

B. F. SKINNER

Selection from *Beyond Freedom and Dignity*

1971

B. F. Skinner (1904–90) insisted that the survival of our culture depends on the development of a technology of behavior. We must be willing to plan what human beings do, Skinner argued, and we must not flinch at the idea of subjecting human beings to control. In the selection from *Beyond Freedom and Dignity* (New York, 1971) that follows, Skinner defends this social vision against complaints to the effect that so “scientific” a view of human beings serves to diminish their humanity. Skinner developed his ideas in the course of a long and distinguished career as an experimental psychologist, working with laboratory animals as well as with human subjects. Although Skinner speaks here as an essayist and public moralist, his ideas were also set forth in a best-selling utopian novel, *Walden Two* (1948). Skinner also wrote three autobiographical volumes, *Particulars of My Life* (New York, 1976), *The Shaping of a Behaviorist* (New York, 1979), and *A Matter of Consequences* (New York, 1983).

Almost all living things act to free themselves from harmful contacts. A kind of freedom is achieved by the relatively simple forms of behavior called reflexes. A person sneezes and frees his respiratory passages from irritating substances. He vomits and frees his stomach from indigestible or poisonous food. He pulls back his hand and frees it from a sharp or hot object. More elaborate forms of behavior have similar effects. When confined, people struggle ("in rage") and break free. When in danger they flee from or attack its source. Behavior of this kind presumably evolved because of its survival value; it is as much a part of what we call the human genetic endowment as breathing, sweating, or digesting food. And through conditioning similar behavior may be acquired with respect to novel objects which could have played no role in evolution. These are no doubt minor instances of the struggle to be free, but they are significant. We do not attribute them to any love of freedom; they are simply forms of behavior which have proved useful in reducing various threats to the individual and hence to the species in the course of evolution.

A much more important role is played by behavior which weakens harmful stimuli in another way. It is not acquired in the form of conditioned reflexes, but as the product of a different process called operant conditioning. When a bit of behavior is followed by a certain kind of consequence, it is more likely to occur again, and a consequence having this effect is called a reinforcer. Food, for example, is a reinforcer to a hungry organism; anything the organism does that is followed by the receipt of food is more likely to be done again whenever the organism is hungry. Some stimuli are called negative reinforcers; any response which reduces the intensity of such a stimulus—or ends it—is more likely to be emitted when the stimulus recurs. Thus, if a person escapes from a hot sun when he moves under cover, he is more likely to move under cover when the sun is again hot. The reduction in temperature reinforces the behavior it is "contingent upon"—that is, the behavior it follows. Operant conditioning also occurs when a person simply avoids a hot sun—when, roughly speaking, he escapes from the *threat* of a hot sun.

Negative reinforcers are called aversive in the sense that they are the things organisms "turn away from." The term suggests a spatial separation—moving or running away from something—but the essential relation is temporal. In a standard apparatus used to study the process in the laboratory, an arbitrary response simply weakens an aversive stimulus or brings it to an end. A great deal of physical technology is the result of this kind of struggle for freedom. Over the centuries, in erratic ways, men have constructed a world in which they are relatively free of many kinds of threatening or harmful stimuli—extremes of temperature, sources of infection, hard labor, danger, and even those minor aversive stimuli called discomfort.

Escape and avoidance play a much more important role in the struggle for freedom when the aversive conditions are generated by other people. Other people can be aversive without, so to speak, trying: they can be rude, dangerous, contagious, or annoying, and one escapes from them or avoids them accordingly. They may also be "intentionally" aversive—that is, they may treat other people aversively because of what fol-

lows. Thus, a slave driver induces a slave to work by whipping him when he stops; by resuming work the slave escapes from the whipping (and incidentally reinforces the slave driver's behavior in using the whip). A parent nags a child until the child performs a task; by performing the task the child escapes nagging (and reinforces the parent's behavior). The blackmailer threatens exposure unless the victim pays; by paying, the victim escapes from the threat (and reinforces the practice). A teacher threatens corporal punishment or failure until his students pay attention; by paying attention the students escape from the threat of punishment (and reinforce the teacher for threatening it). In one form or another intentional aversive control is the pattern of most social coordination—in ethics, religion, government, economics, education, psychotherapy, and family life.

