experimental situation provides a socially acceptable occasion for subjects to do what most of them would enjoy doing but fear to do: harm another person. One piece of evidence is ambiguous: subjects confronted with a victim who has "a heart condition" are less obedient, but only slightly so. Another piece of evidence unambiguously contradicts the "basic aggression" hypothesis: namely, that when subjects were allowed to decide themselves how great a shock to administer they usually restricted themselves to the lowest levels; only 5 percent chose to administer severe shocks. In support of the importance of the relationship between experimenter and subject-agent is the finding that when that is weakened, obedience is markedly reduced—as, for example, when the experimenter is out of the room and cannot observe which shock levels the subject chooses (or whether he administers shock at all); or when two experimenters issue flatly contradictory orders, making a dunce of the authority; or when an "ordinary man" not accoutered and cloaked with the authority of science tries to give the orders but is treated with contempt by the subject. Last, and very important, is the finding that when two apparent peers of the subject (actually confederates of the experimenter) who share the "teacher" role refuse to continue administering shocks, then obedience is greatly reduced. No other variation was as effective in undercutting the experimenter's authority as providing the subject with allies in rebellion.

The last chapters of the book include discussions of method and of ethical questions, with a glance at the similarities and differences between the experiment and its most popular analog, the Nazi persecutions. Milgram also examines the equally apt parallel for contemporary American society of the behavior of military inductees in South Vietnam. The section on problems of method is not simply an effective refutation of doubts about whether subjects took the experimental situation seriously and believed they were really delivering shocks. It is a compact and pointed exposition of the role that a relatively simple experimental paradigm can play, if used sensitively and flexibly, in helping to partial a complex social phenomenon into components and thereby enlarge the understanding of their relative contribution to the process—in this case, obedience. Milgram's experiment-based analysis is a model of systematic, sequential, patient pursuit of answers to a significant social problem. His investigations accomplish what we should expect of a responsible social science: to inform the intellect without trivializing the phenomenon. The research stands at the core of social psychology as a discipline: the linkage of individual (internal) states of cognition, affect, and motive with (external) social structure.

Finally, the analysis is convincing. The origins of obedience lie not in the personal characteristics of the participants, nor in the institutional auspices, nor even, indeed, in something so dramatic as a hardly repressed feral streak of aggressiveness. The analysis is correspondingly disturbing because it makes clear how banal the sociopsychological origins of obedience really are and, therefore, how chillingly commonplace obedience is likely to be in any even minimally stable society. "The culture has failed, almost entirely, in inculcating internal [to the person] controls on actions that have their origin in authority," says Milgram (p. 147); and the reader's thoughts leap at once to some of the large issues of our morally troubled times: loyalty and treason; duty and conscientious objection; civil disobedience and the maintenance of the minimal social order we need for survival. Milgram's work illuminates the psychological stress of principled dissent and its transmutation into action.

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Behavioral Surgery

Brain Control. A Critical Examination of Brain Stimulation and Psychosurgery. ELLIOT S. VALENSTEIN. Wiley-Interscience, New York, 1973. xxii, 408 pp., illus. $10.95.

We are still far from understanding how the human brain gives rise to the varied phenomena of subjective experience. Nevertheless we do know various ways in which behavior can be affected by physical manipulation of the brain, and there is a growing interest in the possibility of using such means to alter certain behavior patterns in human beings. During the last few years there has been wide-ranging controversy over the scientific and ethical aspects of behavior control. But no single aspect of behavior control technology has engendered more sustained or vehement debate than the one discussed in this book.

Brain control, as Valenstein uses the term, encompasses such techniques as electrical or chemical stimulation of discrete areas of the brain, electroconvulsive shock therapy, and psychosurgery. The last, also known as "psychiatric surgery," "mental surgery," "functional neurosurgery," and "sedative neurosurgery," is defined as the selective destruction of areas of the brain for the primary purpose of altering thoughts, emotional reactions, personality characteristics, or social response patterns (and is thus to be distinguished from other forms of neurosurgery). It is the main focus of Valenstein's excellent book.

Valenstein has succeeded in producing a scientifically accurate and well-balanced account of an exceedingly complex and many-sided issue. He offers a thorough, scholarly review of historical developments, a lucid description of the relevant electrophysiological and surgical techniques, and a critical survey of the available clinical evidence. His aim was to reach both his colleagues in the neurobehavioral sciences and a broader public audience. I believe he has surpassed that objective and has produced a book of great social importance.

In this time of acute social anxiety, when biological and behavioral scientists are being called upon increasingly to solve social problems, Valenstein has had the good sense to examine one proposed solution very carefully. The result should serve as a caution against simple-minded remedies. Some proponents of psychosurgery are attempting to treat the complex phenomenon of social conflict as if it were simply reducible to a personal brain affliction. Valenstein examines their factual evidence and finds it questionable. The book is at its best when it provides the reader with a clear summary of the background information necessary to draw his or her own conclusions. In this respect, the first 300 pages or so are superb: Valenstein gives a comprehensive recitation of results obtained in experimental animals and in human beings and raises (certainly in my mind) many serious doubts about the purported merits of brain control. Time and again he shows that psychosur-

gery has been resorted to in complete disregard or ignorance of the adverse side-effects of brain manipulations, although knowledge of them was already available from research on laboratory animals. While acknowledging the existence of some occasional and limited successes in the psychosurgical treatment of intractable mental disorders, Valenstein's account is generally critical of many "success stories" and confirms my own belief that the scientific foundations of psychosurgery are suspect and its general clinical efficacy remains unestablished.

