particular psychiatric problem. It is simply a mutilating operation whose effect is to destroy the individual's ability to respond emotionally.

Lobotomy, or destruction of a portion of the frontal lobes, is the original psychosurgical operation. It is still in use, as recent books by Kalinowsky⁵⁹ and Winter¹²⁴ demonstrate. Lobotomy directly impairs the highest human centers for creativity, empathy, understanding, abstract reasoning and future planning. The original lobotomy operations left the patients in a state of apathy.

Newer operations attack the brain lower down in the "limbic system." The lower down the operation, as Scoville says, the less intellectual damage and the more emotional blunting.¹⁰⁰ The basic pacification is the same, and when the operation is repeated several times, as in studies by Mark and by Andy, intellectual damage is also obvious. Since the parts of the brain attacked are all inter-related, a generalized damage to the personality must always follow the surgery.

THE FIRST MAJOR STUDIES IN LOBOTOMY

The history of lobotomy is rooted in the problems within massive state custodial institutions. The very first recorded lobotomy was done by Burckhardt in Switzerland for the specific purpose of taming some difficult patients under his care. That was in the 1890s and the outcry against these brain mutilations was so great that it was not attempted again on a significant scale until Egas Moniz, John Fulton and Walter Freeman met at a conference in 1936 and observed the effects of lobotomy on two monkeys and a man.^{36,41,43} All three sub-

jects had become somewhat demented, passive and untroubled by any degree of frustration. Within one year, Moniz had begun operating on mental hospital inmates in Portugal. His career was cut short, however, when the state hospital psychiatric director refused to let him operate any more and when a patient maimed him with five pistol shots. Moniz did live long enough to get the Nobel Prize for his efforts, but it was left to Walter Freeman to promote his work and to operate upon 4,000 Americans over two decades.

Freeman, too, had his problems. While humanist William Alanson White was superintendent at St. Elizabeth's, Freeman was barred from operating at the largest institution in his home city, Washington, D.C.⁴¹ Freeman also spoke openly about censure he met from his neurosurgical colleagues who believed that a psychiatrist should not be permitted to do major brain surgery.^{36,42} And he, too, met resistance from some of his patients, two of whom pulled guns during prelobotomy interviews.³⁸

Freeman describes in *Psychosurgery* how his very first patient fought for her life prior to surgery.

"Who is that man? What does he want here? What's he going to do to me? Tell him to go away. Oh, I don't want to see him." Then she cried out, writhing about in bed so that the nurse was scarcely able to control her sufficiently to administer avertin by rectum.

After surgery the patient becomes docile, and the first question Freeman puts to her says a great deal about lobotomy:

Q. Are you content to stay here?

A. Yes.

Q. Do you have any of your old fears?

A. No.

Q. What were you afraid of?

A. I don't know. I seem to forget. (p. xix)

Freeman describes another patient who is operated upon under local anesthesia so that he can report on what is happening to him. The patient screams, "O gee whiz, I'm dying. O doctor. Please stop. O, God."

Freeman orders the patient to sing God Bless America, then describes how the patient becomes more disoriented and passive with each "stab" into his brain.

Freeman also describes "a negress of gigantic proportions who for years was confined to a strong room at St. Elizabeth's Hospital." It takes five attendants to drag her to the operating room, but she immediately becomes passive after the surgery. The attendants are still afraid of her "300 lbs. of ferocious humanity," so Freeman puts on demonstrations of her docility:

Yet from the day after operation (and we demonstrated this repeatedly to the timorous ward personnel) we could playfully grab Oretha by the throat, twist her arm, tickle her in the ribs and slap her behind without eliciting anything more than a wide grin or a hoarse chuckle. (pp. 406-407)

Freeman makes clear that the brain damage is responsible for this docility. He advocates giving two or three electroshocks to knock difficult patients into unconsciousness, disrupting their brain patterns before the final surgical disruption. He uses this electroshock technique on both the adults and the young children upon whom he performed single and multiple lobotomies.