A person escapes from or avoids aversive treatment by behaving in ways which reinforce those who treated him aversively until he did so, but he may escape in other ways. For example, he may simply move out of range. A person may escape from slavery, emigrate or defect from a government, desert from an army, become an apostate from a religion, play truant, leave home, or drop out of a culture as a hobo, hermit, or hippie. Such behavior is as much a product of the aversive conditions as the behavior the conditions were designed to evoke. The latter can be guaranteed only by sharpening the contingencies or by using stronger aversive stimuli.

Another anomalous mode of escape is to attack those who arrange aversive conditions and weaken or destroy their power. We may attack those who crowd us or annoy us, as we attack the weeds in our garden, but again the struggle for freedom is mainly directed toward intentional controllers—toward those who treat others aversively in order to induce them to behave in particular ways. Thus, a child may stand up to his parents, a citizen may overthrow a government, a communicant may reform a religion, a student may attack a teacher or vandalize a school, and a dropout may work to destroy a culture.

It is possible that man's genetic endowment supports this kind of struggle for freedom: when treated aversively people tend to act aggressively or to be reinforced by signs of having worked aggressive damage. Both tendencies should have had evolutionary advantages, and they can easily be demonstrated. If two organisms which have been coexisting peacefully receive painful shocks, they immediately exhibit characteristic patterns of aggression toward each other. The aggressive behavior is not necessarily directed toward the actual source of stimulation; it may be "displaced" toward any convenient person or object. Vandalism and riots are often forms of undirected or misdirected aggression. An organism which has received a painful shock will also, if possible, act to gain access to another organism toward which it can act aggressively. The extent to which human aggression exemplifies innate tendencies is not clear, and many of the ways in which people attack and thus weaken or destroy the power of intentional controllers are quite obviously learned.

What we may call the "literature of freedom" has been designed to induce people to escape from or attack those who act to control them aversively. The content of the literature is the philosophy of freedom, but philosophies are among those inner causes which need to be scrutinized. We say that a person behaves in a given way because he possesses a philosophy, but we infer the philosophy from the behavior and therefore cannot use it in any satisfactory way as an explanation, at least until it is in turn

explained. The literature of freedom, on the other hand, has a simple objective status. It consists of books, pamphlets, manifestoes, speeches, and other verbal products, designed to induce people to act to free themselves from various kinds of intentional control. It does not impart a philosophy of freedom; it induces people to act.

The literature often emphasizes the aversive conditions under which people live, perhaps by contrasting them with conditions in a freer world. It thus makes the conditions more aversive, "increasing the misery" of those it is trying to rescue. It also identifies those from whom one is to escape or those whose power is to be weakened through attack. Characteristic villains of the literature are tyrants, priests, generals, capitalists, martinet teachers, and domineering parents.

The literature also prescribes modes of action. It has not been much concerned with escape, possibly because advice has not been needed; instead, it has emphasized how controlling power may be weakened or destroyed. Tyrants are to be overthrown, ostracized, or assassinated. The legitimacy of a government is to be questioned. The ability of a religious agency to mediate supernatural sanctions is to be challenged. Strikes and boycotts are to be organized to weaken the economic power which supports aversive practices. The argument is strengthened by exhorting people to act, describing likely results, reviewing successful instances on the model of the advertising testimonial, and so on.

The would-be controllers do not, of course, remain inactive. Governments make escape impossible by banning travel or severely punishing or incarcerating defectors. They keep weapons and other sources of power out of the hands of revolutionaries. They destroy the written literature of freedom and imprison or kill those who carry it orally. If the struggle for freedom is to succeed, it must then be intensified.

The importance of the literature of freedom can scarcely be questioned. Without help or guidance people submit to aversive conditions in the most surprising way. This is true even when the aversive conditions are part of the natural environment. Darwin observed, for example, that the Fuegians seemed to make no effort to protect themselves from the cold; they wore only scant clothing and made little use of it against the weather. And one of the most striking things about the struggle for freedom from intentional control is how often it has been lacking. Many people have submitted to the most obvious religious, governmental, and economic controls for centuries, striking for freedom only sporadically, if at all. The literature of freedom has made an essential contribution to the elimination of many aversive practices in government, religion, education, family life, and the production of goods.

The contributions of the literature of freedom, however, are not usually described in these terms. Some traditional theories could conceivably be said to define freedom as the absence of aversive control, but the emphasis has been on how that condition *feels*. Other traditional theories could conceivably be said to define freedom as a person's condition when he is behaving under nonaversive control, but the emphasis has been upon a state of mind associated with doing what one wants. According to John Stuart Mill, "Liberty consists in doing what one desires." The literature of freedom has been important in changing practice (it has changed practices whenever it has had any effect whatsoever), but it has nevertheless defined its task as the changing of states of mind and feelings. Freedom is a "possession." A person escapes from or destroys the power of a controller in order to feel free, and once he feels free and can do what he desires, no further action is recommended and none is prescribed by the literature of freedom, except perhaps external vigilance lest control be resumed.

