BEYOND FREEDOM

DIGNITY B.F. SKINIER

Beyond Freedom & Dignity

B. F. Skinner

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Beyond Freedom and Dignity

A Technology of Behavior

In trying to solve the terrifying problems that face us in the world today, we naturally turn to the things we do best. We play from strength, and our strength is science and technology. To contain a population explosion we look for better methods of birth control. Threatened by a nuclear holocaust, we build bigger deterrent forces and anti-ballistic-missile systems. We try to stave off world famine with new foods and better ways of growing them. Improved sanitation and medicine will, we hope, control disease, better housing and transportation will solve the problems of the ghettos, and new ways of reducing or disposing of waste will stop the pollution of the environment. We can point to remarkable achievements in all these fields, and it is not surprising that we should try to extend them. But things grow steadily worse, and it is disheartening to find that technology itself is increasingly at fault. Sanitation and medicine have made the problems of population more acute, war has acquired a new horror with the invention of nuclear weapons, and the affluent pursuit of happiness is largely responsible for pollution. As Darlington* has said,

^{*} Notes begin on page 217.

"Every new source from which man has increased his power on the earth has been used to diminish the prospects of his successors. All his progress has been made at the expense of damage to his environment which he cannot repair and could not foresee."

Whether or not he could have foreseen the damage, man must repair it or all is lost. And he can do so if he will recognize the nature of the difficulty. The application of the physical and biological sciences alone will not solve our problems because the solutions lie in another field. Better contraceptives will control population only if people use them. New weapons may offset new defenses and vice versa, but a nuclear holocaust can be prevented only if the conditions under which nations make war can be changed. New methods of agriculture and medicine will not help if they are not practiced, and housing is a matter not only of buildings and cities but of how people live. Overcrowding can be corrected only by inducing people not to crowd, and the environment will continue to deteriorate until polluting practices are abandoned.

In short, we need to make vast changes in human behavior, and we cannot make them with the help of nothing more than physics or biology, no matter how hard we try. (And there are other problems, such as the breakdown of our educational system and the disaffection and revolt of the young, to which physical and biological technologies are so obviously irrelevant that they have never been applied.) It is not enough to "use technology with a deeper understanding of human issues," or to "dedicate technology to man's spiritual needs," or to "encourage technologists to look at human problems." Such expressions imply that where human behavior begins, technology stops, and that we must carry on, as we have in the past, with what

we have learned from personal experience or from those collections of personal experiences called history, or with the distillations of experience to be found in folk wisdom and practical rules of thumb. These have been available for centuries, and all we have to show for them is the state of the world today.

What we need is a technology of behavior. We could solve our problems quickly enough if we could adjust the growth of the world's population as precisely as we adjust the course of a spaceship, or improve agriculture and industry with some of the confidence with which we accelerate high-energy particles, or move toward a peaceful world with something like the steady progress with which physics has approached absolute zero (even though both remain presumably out of reach). But a behavioral technology comparable in power and precision to physical and biological technology is lacking, and those who do not find the very possibility ridiculous are more likely to be frightened by it than reassured. That is how far we are from "understanding human issues" in the sense in which physics and biology understand their fields, and how far we are from preventing the catastrophe toward which the world seems to be inexorably moving.

Twenty-five hundred years ago it might have been said that man understood himself as well as any other part of his world. Today he is the thing he understands least. Physics and biology have come a long way, but there has been no comparable development of anything like a science of human behavior. Greek physics and biology are now of historical interest only (no modern physicist or biologist would turn to Aristotle for help), but the dialogues of Plato are still assigned to students and cited as if they

threw light on human behavior. Aristotle could not have understood a page of modern physics or biology, but Socrates and his friends would have little trouble in following most current discussions of human affairs. And as to technology, we have made immense strides in controlling the physical and biological worlds, but our practices in government, education, and much of economics, though adapted to very different conditions, have not greatly improved.

We can scarcely explain this by saying that the Greeks knew all there was to know about human behavior. Certainly they knew more than they knew about the physical world, but it was still not much. Moreover, their way of thinking about human behavior must have had some fatal flaw. Whereas Greek physics and biology, no matter how crude, led eventually to modern science, Greek theories of human behavior led nowhere. If they are with us today, it is not because they possessed some kind of eternal verity, but because they did not contain the seeds of anything better.

It can always be argued that human behavior is a particularly difficult field. It is, and we are especially likely to think so just because we are so inept in dealing with it. But modern physics and biology successfully treat subjects that are certainly no simpler than many aspects of human behavior. The difference is that the instruments and methods they use are of commensurate complexity. The fact that equally powerful instruments and methods are not available in the field of human behavior is not an explanation; it is only part of the puzzle. Was putting a man on the moon actually easier than improving education in our public schools? Or than constructing better kinds of living space for everyone? Or than making it possible for everyone to be gainfully employed and, as a result, to enjoy a

higher standard of living? The choice was not a matter of priorities, for no one could have said that it was more important to get to the moon. The exciting thing about getting to the moon was its feasibility. Science and technology had reached the point at which, with one great push, the thing could be done. There is no comparable excitement about the problems posed by human behavior. We are not close to solutions.

