Skinner BFAD

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Values

IN WHAT WE MAY CALL the prescientific view (and the word is not necessarily pejorative) a person's behavior is at least to some extent his own achievement. He is free to deliberate, decide, and act, possibly in original ways, and he is to be given credit for his successes and blamed for his failures. In the scientific view (and the word is not necessarily honorific) a person's behavior is determined by a genetic endowment traceable to the evolutionary history of the species and by the environmental circumstances to which as an individual he has been exposed. Neither view can be proved, but it is in the nature of scientific inquiry that the evidence should shift in favor of the second. As we learn more about the effects of the environment, we have less reason to attribute any part of human behavior to an autonomous controlling agent. And the second view shows a marked advantage when we begin to do something about behavior. Autonomous man is not easily changed; in fact, to the extent that he is autonomous, he is by definition not changeable at all. But the environment can be changed, and we are learning how to change it. The measures we use

are those of physical and biological technology, but we use them in special ways to affect behavior.

Something is missing in this shift from internal to external control. Internal control is presumably exerted not only by but for autonomous man. But for whom is a powerful technology of behavior to be used? Who is to use it? And to what end? We have been implying that the effects of one practice are better than those of another, but on what grounds? What is the good against which something else is called better? Can we define the good life? Or progress toward a good life? Indeed, what is progress? What, in a word, is the meaning of life, for the individual or the species?

Questions of this sort seem to point toward the future, to be concerned not with man's origins but with his destiny. They are said, of course, to involve "value judgments" —to raise questions not about facts but about how men feel about facts, not about what man *can* do but about what he *ought* to do. It is usually implied that the answers are out of reach of science. Physicists and biologists often agree, and with some justification, since their sciences do not, indeed, have the answers. Physics may tell us how to build a nuclear bomb but not whether it should be built. Biology may tell us how to control birth and postpone death but not whether we ought to do so. Decisions about the uses of science seem to demand a kind of wisdom which, for some curious reason, scientists are denied. If they are to make value judgments at all, it is only with the wisdom they share with people in general.

It would be a mistake for the behavioral scientist to agree. How people feel about facts, or what it means to feel anything, is a question for which a science of behavior

should have an answer. A fact is no doubt different from what a person feels about it, but the latter is a fact also. What causes trouble, here as elsewhere, is the appeal to what people feel. A more useful form of the question is this: If a scientific analysis can tell us how to change behavior, can it tell us what changes to make? This is a question about the behavior of those who do in fact propose and make changes. People act to improve the world and to progress toward a better way of life for good reasons, and among the reasons are certain consequences of their behavior, and among these consequences are the things people value and call good.

We may begin with some simple examples. There are things which almost everyone calls good. Some things taste good, feel good, or look good. We say this as readily as we say that they taste sweet, feel rough, or look red. Is there then some physical property possessed by all good things? Almost certainly not. There is not even any common property possessed by all sweet, rough, or red things. A gray surface looks red if we have been looking at a blue-green one; plain paper feels smooth if we have been feeling sandpaper or rough if we have been feeling plate glass; and tap water tastes sweet if we have been eating artichokes. Some part of what we call red or smooth or sweet must therefore be in the eyes or fingertips or tongue of the beholder, feeler, or taster. What we attribute to an object when we call it red, rough, or sweet is in part a condition of our own body, resulting (in these examples) from recent stimulation. Conditions of the body are much more important, and for a different reason, when we call something good.

Good things are positive reinforcers. The food that

tastes good reinforces us when we taste it. Things that feel good reinforce us when we feel them. Things that look good reinforce us when we look at them. When we say colloquially that we "go for" such things, we identify a kind of behavior which is frequently reinforced by them. (The things we call bad also have no common property. They are all negative reinforcers, and we are reinforced when we escape from or avoid them.)

When we say that a value judgment is a matter not of fact but of how someone feels about a fact, we are simply distinguishing between a thing and its reinforcing effect. Things themselves are studied by physics and biology, usually without reference to their value, but the reinforcing effects of things are the province of behavioral science, which, to the extent that it is concerned with operant reinforcement, is a science of values.