One six-year-old child is a difficult behavior problem for her mother, and so she is subjected to electroshock and two "radical" (large mutilations) lobotomies. After the first one, "she returned to her habit of smashing toys." After the second extensive raking of her frontal lobes, she still has a great many problems. When seen at home, "she was quite withdrawn but less troublesome." When she is seen several years later,

In spite of her increased speed and strength, she can be more easily managed at home, is beginning to put sentences together and the impulsive, destructive behavior is subsiding. (p. 444)

Writing in 1965, Freeman observes that there's no sense operating on a patient once the ward notes read "Gives no trouble on the ward." And in one of his few direct observations on the problem of law and order, he notes in the *American Handbook of Psychiatry*,

lobotomized patients seldom come into conflict with the law precisely because they lack the imagination to think up new deviltries and the energy to perpetrate them.³⁷

In 1971, Freeman is again advocating psychosurgery with pride in

its usefulness within large custodial institutions: "it proved to be the ideal operation for use in crowded state mental hospitals with a shortage of everything except patients."⁴²

The political pacification implications of Freeman's work has largely been ignored by Freeman and by critics, but they stand out in his summary of ideal surgical candidates in his textbook, *Psychosurgery*. He is obviously describing a leveling operation that controls oppressed and discarded elements of the society when he lists the following four top criteria for psychosurgical candidates: age—older; sex—female; race—black; and occupational role—the "simpler" ones. The Negro female—remember Oretha?—is described as his best patient.³⁶

Freeman's anecdotal style is complemented fully by the more scientific style of the second great classic of the lobotomy literature, *Studies in Lobotomy*, by Greenblatt, Arnot and Solomon⁴⁵ from the mecca of psychiatry at the old Boston Psychopathic Hospital, now the Massachusetts Mental Health Center, the main Harvard teaching facility. In a study of more than 200 of 500 lobotomized patients, Solomon starts off by lauding the work as "adding to the total joy of living" of their patients. But the psychologist's report, tucked away in a chapter no larger than the one on urinary problems, describes the patients as "slap-happy" from brain damage, many of them suffering from a downhill course of deteriorating brain damage. They cannot focus on their tasks and suffer from a cardinal sign of brain damage, "concrete thinking," or the inability to think abstractly. But in the conclusion to the study, Greenblatt gainsays the psychologist's report. He says outright that there's nothing necessarily wrong with "concreteness," and points out that "fewer variables concern the patient, less attention is given to the future, and the patient attends better to mundane realities." (p. 469)

Brain damage patients make good inmates!

Furthermore, after lobotomy they can at least be made to work in the demeaning jobs available within the hospital, so that "the hospital plant can be run more economically." Also, "It is gratifying to know that they are apparently more comfortable and less troublesome within the hospital." (pp. 136-137)

Some patients even get out of the hospital, but almost invariably they are women who can function as brain damaged housekeepers, "because of the devotion of the spouse, or because they have shown

some improvement mentally and were partially able to perform household duties." (p. 162) But the husbands don't agree with this improvement, and they find that these brain damaged people "cripple the group activities and spoil the freedom and happiness of the entire family." (p. 173) Besides, it is openly admitted that more wives than husbands return home because it doesn't take much "for a wife to keep house." (p. 161) Wives apparently make good inmates, even at home. Five men in the entire study are able to return home, but a scanning of the book turns up some disastrous results even in these best cases. "Even though her husband was supporting her and her children," the authors lament, one woman still declared, "I wouldn't sign permission for lobotomy on a dog." (p. 162) The authors seem to complain, "even if the dog was supporting you?" Another of these five men is lethargic around the house and terrorizes the wife with his surgically induced convulsions, while another is so bad to his children, his wife declares, "It would be better off for all of us if he were dead." (pp. 152-153) In only three instances did patients become less dependent on their families after lobotomy (p. 169)

As a pacifying operation, lobotomy at best produced docile inmates in and out of the hospital.

CURRENT LOBOTOMY AND PSYCHOSURGERY STUDIES

Pacification is equally apparent in the newer forms of lobotomy and psychosurgery. In his recent text, Kalinowsky⁹⁹ describes modern lobotomy patients as sometimes blunted and subdued, often with shallow feelings and impaired sense of self. In his articles and his recent contribution to Winter's book, Scoville speaks of lobotomy as a "blunting operation," and he includes all the newer forms of psychosurgery as "partial" lobotomies which dull the personality.^{99,100} Arthur Winter, writing with Leo Shatin, says that psychosurgical patients become "more placid—sometimes passive."¹²⁴

Operations aimed below the frontal lobes at the remainder of the limbic system produce the same effects, perhaps with less intellectual damage. Turner talks about the cingulotomy as the operation of choice for "intractable and uncontrollable aggression," independent of any brain disease. He recommends combining cingulotomy with frontal lobotomy and temporal lobotomy in people with rage, fear and depression—a kind of cranial clean out.¹¹⁹

Roeder describes the "cure" of a sexual deviant whose potency is weakened and who can no longer indulge in erotic fantasies after hypothalamotomy.⁹⁵ Sano shows how the same operation will tame aggressive and hyperactive children as young as age four. His best case, recorded in the literature and read as his one illustration at a recent conference he and I both attended:

Emotional and personality changes: the patient became markedly calm, passive and tractable, showing decreased spontaneity.⁹⁷

Sano calls it "sedative surgery."