The feeling of freedom becomes an unreliable guide to action as soon as would-be controllers turn to nonaversive measures, as they are likely to do to avoid the problems raised when the controllee escapes or attacks. Nonaversive measures are not as conspicuous as aversive and are likely to be acquired more slowly, but they have obvious advantages which promote their use. Productive labor, for example, was once the result of punishment: the slave worked to avoid the consequences of not working. Wages exemplify a different principle; a person is paid when he behaves in a given way so that he will continue to behave in that way. Although it has long been recognized that rewards have useful effects, wage systems have evolved slowly. In the nineteenth century it was believed that an industrial society required a hungry labor force; wages would be effective only if the hungry worker could exchange them for food. By making labor less aversive—for instance, by shortening hours and improving conditions—it has been possible to get men to work for lesser rewards. Until recently teaching was almost entirely aversive: the student studied to escape the consequences of not studying, but nonaversive techniques are gradually being discovered and used. The skillful parent learns to reward a child for good behavior rather than punish him for bad. Religious agencies move from the threat of hellfire to an emphasis on God's love, and governments turn from aversive sanctions to various kinds of inducements, as we shall note again shortly. What the layman calls a reward is a "positive reinforcer," the effects of which have been exhaustively studied in the experimental analysis of operant behavior. The effects are not as easily recognized as those of aversive contingencies because they tend to be deferred, and applications have therefore been delayed, but techniques as powerful as the older aversive techniques are now available.

A problem arises for the defender of freedom when the behavior generated by positive reinforcement has deferred aversive consequences. This is particularly likely to be the case when the process is used in intentional control, where the gain to the controller usually means a loss to the controllee. What are called conditioned positive reinforcers can often be used with deferred aversive results. Money is an example. It is reinforcing only after it has been exchanged for reinforcing things, but it can be used as a reinforcer when exchange is impossible. A counterfeit bill, a bad check, a stopped check, or an unkept promise are conditioned reinforcers, although aversive consequences are usually quickly discovered. The archetypal pattern is the gold brick. Countercontrol quickly follows: we escape from or attack those who misuse conditioned reinforcers in this way. But the misuse of many social reinforcers often goes unnoticed. Personal attention, approval, and affection are usually reinforcing only if there has been some connection with already effective reinforcers, but they can be used when a connection is lacking. The simulated approval and affection with which parents and teachers are often urged to solve behavior problems are counterfeit. So are flattery, backslapping, and many other ways of "winning friends."

Genuine reinforcers can be used in ways which have aversive consequences. A government may prevent defection by making life more interesting—by providing bread and circuses and by encouraging sports, gambling, the use of alcohol and other drugs, and various kinds of sexual behavior, where the effect is to keep people within reach of aversive sanctions. The Goncourt brothers noted the rise of pornography in the France of their day: "Pornographic literature," they wrote, "serves a Bas-Empire . . . one tames a people as one tames lions, by masturbation."

Genuine positive reinforcement can also be misused because the sheer quantity of reinforcers is not proportional to the effect on behavior. Reinforcement is usually

only intermittent, and the schedule of reinforcement is more important than the amount received. Certain schedules generate a great deal of behavior in return for very little reinforcement, and the possibility has naturally not been overlooked by would-be controllers. Two examples of schedules which are easily used to the disadvantage of those reinforced may be noted.

In the incentive system known as piece-work pay, the worker is paid a given amount for each unit of work performed. The system seems to guarantee a balance between the goods produced and the money received. The schedule is attractive to management, which can calculate labor costs in advance, and also to the worker, who can control the amount he earns. This so-called "fixed-ratio" schedule of reinforcement can, however, be used to generate a great deal of behavior for very little return. It induces the worker to work fast, and the ratio can then be "stretched"—that is, more work can be demanded for each unit of pay without running the risk that the worker will stop working. His ultimate condition—hard work with very little pay—may be acutely aversive.

A related schedule, called variable-ratio, is at the heart of all gambling systems. A gambling enterprise pays people for giving it money—that is, it pays them when they make bets. But it pays on a kind of schedule which sustains betting even though, in the long run, the amount paid is less than the amount wagered. At first the mean ratio may be favorable to the bettor; he "wins." But the ratio can be stretched in such a way that he continues to play even when he begins to lose. The stretching may be accidental (an early run of good luck which grows steadily worse may create a dedicated gambler), or the ratio may be deliberately stretched by someone who controls the odds. In the long run the "utility" is negative: the gambler loses all.