It is easy to conclude that there must be something about human behavior which makes a scientific analysis, and hence an effective technology, impossible, but we have not by any means exhausted the possibilities. There is a sense in which it can be said that the methods of science have scarcely yet been applied to human behavior. We have used the instruments of science; we have counted and measured and compared; but something essential to scientific practice is missing in almost all current discussions of human behavior. It has to do with our treatment of the causes of behavior. (The term "cause" is no longer common in sophisticated scientific writing, but it will serve well enough here.)

Man's first experience with causes probably came from his own behavior: things moved because he moved them. If other things moved, it was because someone else was moving them, and if the mover could not be seen, it was because he was invisible. The Greek gods served in this way as the causes of physical phenomena. They were usually outside the things they moved, but they might enter into and "possess" them. Physics and biology soon abandoned explanations of this sort and turned to more useful kinds of causes, but the step has not been decisively taken in the field of human behavior. Intelligent people no longer believe that men are possessed by demons (although the

exorcism of devils is occasionally practiced, and the daimonic has reappeared in the writings of psychotherapists), but human behavior is still commonly attributed to indwelling agents. A juvenile delinquent is said, for example, to be suffering from a disturbed personality. There would be no point in saying it if the personality were not somehow distinct from the body which has got itself into trouble. The distinction is clear when one body is said to contain several personalities which control it in different ways at different times. Psychoanalysts have identified three of these personalities—the ego, superego, and id—and interactions among them are said to be responsible for the behavior of the man in whom they dwell.

Although physics soon stopped personifying things in this way, it continued for a long time to speak as if they had wills, impulses, feelings, purposes, and other fragmentary attributes of an indwelling agent. According to Butterfield, Aristotle argued that a falling body accelerated because it grew more jubilant as it found itself nearer home, and later authorities supposed that a projectile was carried forward by an impetus, sometimes called an "impetuosity." All this was eventually abandoned, and to good effect, but the behavioral sciences still appeal to comparable internal states. No one is surprised to hear it said that a person carrying good news walks more rapidly because he feels jubilant, or acts carelessly because of his impetuosity, or holds stubbornly to a course of action through sheer force of will. Careless references to purpose are still to be found in both physics and biology, but good practice has no place for them; yet almost everyone attributes human behavior to intentions, purposes, aims, and goals. If it is still possible to ask whether a machine can show purpose,

the question implies, significantly, that if it can it will more closely resemble a man.

Physics and biology moved farther away from personified causes when they began to attribute the behavior of things to essences, qualities, or natures. To the medieval alchemist, for example, some of the properties of a substance might be due to the mercurial essence, and substances were compared in what might have been called a "chemistry of individual differences." Newton complained of the practice in his contemporaries: "To tell us that every species of thing is endowed with an occult specific quality by which it acts and produces manifest effects is to tell us nothing." (Occult qualities were examples of the hypotheses Newton rejected when he said "Hypotheses non fingo," though he was not quite as good as his word.) Biology continued for a long time to appeal to the nature of living things, and it did not wholly abandon vital forces until the twentieth century. Behavior, however, is still attributed to human nature, and there is an extensive "psychology of individual differences" in which people are compared and described in terms of traits of character, capacities, and abilities.

Almost everyone who is concerned with human affairs—as political scientist, philosopher, man of letters, economist, psychologist, linguist, sociologist, theologian, anthropologist, educator, or psychotherapist—continues to talk about human behavior in this prescientific way. Every issue of a daily paper, every magazine, every professional journal, every book with any bearing whatsoever on human behavior will supply examples. We are told that to control the number of people in the world we need to change attitudes toward children, overcome pride in size

of family or in sexual potency, build some sense of responsibility toward offspring, and reduce the role played by a large family in allaying concern for old age. To work for peace we must deal with the will to power or the paranoid delusions of leaders; we must remember that wars begin in the minds of men, that there is something suicidal in man—a death instinct perhaps—which leads to war, and that man is aggressive by nature. To solve the problems of the poor we must inspire self-respect, encourage initiative, and reduce frustration. To allay the disaffection of the young we must provide a sense of purpose and reduce feelings of alienation or hopelessness. Realizing that we have no effective means of doing any of this, we ourselves may experience a crisis of belief or a loss of confidence, which can be corrected only by returning to a faith in man's inner capacities. This is staple fare. Almost no one questions it. Yet there is nothing like it in modern physics or most of biology, and that fact may well explain why a science and a technology of behavior have been so long delayed.