Vernon Mark, Frank Ervin and their colleagues have also operated on the thalamus, in this instance upon a woman with "chronic intractable agitated depression."⁷⁷ This is frank, undisguised psychosurgery, for there is no pre-operative indication that the woman has any brain disease whatsoever. This is the most detailed clinical case in the entire current psychosurgical literature, and it is particularly interesting because the physicians consider it a "gratifying" example of the efficacy of psychosurgery—even though the patient became enraged at her doctors, refused further surgery, and finally killed herself the moment she began to recover from the surgery 40 days after the operation. The authors state that the suicide was further evidence that she was getting better—well enough to act upon her underlying depression—although the dynamics of her suicide seem grossly apparent and merit some description.

The authors admit that the patient and her mother are "frankly antagonistic to each other," and they describe her mother as "rigid, insensitive, and dominating." But they do not comment on their observation that the mother, along with the patient, "insisted that something be done." Nor do they comment on the fact that the patient brought the poison into the hospital with her prior to surgery, a poison her deceased father had told her about "in case she ever needed it."

She is operated on with heat coagulation of her anterior thalamus in an area which when stimulated caused the patient to look "drawn" and to cry out "Don't do that; don't do that!" After this coagulation, she shows gross brain damage: an acute brain syndrome marked by "confusion," "severe" recent memory loss and mood swings "from near euphoria to severe depression." Soon she responded to a con-

frontation with her neurosurgeon "with bristling hostility, and her anger spread to others including the psychiatrist."

Her mood swings remain unpredictable and she is operated on a second time by means of her indwelling electrode. After surgery, she continues to be hostile and the authors tell us she is "definitely paranoid." She refuses further surgery and even refuses to see her neurosurgeon ever again. She expressed "wishes that someone might 'cut her throat.'"

She continues to suffer from obvious symptoms of severe post-operative brain damage. Her recent memory is "quite impaired," as well as her remote memory; she has periods of "confusion," cannot find her way around, cannot recall names and suffers wide mood swings. When she is in a high period, clearly associated with a brain damage induced euphoria, the authors blitely quote the mother—this hostile, dominating mother—as saying "she is her old self again!"

In December, 40 days after surgery, she is finally recovering from the trauma sufficiently to become "concerned with reality problems." Her "spirits are good" and she seems to be improving, and she is given a pass to go shopping on the 44th day after surgery. She goes to a phone booth, calls her mother to say "goodbye," and kills herself with the poison she had stashed away four months earlier.

To me the clinical course speaks for itself: rage at her neurosurgeon and her psychiatrist, rage at her mother who brought her in for surgery, persistent signs of brain damage, and suicide the first few days that her confusional state begins to clear.

Orlando J. Andy at the University of Mississippi has been pacifying so-called hyperactive children with a variety of operations, including thalamotomies.⁴ He writes to me that he's operated on 30 to 40 patients, the majority children, many of the others adolescents, some with criminal records. In operating on children, his avowed purpose is to control their aggressivity and to make them more manageable. In one case, he operates upon a nine-year-old boy of normal intelligence, and after six operations and signs of gross brain damage, he becomes "adjusted." "Intellectually, however, the patient is deteriorating," Andy lets us know in 1970.

Amygdalotomy is the pacification operation par excellence and we need to look at it more closely. The amygdala is an almond sized nerve center on the inner side of the temporal lobe. Envisioning the brain as a boxing glove with two thumbs, the fingers are the frontal

lobe, and the thumbs are the temporal lobes, with the amygdala in the crease between thumb and fingers, somewhat beneath the surface of the thumb.

Anatomically it has connections to the basic structures of the limbic system, including the frontal lobes via the thalamus, and the hypothalamus as well. It is an important moderator and switchboard for the entire limbic system and hence for all emotions and drives, and even for all higher level activities through its connections to the frontal lobes. Destroying it to cure one "symptom" such as violence makes no more sense than bombing a railway center to stop one passenger on one train. The symptom may be knocked out, but many other tracks and greater numbers of humanity will be brought to a halt.

Now let us examine the specific form of psychosurgery called amygdalotomy, the method which has received so much publicity in the hands of Mark and Ervin who claim they are treating violence associated with psychomotor epilepsy. This is the same surgery which has already been used on prisoners in California.