It is difficult to deal effectively with deferred aversive consequences because they do not occur at a time when escape or attack is feasible—when, for example, the controller can be identified or is within reach. But the immediate reinforcement is positive and goes unchallenged. The problem to be solved by those who are concerned with freedom is to create immediate aversive consequences. A classical problem concerns "self-control." A person eats too much and gets sick but survives to eat too much again. Delicious food or the behavior evoked by it must be made sufficiently aversive so that a person will "escape from it" by not eating it. (It might be thought that he can escape from it only before eating it, but the Romans escaped afterward through the use of a vomitorium.) Current aversive stimuli may be conditioned. Something of the sort is done when eating too much is called wrong, gluttonous, or sinful. Other kinds of behavior to be suppressed may be declared illegal and punished accordingly. The more deferred the aversive consequences the greater the problem. It has taken a great deal of "engineering" to bring the ultimate consequences of smoking cigarettes to bear on the behavior. A fascinating hobby, a sport, a love affair, or a large salary may compete with activities which would be more reinforcing in the long run, but the run is too long to make countercontrol possible. That is why countercontrol is exerted, if at all, only by those who suffer aversive consequences but are not subject to positive reinforcement. Laws are passed against gambling, unions oppose piece-work pay, and no one is allowed to pay young children to work for them or to pay anyone for engaging in immoral behavior, but these measures may be strongly opposed by those whom they are designed to protect. The gambler objects to antigambling laws and the alcoholic to any kind of prohibition; and a child or prostitute may be willing to work for what is offered.

The literature of freedom has never come to grips with techniques of control which do not generate escape or counterattack because it has dealt with the problem in terms of states of mind and feelings. In his book *Sovereignty*, Bertrand de Jouvenel quotes two important figures in that literature. According to Leibnitz, "Liberty consists in the power to do what one wants to do," and according to Voltaire, "When I can do what I want to do, there is my liberty for me." But both writers add a concluding phrase: Leibnitz, "... or in the power to want what can be got," and Voltaire, more candidly, "... but I can't help wanting what I do want." Jouvenel relegates these comments to a footnote, saying that the power to want is a matter of "interior liberty" (the freedom of the inner man!) which falls outside the "gambit of freedom."

A person wants something if he acts to get it when the occasion arises. A person who says "I want something to eat" will presumably eat when something becomes available. If he says "I want to get warm," he will presumably move into a warm place when he can. These acts have been reinforced in the past by whatever was wanted. What a person *feels* when he feels himself wanting something depends upon the circumstances. Food is reinforcing only in a state of deprivation, and a person who wants something to eat may feel parts of that state—for example, hunger pangs. A person who wants to get warm presumably feels cold. Conditions associated with a high probability of responding may also be felt, together with aspects of the present occasion which are similar to those of past occasions upon which behavior has been reinforced. Wanting is not, however, a feeling, nor is a feeling the reason a person acts to get what he wants. Certain contingencies have raised the probability of behavior and at the same time have created conditions which may be felt. Freedom is a matter of contingencies of reinforcement, not of the feelings the contingencies generate. The distinction is particularly important when the contingencies do not generate escape or counterattack.

The uncertainty which surrounds the countercontrol of nonaversive measures is easily exemplified. In the 1930's it seemed necessary to cut agricultural production. The Agricultural Adjustment Act authorized the Secretary of Agriculture to make "rental or benefit payments" to farmers who agreed to produce less—to pay the farmers, in fact, what they would have made on the food they agreed not to produce. It would have been unconstitutional to *compel* them to reduce production, but the government argued that it was merely inviting them to do so. But the Supreme Court recognized that positive inducement can be as irresistible as aversive measures when it ruled that "the power to confer or withhold unlimited benefit is the power to coerce or destroy." The decision was later reversed, however, when the Court ruled that "to hold that motive or temptation is equivalent to coercion is to plunge the law into endless difficulties." We are considering some of these difficulties.

The same issue arises when a government runs a lottery in order to raise revenue to reduce taxes. The government takes the same amount of money from its citizens in both cases, though not necessarily from the same citizens. By running a lottery it avoids certain unwanted consequences: people escape from heavy taxation by moving away or they counterattack by throwing a government which imposes new taxes out of office. A lottery, taking advantage of a stretched variable-ratio schedule of reinforcement, has neither of these effects. The only opposition comes from those who in general oppose gambling enterprises and who are themselves seldom gamblers.