Things are good (positively reinforcing) or bad (negatively reinforcing) presumably because of the contingencies of survival under which the species evolved. There is obvious survival value in the fact that certain foods are reinforcing; it has meant that men have more quickly learned to find, grow, or catch them. A susceptibility to negative reinforcement is equally important; those who have been most highly reinforced when they have escaped from or avoided potentially dangerous conditions have enjoyed obvious advantages. As a result it is part of the genetic endowment called "human nature" to be reinforced in particular ways by particular things. (It is also part of that endowment that new stimuli become reinforcing through "respondent" conditioning—that the sight of fruit, for example, becomes reinforcing if, after looking at the fruit, we bite into it and find it good. The possibility of respondent conditioning does not change the fact that all

reinforcers eventually derive their power from evolutionary selection.)

To make a value judgment by calling something good or bad is to classify it in terms of its reinforcing effects. The classification is important, as we shall see in a moment, when reinforcers begin to be used by other people (when, for example, the verbal responses "Good!" and "Bad!" begin to function as reinforcers), but things were reinforcing long before they were called good or bad—and they are still reinforcing to animals who do not call them good or bad and to babies and other people who are not able to do so. The reinforcing effect is the important thing, but is this what is meant by "the way men feel about things"? Are things not reinforcing *because* they feel good or bad?

Feelings are said to be part of the armamentarium of autonomous man, and some further comment is in order. A person feels things within his body as he feels things on its surface. He feels a lame muscle as he feels a slap on the face, he feels depressed as he feels a cold wind. Two important differences arise from the difference in location. In the first place, he can feel things outside his skin in an active sense; he can feel a surface by running his fingers over it to enrich the stimulation he receives from it, but even though there are ways in which he can "heighten his awareness" of the things inside his body, he does not actively feel them in the same way.

A more important difference is in the way a person learns to feel things. A child learns to distinguish among different colors, tones, odors, tastes, temperatures, and so on only when they enter into contingencies of reinforcement. If red candies have a reinforcing flavor and green candies do not, the child takes and eats red candies. Some

important contingencies are verbal. Parents teach a child to name colors by reinforcing correct responses. If the child says "Blue" and the object before him is blue, the parent says "Good!" or "Right!" If the object is red, the parent says "Wrong!" This is not possible when the child is learning to respond to things inside his body. A person who is teaching a child to distinguish among his feelings is a little like a color-blind person teaching a child to name colors. The teacher cannot be sure of the presence or absence of the condition which determines whether a response is to be reinforced or not.

In general the verbal community cannot arrange the subtle contingencies necessary to teach fine distinctions among stimuli which are inaccessible to it. It must rely on visible evidence of the presence or absence of a private condition. A parent may teach a child to say "I am hungry" not because he feels what the child is feeling, but because he sees him eating ravenously or behaving in some other way related to deprivation of, or reinforcement with, food. The evidence may be good, and the child may learn to "describe his feelings" with some accuracy, but this is by no means always the case, because many feelings have inconspicuous behavioral manifestations. As a result the language of emotion is not precise. We tend to describe our emotions with terms which have been learned in connection with other kinds of things; almost all the words we use were originally metaphors.

We may teach a child to call things good by reinforcing him according to how they taste, look, or feel *to us*, but not everyone finds the same things good, and we can be wrong. The only other available evidence is from the child's behavior. If we give a child a new food and he begins to eat it actively, the first taste has obviously been reinforcing,

and we then tell him that the food is good and agree with him when he calls it good. But the child has other information. He feels other effects, and later he will call other things good if they have the same effects, even though active eating is not among them.

There is no important causal connection between the reinforcing effect of a stimulus and the feelings to which it gives rise. We might be tempted to say, following William James' reinterpretation of emotion, that a stimulus is not reinforcing because it feels good but feels good because it is reinforcing. But the "because's" are again misleading. Stimuli are reinforcing and produce conditions which are felt as good for a single reason, to be found in an evolutionary history.