Valenstein's scholarship is prodigious, but I was somewhat disappointed in the final 20 pages of his book. There, under the rather indecisive heading "Comments on ethical and social considerations," he confronts the complex of issues raised by the possibility of deploying various brain interventions to deal with "clinical and social problems." After saying that a main purpose of the book is to provide "the historical perspective and experimental evidence necessary for an informed discussion of the ethical and social issues," he falters before "the difficult task of setting up specific codes of conduct in this area" (p. 336).

Paralysis of social action is apt to be an accompaniment of scientific impartiality. Valenstein seems to be so committed to seeing all sides of every question that he is prevented from dealing concretely, for example, with the increasingly ominous promotion of psychosurgery as a technique of deviance control. On the one hand he is critical of the absurd view that social conflict and interpersonal violence can be generally linked to some kind of brain dysfunction. On the other hand, he has collected a mass of specific cases in which brain surgery has been promoted or employed to deal with homosexuality, drug addiction, assaultiveness, or childhood "hyperactivity." But he seems unwilling or unable to bring his two hands together, so to speak, and thus he fails to draw any general social conclusions.

On the basis of an independent analysis (*1*) which has been informed immeasurably by reading this book, I have concluded that psychosurgical practice ought to be carefully monitored by such means as the following: First, because the weight of available evidence clearly shows that present forms of psychosurgery are apt to lead, in a substantial number of cases, to marked deteriorations in behavior (including serious impairments of motivation and judgment, and other forms of social maladjustment), and because professional psychosurgeons have generally failed to provide balanced assessments of their own cases, there should be an explicit (perhaps a statutory) recognition that psychosurgery is a highly experimental procedure and not a proven therapeutic one as its proponents are wont to maintain. Second, a moratorium (*2*) should be imposed upon all psychosurgery, during which a systematic and impartial weighing of its risk and benefits, given the present state of knowledge, should be carried out. Third, a registry and assessment mechanism should be established by the medical profession or by regulatory agencies of state or federal government for the purpose of collecting and disseminating information on present and past practices in the field. Such a mechanism might also be used to further systematic studies of neurological and psychological status in surviving psychosurgery patients as well as postmortem brain examinations. Fourth, because of the difficulty of obtaining genuinely free and informed consent psychosurgery should not be performed upon children, prisoners, involuntarily held mental patients, or persons deemed to be mentally retarded (*3*). Finally, basic research on brain mechanisms and behavior should be more fully supported and extended. As Valenstein clearly demonstrates, such research, properly interpreted, offers the only way in which a rational system of physical treatment for behavioral disorders can ever be developed. More knowledge, coupled with a broader public understanding of the promises and limitations of brain science, will also help to guard against the simplistic ideas upon which so much of contemporary psychosurgery has been built.

Whatever the public policy decisions may be that finally emerge from the current controversy, I believe that they will prove unsatisfactory so long as psychosurgery continues to be considered as an isolated issue. As Valenstein points out, psychosurgery has some unique characteristics, and tends to be viewed by the public as a particularly mysterious or drastic procedure. In terms of social policy considerations, however, it is merely one in a broad spectrum of psychotechnological means of behavior control. More pertinently, it is not the only form of intervention that is currently being considered or used to deal with allegedly deviant forms of behavior. In a recent proposal (*4*) to the governors of the New England states, for example, the idea of setting up a new maximum security prison was ostensibly justified on the grounds that modern behavior control techniques are required to deal with a particularly troublesome class of so-called "special offenders." The members of this "target population" were variously and vaguely described as "aggressive," "assaultive," "volatile," "acting-out," "disruptive," "incorrigible," and "uncooperative." As in most such proposals, the possibility was ignored that prison conditions may sometimes lead to and justify the behavior so described. Similarly overlooked was the tendency among prison administrators to view as "troublesome" those inmates who become involved in efforts to reform prison life (*5*).

Psychosurgery has been proposed for and practiced upon prisoners (*6*). In the proposal just described the call was not for psychosurgery but for pharmacological and psychological techniques of behavior control. The point remains that the idea of using *some* kind of physical or chemical method to control deviant behavior has been suggested in every futuristic model of technological fascism. Valenstein has done us an important service in his examination of psychosurgery The task remains, however, of scrutinizing the whole range of psychotechnology in its present social context. If we fail to do so we may lose both our constitutional freedom and our human dignity.

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References and Notes

1. S. L. Chorover, *Boston Univ. Law Rev.*, in press.
2. See S. J. Res. 86, 93rd Congress, 1st session (1973), introduced by Senator Beall. It calls for a two-year moratorium during which the Secretary of Health, Education, and Welfare would have the available data compiled and analyzed.
3. The problems surrounding the issue of consent by involuntarily held individuals are exceedingly complex. They have been addressed in at least one case, Kaimovitz v. Department of Mental Health Civil No. 73-19434-AW (Circuit Court, Wayne County, Mich., 10 July 1973), which is discussed by Valenstein, p. 342.
4. *Summary and Recommendations of a Feasibility Study for the Development of New England Regional Programs for the Management and Treatment of Dangerous, Special Offenders* (Socio-Technical Systems Associates, Boston, 1973).
5. J. Mitford, *Kind and Usual Punishment* (Knopf, New York, 1973), pp. 95–137.
6. S. L. Chorover, *Psychol. Today* **7** (No. 5), 48 (1973).