There are dozens of animal studies which indicate that amygdalotomy pacifies the animal in the absence of any brain disease or mental illness. Now Kling⁸⁹ has shown that while the chimp makes a good inmate after amygdalotomy (but a poor learner), once the chimp is let out into the monkey tribe, he cannot survive. He is isolated and sometimes withdraws and dies. Mark and Ervin themselves describe in their book how amygdalotomy will pacify an aggressive or a frightened animal, making it tractable and easy to handle.⁷⁶ They also acknowledge in passing that amygdalotomy has been used to pacify human beings in the same manner. Furthermore, of the four cases described in detail in their book, the first three are suffering from violence which clearly has no relation to their epilepsy. They are cured of their violence without curing their epilepsy, further evidence of the psychosurgical pacification which they are inducing in their patients.

There is also a great deal of literature demonstrating that amygdalotomy pacifies human beings of every age regardless of the presence or absence of any brain disease or any particular mental illness.

Balasubramaniam is probably the most experienced surgeon in the world when it comes to amygdalotomies. His basic theoretical paper is entitled "Sedative Neurosurgery,"⁸⁸ and he states "Sedative neuro-

surgery is the term applied to that aspect of neurosurgery where a patient is made quiet and manageable by an operation." He most frequently operates on "hyperactive children" whom he describes as "restless."

Writing in July, 1970, in *International Surgery*,⁹ Balasubramaniam summarizes his results on 115 patients, three of them under age 5 and another 36 under age 11. He produces this result with his amygdalotomies and occasional hypothalamotomies:

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.

He sums up his own work: "This operation has proved to be useful in the management of patients who previously could not be managed by any other means."

In Japan, Narabayashi and Uno report on a follow-up of 27 children ages 5 to 13 who have had amygdalotomies.⁸⁶ Again the non-specific pacifying effect is apparent. 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.

In five of their many cases, this is the best result they achieved:

(they) have reached the degree of satisfactory obedience and constant, steady mood, which enabled the children to stay in their social environment, such as kindergarten or school for the feebleminded.

Chitanondh has also performed amygdalotomies on a wide variety of patients, but his scientific justification is somewhat more specific.²⁸ He operates on individuals who have a problem involving their sense of smell on the grounds that the amygdala is particularly involved in the olfactory system. In one case, his pacification is particularly apparent, as he operates on a nine-year-old boy who is involved in a struggle with his parents. They lock him up in his room but he runs away to "smell engine oil" in parked cars.

In a number of the studies we have reviewed, multiple and com-

bined operations have been used to achieve at last the proper degree of pacification. The amygdalotomy is growing in popularity now, particularly abroad, and so this operation is sometimes superimposed upon other psychosurgical operations when pacification has not been achieved. At times the amygdalotomy may simply be the last straw, but at other times it may indeed suggest a more potent effect toward pacification. But since psychosurgeons never perform controlled studies (never! not in the entire literature is there a matched control group study!) it is difficult to differentiate the pacification effect achieved by multiple operations versus amygdalotomy by itself.

Two studies indicate this problem, as well as illustrate the generalized principle that we are dealing with pacification rather than treatment of any one syndrome.

First, Vaernet reports on 12 schizophrenic patients in whom aggressive and destructive behavior was a prominent feature.¹²⁰ Five of the patients had been unsuccessfully pacified with prior lobotomies and two with prior cingulotomies, but 11 of 12 are finally pacified with amygdalotomies. In addition, two patients were given lobotomies in the modified method of Knight with radium seeds.

The second study has not been published, and I have only been able to read the 200-word summary in the programme of the Second International Conference on Psychosurgery. It is called "Neurosurgical Treatment of Aggressivity: Stereotaxic Amygdalotomy versus Leucotomy," and it is presented by J. Siegfried and A. Ben-Shmuel of Zurich.¹⁰⁵ They performed lobotomies and amygdalotomies on different patients in a non-controlled fashion, so their results are of little significance. What is interesting is that they don't even bother to mention the psychiatric diagnoses of these patients. They were all being treated for "aggressivity," and that was enough to put into the summary. No better illustration could be given of the generalized pacification sought by psychosurgeons.

VIOLENCE AND THE BRAIN: AN ANALYSIS OF THE WORK OF MARK AND ERVIN

Mark and Ervin never clearly state their hypotheses and so neither they nor their critics can clearly analyze their research work. But as the title indicates, they do hypothesize a direct connection between brain disease and a wide variety of violence that occurs in both the personal and political arena, from alcoholic outbursts, bad driving,

child murder and rape to ghetto uprisings and warfare between nations. They further hypothesize that the violence in their patients is causally related to their psychomotor epilepsy. They then claim that their successfully pacifying surgery somehow proves the link between the epileptic brain disease and the surgery—even though the brain disease is untouched by the surgery.

