An Interview with “Mr. Behaviorist”

B. F. Skinner

Burrhus Frederic Skinner is very much the man of today. And when history makes its judgment, he may well be known as the major contributor to psychology in this century.

He is the modern spokesman for behaviorism and for behavioral engineering in the design of societies; he brought experimentation in animal behavior to a quantitative scientific level; and he is known as the father of the teaching machine and programmed learning—education’s revolutionary wave of the future.

B. F. Skinner has great feeling for the importance of his work. But on the personal level, he doesn’t just wear his fame lightly, he seems totally unaware of it. He is casual and modest. At 63, he is relaxed and attractive, his hair is sandy, and he looks a fit and trim 50.

He does value his productive working hours, and he programs his time very carefully indeed. He is Harvard’s Edgar Pierce Professor of Psychology, and he has a perfectly good office on campus. However, he claims to be more productive at home. He does his best thinking (and charts his productive hours) in a remarkable study in his basement. It is a modern, ordered study which is soundproofed, air-filtered, and temperature-controlled. He can turn off the outside world, or turn it back on with an elaborate electronic sound system.

His is a veritable air crib of an office. Skinner has always been as imaginative as he is inventive. The Skinners’ younger daughter, Deborah, spent most of the first 30 months of her life in the Skinner-designed air crib, a mechanical baby tender. The air crib, a big box with cleanliness and climate controls and a sliding glass door of clear safety glass, has never caught on with the baby-raising public.

His novel, Walden Two, certainly has. Published in 1948, this Utopian novel is far more popular now than when it was first published. Skinner is such a stubborn iconoclast that he would be hopelessly out of place in his own Walden Two, a society designed so perfectly that even frustrations had to be introduced artificially.

The genial Carl Rogers, father of Rogerian Therapy, once said: “The most awful fate I can imagine for Fred would be to have him constantly ‘happy.’ It is the fact that he is very unhappy about many things which makes me prize him.”

Skinner’s scientific contributions and his point of view are based on his principle of operant conditioning—control of behavior through systems of positive and negative reinforcement. In the course of refining his work, Skinner taught
Mary Hall: Would you please explain to me that neat chart above your desk?

B. F. Skinner: I just like to keep some records of what I do. I do my writing and all of my really serious thinking here. And I clock the time. I turn the clock on when I enter and turn it off again when I leave. Whenever the light is burning on the clock up there, that clock is running. When the clock covers twelve hours, I plot a point. I've kept this record for about six or eight years now. I can watch my productivity change during the years. Look at the curve—that flat spot indicates a lecture. My productivity suffers from that, so I avoid lectures. Actually, I'm averaging about three truly productive hours a day. This is my only really creative time. The rest of the day I'm still working, and I don't quit. But I don't do anything very important. I've figured that I average about two minutes of creative time per published word.

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Hall: That's one of the reasons that you designed the air crib, isn't it?

Skinner: Yes, the air crib is nothing but a solution to the problem of physical environment. A child is a very precious possession. What bothers me particularly is that you recognize that when you are talking about whether you are going to use sheets and a blanket or an air crib tonight, but you don't recognize it at all when you ask, what am I doing to this child to create the behavior that is going to be worthwhile in the future.

The principle of the air crib is really very simple; it solves a very simple problem. Diapers have an obvious function, while all the rest, the blankets and sheets, are just to keep the child warm. And they don't do a very good job: The child gets overheated and the blankets get kicked off and it gets cold and all of that. The air crib—heated, ventilated space—is the obvious solution.

Hall: I've always thought that the volume control on an air crib is a good idea. Once you've done what you can to make your baby comfortable, you can turn down the volume if he cries just for exercise.

Skinner: Remember, the air crib is for the baby, not the parents. The whole point is that this clean, glass-enclosed structure is roomier and healthier than a crib. The baby is more comfortable.

Hall: But it meets with lots of resistance?