Even as a clue, the important thing is not the feeling but the thing felt. It is the glass that feels smooth, not a "feeling of smoothness." It is the reinforcer that feels good, not the good feeling. Men have generalized the feelings of good things and called them pleasure and the feelings of bad things and called them pain, but we do not give a man pleasure or pain, we give him things he feels as pleasant or painful. Men do not work to maximize pleasure and minimize pain, as the hedonists have insisted; they work to produce pleasant things and to avoid painful things. Epicurus was not quite right: pleasure is not the ultimate good, pain the ultimate evil; the only good things are positive reinforcers, and the only bad things are negative reinforcers. What is maximized or minimized, or what is ultimately good or bad, are things, not feelings, and men work to achieve them or to avoid them not because of the way they feel but because they are positive or negative reinforcers. (When we call something *pleasing*, we may be reporting a feeling, but the feeling is a by-product of the fact

that a pleasing thing is quite literally a reinforcing thing. We speak of sensory *gratification* as if it were a matter of feelings, but to gratify is to reinforce, and gratitude refers to reciprocal reinforcement. We call a reinforcer *satisfying,* as if we were reporting a feeling; but the word literally refers to a change in the state of deprivation which makes an object reinforcing. To be satisfied is to be sated.)

Some of the simple goods which function as reinforcers come from other people. People keep warm or safe by keeping close together, they reinforce each other sexually, and they share, borrow, or steal each other's possessions. Reinforcement by another person need not be intentional. One person learns to clap his hands to attract the attention of another, but the other does not turn in order to induce him to clap again. A mother learns to calm a disturbed child by caressing him, but the child does not become silent to induce her to caress him again. A man learns to drive away an enemy by striking him, but the enemy does not depart to induce him to strike on another occasion. In each case we call the reinforcing action unintentional. It becomes intentional if the effect is reinforcing. A person acts intentionally, as we have seen, not in the sense that he possesses an intention which he then carries out, but in the sense that his behavior has been strengthened by consequences. A child who cries until caressed begins to cry intentionally. A boxing instructor may teach his pupil to strike him in a given way by acting as if hurt. One person is not likely to attend to another in order to induce him to clap his hands, but he may do so intentionally if that way of having one's attention called is less aversive than another.

When other people intentionally arrange and maintain contingencies of reinforcement, the person affected by the

contingencies may be said to be behaving "for the good of others." Probably the first, and still the commonest, contingencies generating such behavior are aversive. Anyone who has the necessary power can treat others aversively until they respond in ways that reinforce him. Methods using positive reinforcement are harder to learn and less likely to be used because the results are usually deferred, but they have the advantage of avoiding counterattack. Which method is used often depends upon the available power: the strong threaten physical harm, the ugly frighten, the physically attractive reinforce sexually, and the wealthy pay. Verbal reinforcers derive their power from the specific reinforcers with which they are used, and since they are used with different reinforcers from time to time, the effect may be generalized. We reinforce a person positively by saying "Good!" or "Right!" and negatively by saying "Bad!" or "Wrong!" and these verbal stimuli are effective because they have been accompanied by other reinforcers.

(A distinction may be made between the two pairs of words. Behavior is called good or bad—and the ethical overtones are not accidents—according to the way in which it is usually reinforced by others. Behavior is usually called right or wrong with respect to other contingencies. There is a right and a wrong way to do something; a given move in driving a car is right rather than merely good and another move wrong rather than merely bad. A similar distinction may be made between praise and reproof on the one hand and credit and blame on the other. We praise and reprove people in general when their behavior is positively or negatively reinforcing to us, with no reference to the products of their behavior, but when we give a man credit *for* an achievement or blame him *for* trouble, we point to the

achievement or the trouble and emphasize that they are indeed the consequences of his behavior. We use "Right!" and "Good!" almost interchangeably, however, and the distinction between praising and giving credit is perhaps not always worth making.)

The effect of a reinforcer which cannot be attributed to its survival value in the course of evolution (the effect of heroin, for example) is presumably anomalous. Conditioned reinforcers may seem to suggest other kinds of susceptibilities, but they are effective because of circumstances in a person's earlier history. According to Dodds, the Homeric Greek fought with inspired zeal to achieve not happiness but the esteem of his fellow men. Happiness may be taken to represent the personal reinforcers which can be attributed to survival value and esteem some of the conditioned reinforcers used to induce a person to behave for the good of others, but all conditioned reinforcers derive their power from personal reinforcers (in traditional terms, public interest is always based on private interest) and hence from the evolutionary history of the species.