The most gross flaws in this study can be described in seven major categories.

First, in a book⁷⁶ devoted to amygdalotomy, they never review the existing literature on amygdalotomy, thus ignoring the body of material indicating that amygdalotomy is a pacifying operation. In one place they do mention its taming effects in animals, without drawing the logical conclusion from this. In their very brief summary of the literature, they describe only studies done on epileptics, lending the misleading impression that amygdalotomy for violence is somehow related to epilepsy.

Second, they never discuss psychosurgery in general, and do not mention that all forms of psychosurgery produce a reduction in violence, even the old fashioned lobotomy. Thus they lend the impression that their surgery is unique in kind when in fact it is at best unique only in the degree of pacification which it produces with relatively small lesions.

Third, in their clinical presentations they ignore the fact that their surgery pacifies the patient no matter what the cause of violence in the patient. In one instance the violence is a direct product of surgically induced brain damage, in another the product of diffuse brain disease, in another a possible response to the emotional frustrations of enduring psychomotor epilepsy; and in most cases, throughout the book, the picture is of a multiple causation, social, economic, personal and perhaps biological.

Fourth, in most cases the epilepsy itself is uncured by surgery, again suggesting a lack of association between the pacified aggression and the epileptic brain disease.

Fifth, in the first four cases there is no indication that the violence described is associated clinically with seizure phenomena, such as a distinct aura, automatic movements or forced actions. Nor do the authors mention in this regard that most neurologists and neurosurgeons believe that violence in association with psychomotor epilepsy is rather rare.

Sixth, their study fails to fulfill most of the qualifications ordinarily required of scientific methodology. There are no control groups and there are no attempts to prove that a group of clinicians would reach a consensus about the association of the violence with the epilepsy. There are no discussions of the difficulty of judging the importance of an electrical discharge from an area which has recently been traumatized with an electrode. There are no considerations given to the notoriously difficult task of reaching consensus on the reading of EEGs in routine clinical cases, let alone in experiments. And finally, anecdotes are mixed with observations and homelies are presented as scientific truths, with no attempt to separate experimental results from their interpretations.

Seventh, from meager unscientific evidence momentous conclusions are drawn concerning the biological nature of violence as well as the political means for its control.

They make anecdotal references to bolster the importance of their book, including the Speck murder in Chicago, rape, drunken driving, wife beating, child murder, ghetto uprisings and Viet Nam. Then they relate this to a "considerable percentage" of dangerous individuals who fall into the "5 to 10 percent of the population whose brains do not function in a perfectly normal way." (p. 5) But both their large per cent of organically damaged Americans and their assumption of organic disease as a major cause of violence are completely unsubstantiated and highly controversial assertions.

They achieve their inflated 5 to 10 per cent by listing a potpourri of syndromes, most of which have little relationship to proven brain disease, and *none* of which has proven relationship to violence. This list includes cerebral palsy, mental retardation, hyperactive behavior disorders, maternal deprivation, social deprivation and *all* head injuries sustained in accidents and in war, although they have no proof that these traumas caused longterm after-effects. Similarly, their case for relating organic disease to violence seems to rest upon scattered reports relating violence to that highly inconclusive and often incorrectly read measurement, the EEG.

When they finally discuss the basic hypothesis of their research, that there is a frequent and strong association between psychomotor epilepsy and violence, they offer no scientific evidence. They fly in the face of strong dissent from their view in traditional textbooks and in the opinions of most neurologists and psychiatrists, and yet show

no diffidence to the notorious unreliability of clinical impressions. But their entire work and enormous research funding depends upon this unproven, generally unaccepted assumption.

The first case they cite as an illustration strongly indicates, in fact, that the violence has a specific root other than the epilepsy. "Mary" has psychomotor epilepsy for 10 or more years without any associated violence. Her seizures, however, become worse and worse, and finally she becomes a menace to herself and to other people, because she starts fires when she is smoking during a seizure. Then her "violence" appears for the first time:

Worst of all, she insisted on smoking continually, even after she had started a number of small fires during her periods of unconsciousness—fires in which she herself was repeatedly burned. When anyone in her family said anything to her about her constant smoking, she would hit at them with her fists. She also used a broom handle to beat her husband on a dozen different occasions, and once attempted to stab him with a bread knife.