Skinner: Well, in the first place it is an area where everybody, mothers in particular, feel they know all about everything. I suppose it took a hundred years to get over believing that you had to keep a child rocking all day long. At one time they had dogs walking on treadmills just to keep the cradle rocking. Now, that's disappeared, just as the ordinary crib will probably disappear sometime soon. The ordinary crib is a small jail, if you want to put it that way, with bars. You put the child behind bars. The air crib at least has a clear view without bars. You don't have the feeling that you are preparing the child for a life of crime later on.
Hall: Do you really think the air crib solves the problems of bringing up baby?
Skinner: Not really. It solves only a very simple physical problem. I despair of teaching the ordinary parent how to handle his child. I would rather turn child-raising over to a specialist. I can't believe that an ordinary parent can do a good job. What has happened in the past is that a culture has set up a routine way of handling kids. You spank them for what is wrong; you don't spank them for what is good; and so on. Some of those produce a given type of person. Some produce enterprising persons, others seem to produce lazy persons. But the main point is that we don't have stable cultures any more; so the average parent doesn't know what to do. The books on child care are more confusing than anything else because you can't apply what they recommend: "Go and love your child."

That would be all right, but you can't go and buy three ounces of love at the store. And if the child really isn't lovable, you simply have to fake it. Fake love is probably the worst of all commodities. But I don't really know; that's why I tend to be a Utopian dreamer.

Hall: I'm curious. How were you raised, Fred? Were your parents strict?
Skinner: Yes, I don't think my mother and father ever had any doubts about what I was to be punished for or not. But now we really don't have an on-going culture that gives us any guidance on how to handle people. My parents came from a very strictly defined culture. My mother knew exactly what was right. I can't even remember when I learned what was right or not right, or what I should do or shouldn't do. The rules were right there in the culture; there was never any question. Well, now that's all gone; we have thrown that over, but we have to go on designing from moment to moment to produce a better way.

"And if the child really isn't lovable, you simply have to fake it."

Hall: You do get uncertain in a world where you don't even know what an act of war is.
Skinner: Yes. Well, that is the trouble right now. The whole definition of nationalism. A part of this is the fact that many people do begin to feel themselves citizens of the world. Nationalism isn't as strong as it used to be. You have interest beyond your own nation. That upsets everything. When nations are sharply defined, then whether you are at war or not is perfectly clear.

Hall: Do you think that better ways of handling people might be arranged?
Skinner: Well, positive reinforcement seems to offer most of the answers.

Hall: Are you talking about reward learning? Are those the contingencies that you were talking about earlier?
Skinner: Well, I am talking about operant conditioning. People often confuse that with what they refer to as reward learning. Trouble is that specifications in terms of reward and punishment are incomplete. They don't say enough. It is true that people work for rewards; usually a reward means something agreed upon. You do something and you will be rewarded, and so on.

The rewards of a good life are eternal bliss. Now these are contracted rewards, the nature of the situation is that you do this and you will get the following. That isn't involved at all in operant conditioning. Moreover, the point isn't just that hungry rats will work for food or that a sex-starved man will work for sex, and so on. What's fundamentally important—this is very little understood by people outside the field—is what they are actually doing when a reinforcing stimulus occurs.

The whole study of operant conditioning lies in the tricky relationship between what the rat is doing and the moment of truth when the food appears. Oh, some of it is the study of what events are reinforcing and what kinds of behavior can be reinforced, but most of it is the study of the temporal and spatial relations between behavior and its consequences. That is the heart of the matter.

The relationships of importance always involve three things: the situation, call it the stimulus if you like; the behavior, call it the response if you like; and the

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consequences, the reinforcers. We say that the reinforcers are contingent on behavior in a given situation or that a reinforcer is contingent on a response in the presence of a given stimulus. When those contingencies are arranged, the probability of the behavior changes. The behavior becomes more probable in the presence of the stimuli that were present when it was reinforced and less probable when not reinforced, and so on.

Hall: But where exactly does the notion of contingencies come in?

Skinner: That’s the whole question of schedules of reinforcement, which is the most important part. You can reinforce every tenth response, every hundredth response, every thousandth response, or you can reinforce a response every minute, every five minutes, and so on. Some of the schedules which are now being studied are extremely complicated and can only be mediated by extremely sensitive apparatus. The most surprising thing is that organisms usually feel these schedules. They respond appropriately to them. That is the heart of the matter. Knowing the contingencies and the history of reinforcement, you can predict the behavior. You can arrange a contingency; you can control the behavior. And of course both prediction and control have widespread implications in human affairs, and in animal affairs, too.

Hall: If you could be remembered for just one contribution to psychology, would that be your analysis of contingencies?

Skinner: Yes, I suppose, if I am limited to just one thing, it would be the whole question of the contingencies of reinforcement arranged by schedules of reinforcement and their role in the analysis of operant behavior. It’s a shame. Nobody pays much attention to it at all. It’s an extremely interesting and complicated and fascinating field. I think it is my basic scientific contribution.