How one feels about behaving for the good of others depends upon the reinforcers used. Feelings are by-products of the contingencies and throw no further light on the distinction between public and private. We do not say that simple biological reinforcers are effective because of self-love, and we should not attribute behaving for the good of others to a love of others. In working for the good of others a person may feel love or fear, loyalty or obligation, or any other condition arising from the contingencies responsible for the behavior. A person does not act for the good of others because of a feeling of belongingness or refuse to act because of feelings of alienation. His behavior depends upon the control exerted by the social environment.

When one person is induced to act for the good of another, we may ask whether the result is fair or just. Are the goods received by the two parties commensurate? When one person controls another aversively, there is no commensurate good, and positive reinforcers may also be used in such a way that the gains are far from equal. Nothing in the behavioral processes guarantees fair treatment, since the amount of behavior generated by a reinforcer depends upon the contingencies in which it appears. In an extreme case a person may be reinforced by others on a schedule which costs him his life. Suppose, for example, that a group is threatened by a predator (the "monster" of mythology). Someone possessing special strength or skill attacks and kills the monster or drives him away. The group, released from threat, reinforces the hero with approval, praise, honor, affection, celebrations, statues, arches of triumph, and the hand of the princess. Some of this may be unintentional, but it is nevertheless reinforcing to the hero. Some may be intentional—that is, the hero is reinforced precisely to induce him to take on other monsters. The important fact about such contingencies is that the greater the threat, the greater the esteem accorded the hero who alleviates it. The hero therefore takes on more and more dangerous assignments until he is killed. The contingencies are not necessarily social; they are found in other dangerous activities such as mountain climbing, where the release from threat becomes more reinforcing the greater the threat. (That a behavioral process should thus go wrong and lead to death is no more a violation of the principle of natural selection than the phototropic behavior of the moth, which has survival value when it leads the moth into sunlight but proves lethal when it leads into flame.)

As we have seen, the issue of fairness or justice is often simply a matter of good husbandry. The question is whether reinforcers are being used wisely. Two other words long associated with value judgments but not so clearly a matter of husbandry are "should" and "ought." We use them to clarify nonsocial contingencies. "To get to Boston you should (you ought to) follow Route 1" is simply a way of saying "If you will be reinforced by reaching Boston, you will be reinforced if you follow Route 1." To say that following Route 1 is the "right" way to get to Boston is not an ethical or moral judgment but a statement about a highway system. Something closer to a value judgment may seem to be present in such an expression as "You should (you ought to) read *David Copperfield*," which may be translated, "You will be reinforced if you read *David Copperfield*." It is a value judgment to the extent that it implies that the book will be reinforcing. We can bring the implication into the open by mentioning some of our evidence: "If you enjoyed *Great Expectations*, you should (you ought to) read *David Copperfield*." This value judgment is correct if it is generally true that those who are reinforced by *Great Expectations* are also reinforced by *David Copperfield*.

"Should" and "ought" begin to raise more difficult questions when we turn to the contingencies under which a person is induced to behave for the good of others. "You should (you ought to) tell the truth" is a value judgment to the extent that it refers to reinforcing contingencies. We might translate it as follows: "If you are reinforced by the approval of your fellow men, you will be reinforced when you tell the truth." The value is to be found in the social contingencies maintained for purposes of control. It is an ethical or moral judgment in the sense that ethos

and mores refer to the customary practices of a group.

This is an area in which it is easy to lose sight of the contingencies. A person drives a car well because of the contingencies of reinforcement which have shaped and which maintain his behavior. The behavior is traditionally explained by saying that he possesses the knowledge or skill needed to drive a car, but the knowledge and skill must then be traced to contingencies that might have been used to explain the behavior in the first place. We do not say that a person does what he "ought to do" in driving a car because of any inner sense of what is right. We are likely to appeal to some such inner virtue, however, to explain why a person behaves well with respect to his fellow men, but he does so not because his fellow men have endowed him with a sense of responsibility or obligation or with loyalty or respect for others but because they have arranged effective social contingencies. The behaviors classified as good or bad and right or wrong are not due to goodness or badness, or a good or bad character, or a knowledge of right and wrong; they are due to contingencies involving a great variety of reinforcers, including the generalized verbal reinforcers of "Good!" "Bad!" "Right!" and "Wrong!"