Eventually Mary's violence and her refusal to be reasonable about the dangers inherent in her smoking, as well as her uncontrolled attacks of epilepsy, prompted her physicians to seek a surgical opinion. (p. 64)

The tests are then described, including findings of a seizure pattern, especially in her left amygdala, and so her left amygdala is destroyed.

Now the authors write:

The initial results of this temporal lobe surgery have been gratifying. She still has seizures but her rages have disappeared. She has set no more fires, and she has become able to function once more as a housewife and mother.

Temporal lobe epilepsy, then, is an important example of a known disease that is related to violent behavior. (p. 64)

No, nothing could be further from the truth. This, their one illustrative case in the chapter, proves if anything that temporal lobe epilepsy is *not* related to violence, at least in this case. First, the patient develops her "violence" long after her history seizures. Second, the violence is not associated in any way with her seizures either temporally or clinically, but it is associated very directly with her struggle over her smoking habits and her endangering herself and others.

Third, she is brought to surgery in large part to control her violence, not her seizures. Fourth, when "cured" of her violence—pacified—her epilepsy remains unchanged. Another person has been pacified by psychosurgery—nothing more and nothing less.

The fact that she is returned to being a satisfactory housewife and mother is again typical of psychosurgery studies. Not only have the vast majority of patients been women, both in the past and in current literature, but the two most in-depth pro-lobotomy studies^{36,45} have already told us that psychosurgery is much more effective on women than on men because women can more easily be returned home to function as partially crippled, brain damaged housewives, while there are no social or occupational roles for partially crippled, brain damaged men.

The second case is also a woman and her violence is again unrelated to psychomotor epilepsy but instead develops post-operatively as a result of brain damage from a temporal lobe lobectomy. She is operated upon because she attacks hospital attendants. Her rage is also cured by amygdalotomy, but not her seizures.

The third case is a young man who is frankly psychotic and who suffers from typical paranoid suspicions and delusions. When his wife would deny his allegations, he would physically assault her, after which he would feel remorse, sob uncontrollably and eventually fall asleep.

He also appeared to have suffered brain damage from a severe blood loss earlier in life, and on occasion he was noted to have psychomotor epileptic seizures, though these are only briefly mentioned and apparently observed by only one or two people. As the authors say, "Thomas's chief problem was his violent rage."

During a period of 10 weeks of probing and stimulating his brain, they discover one area in which the patient feels *pain* and states "I am losing control," both of which are said to precede his seizures. Thomas is taken for surgery, but becomes violently opposed to it. Eventually he is talked into it. Since the operation—bilateral amygdalotomy—"Thomas has not had a single episode of rage. He continues, however, to have an occasional epileptic seizure with periods of confusion and disordered thinking." (p. 97)

The fourth case, Julia, is more complicated. She has a long history of brain disease with seizures beginning with encephalitis at age two. Sometime around or after the age of 10, she begins to have "temper

tantrums," but these are not associated with her seizures. At the age of 18, she begins to have periods of terror after which she assaults the person near to her. That she was already carrying a knife at the time of her first assault indicates a more planned process than a seizure, but there is no doubt she suffers from repeated outbreaks of panic and hostility. Nor is there any clinical evidence that her violence is a product of her seizures rather than a product of her life situation as a brain damaged person.

Of some interest, in this one case, the authors were able to observe a seizure associated with amygdala activity and followed by an outburst of violence.

After bilateral amygdalotomy, her violent episodes are reduced, but her seizures and her psychotic behavior continue.

In their four cases, the authors have demonstrated nothing more than the well-established fact that amygdalotomy, like all psychosurgery, has a pacifying effect. In addition, they have conducted many experiments on a severely brain damaged youngster who frequently becomes violent and who sometimes shows spiking and a seizure after which she becomes typically violent. The subsequent violence does not even mimic her clinical pattern in which her outbreaks follow panic states, not seizure states. So what caused her violence? Panic in the experimental situation? A disturbing sensation in her head produced by the experimental electrodes? A mimicry of something expected of her in the way of violence? Even that alternative is not out of the question, for Charcot had the entire medical profession convinced that not only violence but all psychiatric disorders sprang from epilepsy. And Charcot was unconsciously able to train all his patients to throw fits for him!¹⁰³

The importance of their much heralded finding in this girl cannot be guessed. But it can easily be over-estimated in importance.

These are the authors' *best* cases. After the first four, they go on to discuss cases of "hidden brain disease" and hidden relationships between seizures and violence!