It is usually supposed that the "behavioristic" objection to ideas, feelings, traits of character, will, and so on concerns the stuff of which they are said to be made. Certain stubborn questions about the nature of mind have, of course, been debated for more than twenty-five hundred years and still go unanswered. How, for example, can the mind move the body? As late as 1965 Karl Popper could put the question this way: "What we want is to understand how such nonphysical things as purposes, deliberations, plans, decisions, theories, tensions, and values can play a part in bringing about physical changes in the physical world." And, of course, we also want to know where these non-

physical things come from. To that question the Greeks had a simple answer: from the gods. As Dodds has pointed out, the Greeks believed that if a man behaved foolishly, it was because a hostile god had planted $a\eta$ (infatuation) in his breast. A friendly god might give a warrior an extra amount of $\mu \epsilon \nu \sigma$, with the help of which he would fight brilliantly. Aristotle thought there was something divine in thought, and Zeno held that the intellect was God.

We cannot take that line today, and the commonest alternative is to appeal to antecedent physical events. A person's genetic endowment, a product of the evolution of the species, is said to explain part of the workings of his mind and his personal history the rest. For example, because of (physical) competition during the course of evolution people now have (nonphysical) feelings of aggression which lead to (physical) acts of hostility. Or, the (physical) punishment a small child receives when he engages in sex play produces (nonphysical) feelings of anxiety which interfere with his (physical) sexual behavior as an adult. The nonphysical stage obviously bridges long periods of time: aggression reaches back into millions of years of evolutionary history, and anxiety acquired when one is a child survives into old age.

The problem of getting from one kind of stuff to another could be avoided if everything were either mental or physical, and both these possibilities have been considered. Some philosophers have tried to stay within the world of the mind, arguing that only immediate experience is real, and experimental psychology began as an attempt to discover the mental laws which governed interactions among mental elements. Contemporary "intrapsychic" theories of psychotherapy tell us how one feeling leads to another (how frustration breeds aggression, for example), how

feelings interact, and how feelings which have been put out of mind fight their way back in. The complementary line that the mental stage is really physical was taken, curiously enough, by Freud, who believed that physiology would eventually explain the workings of the mental apparatus. In a similar vein, many physiological psychologists continue to talk freely about states of mind, feelings, and so on, in the belief that it is only a matter of time before we shall understand their physical nature.

The dimensions of the world of mind and the transition from one world to another do raise embarrassing problems, but it is usually possible to ignore them, and this may be good strategy, for the important objection to mentalism is of a very different sort. The world of the mind steals the show. Behavior is not recognized as a subject in its own right. In psychotherapy, for example, the disturbing things a person does or says are almost always regarded merely as symptoms, and compared with the fascinating dramas which are staged in the depths of the mind, behavior itself seems superficial indeed. In linguistics and literary criticism what a man says is almost always treated as the expression of ideas or feelings. In political science, theology, and economics, behavior is usually regarded as the material from which one infers attitudes, intentions, needs, and so on. For more than twenty-five hundred years close attention has been paid to mental life, but only recently has any effort been made to study human behavior as something more than a mere by-product.

The conditions of which behavior is a function are also neglected. The mental explanation brings curiosity to an end. We see the effect in casual discourse. If we ask someone, "Why did you go to the theater?" and he says, "Because I felt like going," we are apt to take his reply as a kind

of explanation. It would be much more to the point to know what has happened when he has gone to the theater in the past, what he heard or read about the play he went to see, and what other things in his past or present environments might have induced him to go (as opposed to doing something else), but we accept "I felt like going" as a sort of summary of all this and are not likely to ask for details.

The professional psychologist often stops at the same point. A long time ago William James corrected a prevailing view of the relation between feelings and action by asserting, for example, that we do not run away because we are afraid but are afraid because we run away. In other words, what we feel when we feel afraid is our behavior—the very behavior which in the traditional view expresses the feeling and is explained by it. But how many of those who have considered James's argument have noted that no antecedent event has in fact been pointed out? Neither "because" should be taken seriously. No explanation has been given as to why we run away and feel afraid.

Whether we regard ourselves as explaining feelings or the behavior said to be caused by feelings, we give very little attention to antecedent circumstances. The psychotherapist learns about the early life of his patient almost exclusively from the patient's memories, which are known to be unreliable, and he may even argue that what is important is not what actually happened but what the patient remembers. In the psychoanalytic literature there must be at least a hundred references to felt anxiety for every reference to a punishing episode to which anxiety might be traced. We even seem to prefer antecedent histories which are clearly out of reach. There is a good deal of current interest, for example, in what must have happened during the evolution of the species to explain human behavior,