Once we have identified the contingencies that control the behavior called good or bad and right or wrong, the distinction between facts and how people feel about facts is clear. How people feel about facts is a by-product. The important thing is what they do about them, and what they do is a fact that is to be understood by examining relevant contingencies. Karl Popper has stated a contrary traditional position as follows:

> In face of the sociological fact that most people adopt the norm "Thou shalt not steal," it is still possible to

> decide to adopt either this norm, or its opposite; and it is possible to encourage those who have adopted the norm to hold fast to it, or to discourage them, and to persuade them to adopt another norm. *It is impossible to derive a sentence stating a norm or a decision from a sentence stating a fact;* this is only another way of saying that it is impossible to derive norms or decisions from facts.

The conclusion is valid only if indeed it is "possible to adopt a norm or its opposite." Here is autonomous man playing his most awe-inspiring role, but whether or not a person obeys the norm "Thou shalt not steal" depends upon supporting contingencies, which must not be overlooked.

Some relevant facts may be cited. Long before anyone formulated the "norm," people attacked those who stole from them. At some point stealing came to be called wrong and as such was punished even by those who had not been robbed. Someone familiar with these contingencies, possibly from having been exposed to them, could then advise another person: "Don't steal." If he had sufficient prestige or authority, he would not need to describe the contingencies further. The stronger form, "Thou shalt not steal," as one of the Ten Commandments, suggests supernatural sanctions. Relevant social contingencies are implied by "You ought not to steal," which could be translated, "If you tend to avoid punishment, avoid stealing," or "Stealing is wrong, and wrong behavior is punished." Such a statement is no more normative than "If coffee keeps you awake when you want to go to sleep, don't drink it."

A rule or law includes a statement of prevailing contingencies, natural or social. One may follow a rule or obey a law simply because of the contingencies to which the rule

or law refers, but those who formulate rules and laws usually supply additional contingencies. A construction worker follows a rule by wearing a hard hat. The natural contingencies, which involve protection from falling objects, are not very effective, and the rule must therefore be enforced: those who do not wear hard hats will be discharged. There is no *natural* connection between wearing a hard hat and keeping a job; the contingency is maintained to support the natural but less effective contingencies involving protection from falling objects. A parallel argument could be made for any rule involving social contingencies. In the long run people behave more effectively if they have been told the truth, but the gains are too remote to affect the truthteller, and additional contingencies are needed to maintain the behavior. Telling the truth is therefore called good. It is the right thing to do, and telling lies is bad and wrong. The "norm" is simply a statement of the contingencies.

Intentional control "for the good of others" becomes more powerful when it is exercised by religious, governmental, economic, and educational organizations. A group maintains some kind of order by punishing its members when they misbehave, but when this function is taken over by a government, punishment is assigned to specialists, to whom more powerful forms such as fines, imprisonment, or death are available. "Good" and " bad" become "legal" and "illegal," and the contingencies are codified in laws specifiying behavior and contingent punishments. Laws are useful to those who must obey them because they specify the behavior to be avoided, and they are useful to those who enforce them because they specify the behavior to be punished. The group is replaced by a much more

sharply defined agency—a state or nation—whose authority or power to punish may be signalized with ceremonies, flags, music, and stories about prestigious law-abiding citizens and notorious lawbreakers.

A religious agency is a special form of government under which "good" and "bad" become "pious" and "sinful." Contingencies involving positive and negative reinforcement, often of the most extreme sort, are codified—for example, as commandments— and maintained by specialists, usually with the support of ceremonies, rituals, and stories. Similarly, where the members of an unorganized group exchange goods and services under informal contingencies, an economic institution or agency clarifies special roles—such as those of employer, worker, buyer, and seller—and constructs special types of reinforcers, such as money and credit. Contingencies are described in agreements, contracts, and so on. Similarly, the members of an informal group learn from each other with or without intentional instruction, but organized education employs specialists called teachers, who operate in special places called schools, by arranging contingencies involving special reinforcers such as grades and diplomas. "Good" and "bad" become "right" and "wrong," and the behavior to be learned may be codified in syllabuses and tests.