Based upon absolutely no evidence—since they have developed none—the authors assume that the violence they have observed was related to the brain disease of their patients, in particular the epileptic feature. They then describe common features of their brain diseased patients and a prison population, and come up with the absolutely meaningless observation that these violent people have four common

characteristics—1) a history of physical assault, especially wife beating; 2) violent responses to a little drinking; 3) impulsive sexual assaults and 4) a history of traffic violations and accidents.

They call this “the dyscontrol syndrome,” but it should simply be called a list of forms of violence, for they admit that the four traits don’t necessarily present in the same person!

They then go on to repeat the obvious observation that a great deal of crime is produced by criminal repeaters, as if this somehow indicates a syndrome of biologic origin.

Then they describe a case, Tony, who has had a number of these violent and irresponsible traits, plus a history of hallucinations. We are told he once suffered a head injury while driving, but we don’t know if this was before or after the start of his chronic violence. Nor would it make much difference in proving a connection between brain disease and violence, let alone limbic system disease and violence. Besides, his neurological studies are normal.

He is started on Dilantin and then we are told it

produced a marked improvement in his behavior. We were not able to see if the improvement kept up because he refused to return for a follow-up examination and there was no way for us to compel him to continue with treatment. (p. 128)

So why do they mention this case at all? And why make it the first illustration of the correlation between a supposed “dyscontrol syndrome,” brain disease and the necessity of somatic therapy?

This book is nothing more than a collection of largely irrelevant anecdotes interspersed with a great many exhortations concerning the extent of violence all around us. It proves nothing, but does tend to illustrate the well-established fact that amygdalotomy, like all psychosurgery, has a pacifying effect upon emotions and behavior without otherwise changing psychiatric and seizure disorders.

The inexplicable fact is that Mark and Ervin must have known this before they began their research. Decades of experimentation prove that removal of the amygdala in animals usually produces a defused creature who cannot get excited about anything. Fierce animals become tame and fearful animals cease to act afraid. Placid animals lose interest in everything. An animal without its amygdala loses instinctual drive, sociability and the motivation to learn. He is

leveled off, deadened or blunted. He is, in short, less alive, but a good inmate. So it is with humans as well.

Mark and Ervin clearly recognize all this early in their book when they note that killer rats no longer attack and that fearful mallards no longer take flight, but that both become manageable after amygdalotomy, even after "normal provocation." Then they go on to say about humans:

Indeed, neurosurgeons have surgically removed areas of the amygdala to treat assaultive behavior in patients for whom this symptom was a feature of some other brain disease. (p. 28)

They do not footnote these references, ignoring them as they do when they later review the literature on humans, for this psychosurgical evidence undermines their basic hypothesis about treating psychomotor epilepsy and instead lumps them along with lobotomists and psychosurgeons who practice the art of deadening their fellow men until they can no longer respond to "normal provocation."

Mark and Ervin also fail to point out that neurosurgeons have been using amygdalotomy to pacify patients whose assaultive behavior has no relationship at all to any brain disease.^{8,9,85,86,105,120} Amygdalotomy will even undo the hostility of a patient whose anger is directed at a psychosurgeon who seeks to mutilate him. Thus psychosurgical patients rarely complain afterward—no more than a mutilated rat will fight, no more than a mutilated mallard will take flight.

The most striking exception I can recall belongs again to Mark and Ervin—their patient who killed herself after refusing to have anything to do with her neurosurgeon. Mark, Ervin and their colleagues had planned a third operation for her. Had she accepted it, she too would have stopped complaining.

DISCUSSION

A number of years ago I described how adrenaline may function as a sedative in the normal human being by crossing the blood brain barrier to calm the brain through its effects upon the trophotropic centers of the hypothalamus. I developed evidence that this adrenaline feedback mechanism led to the fatigue and exhaustion experienced during chronic anxiety and severe stress.^{15,16} It crossed my mind

at the time that we might someday develop means of reducing these inhibitory effects, thus ameliorating the debilitating effects of chronic stress and anxiety. Little did I imagine that quite the reverse would happen and that psychosurgeons would actually disrupt the balance of the hypothalamus and the limbic system to produce these same debilitating effects in order to control the hyperactive or aggressive individual. Sano has developed this to a true science in which he stimulates the hypothalamus to discover its arousal centers. Then he coagulates them, leaving the child at the mercy of an imbalance which makes him inhibited and docile.

To some degree all psychosurgery disrupts the limbic system to create this sort of imbalance. But the situation is far more complex, for the entire limbic system is integrated within itself and with the frontal lobes. Disruption within this system must do more than create an energy imbalance. It must eventually disrupt the inter-relationships between all man's higher functions in the frontal lobes and the energy centers that lie beneath. Eventually the effects will be felt in both the higher symbolic systems and the lower energy systems. When the surgery is aimed more directly at the frontal lobes, the higher symbolic functions will be more grossly disturbed. When the lower brain centers are the target, the blunting or de-energizing effect will dominate.