A third example is the practice of inviting prisoners to volunteer for possibly dangerous experiments—for example, on new drugs—in return for better living condi-

tions or shortened sentences. Everyone would protest if the prisoners were forced to participate, but are they really free when positively reinforced, particularly when the condition to be improved or the sentence to be shortened has been imposed by the state?

The issue often arises in more subtle forms. It has been argued, for example, that uncontrolled contraceptive services and abortion do not "confer unrestricted freedom to reproduce or not to reproduce because they cost time and money." Impoverished members of society should be given compensation if they are to have a truly "free choice." If the just compensation exactly offsets the time and money needed to practice birth control, then people will indeed be free of the control exerted by the loss of time and money, but whether or not they then have children will still depend upon other conditions which have not been specified. If a nation generously reinforces the practices of contraception and abortion, to what extent are its citizens free to have or not to have children?

Uncertainty about positive control is evident in two remarks which often appear in the literature of freedom. It is said that even though behavior is completely determined, it is better that a man "feel free" or "believe that he is free." If this means that it is better to be controlled in ways which have no aversive consequences, we may agree, but if it means that it is better to be controlled in ways against which no one revolts, it fails to take account of the possibility of deferred aversive consequences. A second comment seems more appropriate: "It is better to be a conscious slave than a happy one." The word "slave" clarifies the nature of the ultimate consequences being considered: they are exploitative and hence aversive. What the slave is to be conscious of is his misery; and a system of slavery so well designed that it does not breed revolt is the real threat. The literature of freedom has been designed to make men "conscious" of aversive control, but in its choice of methods it has failed to rescue the happy slave.

One of the great figures in the literature of freedom, Jean-Jacques Rousseau, did not fear the power of positive reinforcement. In his remarkable book *Émile* he gave the following advice to teachers:

Let [the child] believe that he is always in control, though it is always you [the teacher] who really controls. There is no subjugation so perfect as that which keeps the appearance of freedom, for in that way one captures volition itself. The poor baby, knowing nothing, able to do nothing, having learned nothing, is he not at your mercy? Can you not arrange everything in the world which surrounds him? Can you not influence him as you wish? His work, his play, his pleasures, his pains, are not all these in your hands and without his knowing? Doubtless he ought to do only what he wants; but he ought to want to do only what you want him to do; he ought not to take a step which you have not foreseen; he ought not to open his mouth without your knowing what he will say.

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Rousseau could take this line because he had unlimited faith in the benevolence of teachers, who would use their absolute control for the good of their students. But . . . benevolence is no guarantee against the misuse of power, and very few figures in the history of the struggle for freedom have shown Rousseau's lack of concern. On the contrary, they have taken the extreme position that all control is wrong. In so doing they exemplify a behavioral process called generalization. Many instances of control

are aversive, in either their nature or their consequences, and hence all instances are to be avoided. The Puritans carried the generalization a step further by arguing that most positive reinforcement was wrong, whether or not it was intentionally arranged, just because it occasionally got people into trouble.

The literature of freedom has encouraged escape from or attack upon all controllers. It has done so by making any indication of control aversive. Those who manipulate human behavior are said to be evil men, necessarily bent on exploitation. Control is clearly the opposite of freedom, and if freedom is good, control must be bad. What is overlooked is control which does not have aversive consequences at any time. Many social practices essential to the welfare of the species involve the control of one person by another, and no one can suppress them who has any concern for human achievements. . . . [I]n order to maintain the position that all control is wrong, it has been necessary to disguise or conceal the nature of useful practices, to prefer weak practices just because they can be disguised or concealed, and—a most extraordinary result indeed!—to perpetuate punitive measures.

The problem is to free men, not from control, but from certain kinds of control, and it can be solved only if our analysis takes all consequences into account. How people feel about control, before or after the literature of freedom has worked on their feelings, does not lead to useful distinctions.

Were it not for the unwarranted generalization that all control is wrong, we should deal with the social environment as simply as we deal with the nonsocial. Although technology has freed men from certain aversive features of the environment, it has not freed them from the environment. We accept the fact that we depend upon the world around us, and we simply change the nature of the dependency. In the same way, to make the social environment as free as possible of aversive stimuli we do not need to destroy that environment or escape from it; we need to redesign it. . . .