As organized agencies induce people to behave "for the good of others" more effectively, they change what is felt. A person does not support his government because he is loyal but because the government has arranged special contingencies. We call him loyal and teach him to call himself loyal and to report any special conditions he may feel as "loyalty." A person does not support a religion because he is devout; he supports it because of the contingencies arranged by the religious agency. We call him devout and

teach him to call himself devout and report what he feels as "devotion." Conflicts among feelings, as in the classical literary themes of love versus duty or patriotism versus faith, are really conflicts between contingencies of reinforcement.

As the contingencies which induce a man to behave "for the good of others" become more powerful, they overshadow contingencies involving personal reinforcers. They may then be challenged. Challenge is, of course, a metaphor which suggests a match or battle, and what people actually do in response to excessive or conflicting control can be more explicitly described. We saw the pattern in the struggle for freedom in Chapter 2. A person may defect from a government, turning to the informal control of a smaller group or to a Thoreauvian solitude. He may become an apostate from orthodox religion, turning to the ethical practices of an informal group or the seclusion of a hermitage. He may escape from organized economic control, turning to an informal exchange of goods and services or a solitary subsistence. He may abandon the organized knowledge of scholars and scientists, in favor of personal experience (turning from *Wissen* to *Verstehen*). Another possibility is to weaken or destroy those who impose the control, possibly by setting up a competing system.

These moves are often accompanied by verbal behavior which supports nonverbal action and induces others to participate. The value or validity of the reinforcers used by other people and by organized agencies may be questioned: "Why should I seek the admiration or avoid the censure of my fellow men?" "What can my government—or any government—really do to me?" "Can a church actually determine whether I am to be eternally damned or

blessed?" "What is so wonderful about money—do I need all the things it buys?" "Why should I study the things set forth in a college catalogue?" In short, "Why should I behave 'for the good of others'?"

When the control exercised by others is thus evaded or destroyed, only the personal reinforcers are left. The individual turns to immediate gratification, possibly through sex or drugs. If he does not need to do much to find food, shelter, and safety, little behavior will be generated. His condition is then described by saying that he is suffering from a lack of values. As Maslow pointed out, valuelessness is "variously described as anomie, amorality, anhedonia, rootlessness, emptiness, hopelessness, the lack of something to believe in and be devoted to." These terms all seem to refer to feelings or states of mind, but what are missing are effective reinforcers. Anomie and amorality refer to a lack of the contrived reinforcers which induce people to observe rules. Anhedonia, rootlessness, emptiness, and hopelessness point to the absence of reinforcers of all kinds. The "something to believe in and be devoted to" is to be found among the contrived contingencies which induce people to behave "for the good of others."

The distinction between feelings and contingencies is particularly important when practical action must be taken. If the individual is indeed suffering from some internal state called valuelessness, then we can solve the problem only by altering that state—for example, by "reactivating moral power," "animating moral force," or "strengthening moral fiber or spiritual commitment." What must be changed are the contingencies, whether we regard them as responsible for the defective behavior or for the feelings said to explain the behavior.

A common proposal is to strengthen the original controls, eliminating conflicts, using stronger reinforcers, and sharpening the contingencies. If people do not work, it is not because they are lazy or shiftless but because they are not paid enough or because either welfare or affluence has made economic reinforcers less effective. The good things in life have only to be made properly contingent on productive labor. If citizens are not law-abiding, it is not because they are scofflaws or criminals but because law enforcement has grown lax; the problem can be solved by refusing to suspend or abridge sentences, by increasing the police force, and by passing stronger laws. If students do not study, it is not because they are not interested but because standards have been lowered or because the subjects taught are no longer relevant to a satisfactory life. Students will actively seek an education if the prestige accorded knowledge and skills is restored. (An incidental result will be that people will then *feel* industrious, law-abiding, and interested in getting an education.)

Such proposals to strengthen old modes of control are correctly called reactionary. The strategy may be successful, but it will not correct the trouble. Organized control "for the good of others" will continue to compete with personal reinforcers, and different kinds of organized control with each other. The balance of goods received by controller and controllee will remain unfair or unjust. If the problem is simply to correct the balance, any move which makes control more effective is in the wrong direction, but any move toward complete individualism or complete freedom from control is in the wrong direction too.