I believe the pacification effect of psychosurgery is now so well documented and so well understood that it is unrealistic to say that we do not know what is going on. We may not understand the exact mechanics or the details of the symbolic disruptions, but we do know that all psychosurgery destroys the capacity of the brain as an emotionally responsive organ, ultimately pacifying the individual without regard for any brain disease or psychiatric disorder.

The ethical and political implications of this pacifying operation can only be touched upon here.^{17,22}

As I have described in my first novel, *The Crazy from the Sane*,¹⁸ and in *Coercion of Voluntary Patients in an Open Hospital*,¹⁴ mental patients are so vulnerable and so easy to victimize that even the most voluntary patient in the most open hospital has little control over what happens to him. Psychosurgery will be a particular menace to these individuals. But the situation of the captive child in a state institution or the incarcerated adult in a state prison is even more disastrous. Both are entirely under the control of authorities whose major intention

is to manage them in the most economical and most efficient manner. Most of the first 50,000 victims of psychosurgery were incarcerated adult mental patients. The next 50,000 may be incarcerated children and state penitentiary prisoners.

But there is a still greater political menace in the psychosurgery movement—the danger that all of our citizens will become potential victims as the nation is turned into one large therapeutic state dominated by technological totalitarianism. This is not so far-fetched as it may seem. Thomas Szasz¹¹⁶ has already described the dangers of the therapeutic state in some depth, and I described its potential reality in my new novel, *After the Good War*²¹ including the political use of psychosurgery, before I had any inkling of the actual return of psychosurgery. But even more impressive, Sweet, Mark and Ervin have been talking in some depth about the possibilities for screening large segments of our population for possible physical control.

In both a letter to the editor of the *Journal of the American Medical Association*,⁷⁴ and in their book, Mark and Ervin advocate a national screening program for the identification and treatment of potentially violent people. And in both instances they clearly intend this as a large scale political measure. In the letter, they argue that the violence in the Detroit riots cannot be explained by environmental conditions, such as poverty and racism, because not all of the ghetto dwellers rioted and because even fewer became violent. Instead, they suggest the possibility of brain damage as a cause for rebellion, and in particular for violence, and then they advocate their screening and treatment program. In the book, they widen their interests to an “early warning” alert system whereby “unacceptable violence,” including crimes against property, can be detected and screened out for prophylactic treatment. Their definition of “unacceptable violence” applies “equally to police or public authorities as well as to politically activist groups (students, racial, etc.), and all violent acts that do not fit into this category would be ‘unacceptable.’ ”

Mark, Ervin and other psychosurgeons do have an effective pacifying operation in their hands. It has already been applied to a few prisoners in California, to aggressive epileptics in Boston, to drug addicts, alcoholics and a wide variety of neurotic and psychotic individuals around the nation. Mark, Ervin and Sweet say they want to focus their research and treatment on individuals with brain disease, but this is irrelevant. The Justice Department¹³⁹ is already in-

terested in their work and their operation will pacify anyone, with or without a brain disease or a psychiatric disorder. Jose Delgado has gone so far as to advocate a National Space Agency styled crash program pumping millions of dollars into physical control of the mind.

Even if the projects of men like Mark, Ervin and Delgado find only limited application, the presence of these projects will most certainly intimidate large portions of our population. The growth of psychosurgery brings us much closer to a future state of totalitarianism based on technological intimidation.

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129. Hampton, Jim: Eerie brain surgery. *National Observer*, March 25, 1972, p. 1. Contains considerable independently gathered opinions and reports.
 130. von Hoffman, Nicholas: Brain maim. *The Washington Post*, July 16, 1971. This was the first article in the media based on my research.
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 134. The Justice Department, Law Enforcement Assistance Administration, has given to William Sweet and to Mark and Ervin a grant of \$108,930 for the following purpose (summary from the Justice Department): "The role of neurobiological dysfunction in the violent offender. Specifically, the grantee will determine the incidence of such disorders in a state penitentiary for men; establish their prevalence in a non incarcerated population; and improve, develop and test the usefulness of electrophysiological and neurophysiological techniques for the detection of such disorders in routine examination." In addition, Vernon Mark, Frank Ervin and William Sweet have two other grants from the National Institute of Mental Health totaling more than \$500,000 and dealing with violence, epilepsy and brain surgery.