The first step in solving the problem is to identify all the goods received by the individual when he is controlled for the good of others. Other people exert control by manipulating the personal reinforcers to which the human or-

ganism is susceptible, together with conditioned reinforcers, such as praise or blame, derived from them. But there are other consequences which are easily overlooked because they do not occur immediately. We have already discussed the problem of making deferred aversive consequences effective. A similar problem arises when the deferred consequences are positively reinforcing. It is important enough to justify further comment.

The process of operant conditioning presumably evolved when those organisms which were more sensitively affected by the consequences of their behavior were better able to adjust to the environment and survive. Only fairly immediate consequences could be effective. One reason for this has to do with "final causes." Behavior cannot really be affected by anything which follows it, but if a "consequence" is immediate, it may overlap the behavior. A second reason has to do with the functional relation between behavior and its consequences. The contingencies of survival could not generate a process of conditioning which took into account *how* behavior produced its consequences. The only useful relation was temporal: a process could evolve in which a reinforcer strengthened any behavior it followed. But the process was important only if it strengthened behavior which actually produced results. Hence, the importance of the fact that any change that follows closely upon a response is most likely to have been produced by it. A third reason, related to the second but of a more practical nature, is that the reinforcing effect of any deferred consequence can be usurped, so to speak, by intervening behavior, which is reinforced even though it has had no part in the production of the reinforcing event.

. . .

The process of operant conditioning is committed to immediate effects, but remote consequences may be important, and the individual gains if he can be brought under their control. The gap can be bridged with a series of "conditioned reinforcers," of which we have already considered an example. A person who has frequently *escaped* from rain by moving under shelter eventually *avoids* rain by moving before rain falls. Stimuli which frequently precede rain become negative reinforcers (we call them the sign or threat of rain). They are more aversive when a person is not under shelter, and by moving under shelter he *escapes* from them and *avoids* getting wet. The effective consequence is not that he does not get wet when rain eventually falls but that a conditioned aversive stimulus is immediately reduced.

The mediation of a remote consequence is more easily examined when the reinforcers are positive. Take, for example, a bit of "paleobehavior" called banking a fire. The practice of raking ashes over hot coals at night so that a live coal may be found in the morning to start another fire must have been very important when it was not easy to start a fire in any other way. How could it have been learned? (It is, of course, no explanation to say that someone "got the idea" of banking a fire, since we should have to pursue a similar line to explain the idea.) The live coal found in the morning could scarcely reinforce the behavior of raking ashes the night before, but the temporal gap could be bridged by a series of conditioned reinforcers. It is easy to learn to start a new fire from an old one which is not yet quite out, and if a fire has seemed to be out for some time, it should be easy to learn to dig into the ashes to find an ember. A deep pile of ashes would then become a conditioned reinforcer—the occasion upon which one may dig

and find an ember. Raking ashes into a pile would then be automatically reinforced. The time span could at first have been very short—a fire was raked into a condition in which it was found shortly afterward—but as banking became a practice, the temporal aspects of the contingencies could have changed.

Like all accounts of the origins of paleobehavior, this is highly speculative, but it may serve to make a point. The contingencies under which people learned to bank fires must have been extremely rare. We must appeal for plausibility to the fact that there were hundreds of thousands of years during which they might have occurred. But once the behavior of banking a fire, or any part of it, had been acquired by one person, others could acquire it much more easily, and there was no further need for accidental contingencies.

One advantage in being a social animal is that one need not discover practices for oneself. The parent teaches his child, as the craftsman teaches his apprentice, because he gains a useful helper, but in the process the child and the apprentice acquire useful behavior which they would very probably not have acquired under nonsocial contingencies. Probably no one plants in the spring simply because he then harvests in the fall. Planting would not be adaptive or "reasonable" if there were no connection with a harvest, but one plants in the spring because of more immediate contingencies, most of them arranged by the social environment. The harvest has at best the effect of maintaining a series of conditioned reinforcers.

An important repertoire, necessarily acquired from others, is verbal. Verbal behavior presumably arose under contingencies involving practical social interactions, but the individual who becomes both a speaker and a listener is

in possession of a repertoire of extraordinary scope and power, which he may use by himself. Parts of that repertoire are concerned with self-knowledge and self-control which, as we shall see in Chapter 9, are social products even though they are usually misrepresented as intensely individual and private things.

Still another advantage is that the individual is, after all, one of the "others" who exert control and who do so for their own benefit. Organized agencies are often justified by pointing to certain general values. The individual under a government enjoys a certain measure of *order* and *security*. An economic system justifies itself by pointing to the *wealth* it produces, and an educational establishment to *skills* and *knowledge*.

Without a social environment, a person remains essentially feral, like those children said to have been raised by wolves or to have been able to fend for themselves from an early age in a beneficent climate. A man who has been alone since birth will have no verbal behavior, will not be aware of himself as a person, will possess no techniques of self-management, and with respect to the world around him will have only those meager skills which can be acquired in one short lifetime from nonsocial contingencies. In Dante's hell, he will suffer the special tortures of those who "lived without blame and without praise," like the "angels who were . . . for themselves." To be for oneself is to be almost nothing.

The great individualists so often cited to show the value of personal freedom have owed their successes to earlier social environments. The involuntary individualism of a Robinson Crusoe and the voluntary individualism of a Henry David Thoreau show obvious debts to society. If Crusoe had reached the island as a baby, and if Thoreau

had grown up unattended on the shores of Walden Pond, their stories would have been different. We must all begin as babies, and no degree of self-determination, self-sufficiency, or self-reliance will make us individuals in any sense beyond that of single members of the human species. Rousseau's great principle—that "nature has made man happy and good, but that society depraves him and makes him miserable"—was wrong, and it is ironic that in complaining that his book *Émile* was so little understood, Rousseau describes it as a "treatise on man's original goodness intended to show how vice and error, foreign to his nature, introduce themselves from without and insensibly change him," because the book is actually one of the great practical treatises on how human behavior can be changed.

Even those who stand out as revolutionaries are almost wholly the conventional products of the systems they overthrow. They speak the language, use the logic and science, observe many of the ethical and legal principles, and employ the practical skills and knowledge which society has given them. A small part of their behavior may be exceptional, possibly dramatically so, and we shall have to look for exceptional reasons in their idiosyncratic histories. (To attribute their original contributions to their miracle-working character as autonomous men is, of course, no explanation at all.)

These, then, are some of the gains to be credited to the control exerted by others in addition to the goods used in that control. The remoter gains are relevant to any evaluation of the justice or fairness of the exchange between the individual and his social environment. No reasonable balance can be achieved as long as the remoter gains are neglected by a thoroughgoing individualism or libertarianism, or as long as the balance is thrown as violently in the

other direction by an exploitative system. Presumably, there is an optimal state of equilibrium in which everyone is maximally reinforced. But to say this is to introduce another kind of value. Why should anyone be concerned with justice or fairness, even if these can be reduced to good husbandry in the use of reinforcers? The questions with which we began obviously cannot be answered simply by pointing to what is personally good or what is good for others. There is another kind of value to which we must now turn.

The struggle for freedom and dignity has been formulated as a defense of autonomous man rather than as a revision of the contingencies of reinforcement under which people live. A technology of behavior is available which would more successfully reduce the aversive consequences of behavior, proximate or deferred, and maximize the achievements of which the human organism is capable, but the defenders of freedom oppose its use. The opposition may raise certain questions concerning "values." Who is to decide what is good for man? How will a more effective technology be used? By whom and to what end? These are really questions about reinforcers. Some things have become "good" during the evolutionary history of the species, and they may be used to induce people to behave for "the good of others." When used to excess, they may be challenged, and the individual may turn to things good only to him. The challenge may be answered by intensifying the contingencies which generate behavior for the good of others or by pointing to previously neglected individual gains, such as those conceptualized as security, order,

health, wealth, or wisdom. Possibly indirectly, other people bring the individual under the control of some remote consequences of his behavior, and the good of others then redounds to the good of the individual. Another kind of good which makes for human progress remains to be analyzed.