In fact, I am even now getting a little bit more interested in it, myself, if that is possible. Particularly in the implications of this sort of thing for the design of cultures in general. I have no doubt at all that programmed instruction based on operand principles will take over education. I have no doubt that operand therapy will be very important in the management of psychotics and also in the treatment of neurotics.

Hall: If we’re talking about designing cultures, Fred, let’s talk about your novel, Walden Two. Two generations now have read it, and it’s on the required reading list at most schools. I love that book.

Skinner: I think Walden Two has made people stop and look at the culture they have inherited and wonder if it is the last word or whether it can be changed. And even to suggest ways of changing it. I would still put my basic scientific contribution to operant behavior as the analysis of contingencies of reinforcement, but what I really expect to be known for is the application of all this to education, psychotherapy, economics, government, religion, I suppose, and its use in designing a world that will make us into the kind of people we would like to be and give us the things that we could all agree that we want.

Hall: But the society in Walden Two is based mainly on positive reinforcement, isn’t it? What about punishment, holding down crime, and those strict codes of ethics by which you yourself were brought up?

Skinner: Positive reinforcement, properly used, is extremely powerful. Aversive control (that means punishment mainly and arranging that people do things to get away from or avoid unpleasantness) is immediate and quick and so we use it. But I really think that the use of aversive control has serious, inherent disadvantages. It is used at a terrible cost. That of course doesn’t mean that you can change tomorrow.

I always thought, for example, getting back to possible Utopias, that when the Zionist movement took over Israel, it was a terrible mistake for them to emphasize an army. They should have gone in and demonstrated to the world that they could have a culture without an army. What they have got now is just another national culture emerging. Armies compel, they put on pressure, they attempt to control the behavior of other nations with aversive techniques. We say let them do this or that or we will blow you to pieces.

Hall: Now we are talking about the tragedy in international politics. I really don’t see acceptance of alternatives to force very soon. Do you?

Skinner: Well it’s not only international issues, it’s domestic issues, too — the whole business of how you use power and how you use positive reinforcement. Again, it’s a matter of the contingencies. Whether you are going to do something either positive or negative, send in food and medical supplies or drop bombs, for example; the important thing is that the behavior of the other country should be contingent on what you are doing to them, so that the other country will do more or less of something you desire.

But I don’t get the impression that anyone is paying any attention to this at all. In Vietnam, for example, certainly the only idea is that somehow or other if you make them suffer, they will give up. Well, if you have to use sources of pain, for heaven’s sake use them at the right time and in the right way. It’s the behavior that’s being neglected. If you ask people what kind of world they want to live in, they will mention all the things that are reinforcing to them, such as food, sex, personal relations, nature, music, art, but they won’t say what they are going to do to get those things.

The analyst would say love is a terribly important thing. He’s likely to overlook what you’re doing when you’re loved.

That’s the really important thing. That’s the whole crucial issue. That’s what’s wrong with all conceptions of heaven. No one has ever portrayed an interesting heaven. There is music in the streets, gold bricks in the pavement, and what not. But it’s a boring existence because nothing is doing. Afterworlds of other cultures are of the same nature. The American Indian isn’t much better off. He wants a happy hunting ground, according to song and story. Ridiculous. He doesn’t just want food, he wants a happy way to get it.

Well, to get back to the Vietnam business, it isn’t really whether you are using money or love or power. It’s how you use it. We’re pouring a tremendous amount of power into Vietnam but the contingencies are absolutely lousy. We are simply not doing things at the right time, properly contingent on the behavior, in order to change the behavior of anyone over there. This is the whole problem.

Hall: You mentioned earlier that our domestic policy suffers from an ignorance of these considerations.

Skinner: Yes, certainly. Here we’re going to give large sums of money to the poor. If you just give it to them, you aren’t strengthening behavior at all. It is true that you are satisfying certain needs, and that is generally good. They will no longer
be hungry; they will no longer be living in filth; that's reasonable, and is the kind of thing one does out of compassion.

But all the money that is going to go into this could be so enormously more effective if it were properly contingent on the kinds of behavior that you want these people to engage in. You might ask the question: Why aren't these people enterprising? Why don't they clean up their own apartment houses, and so on? It isn't that they are unable to live in better surroundings, they just don't do whatever it is that makes their surroundings better. And the solution is so very simple: You just have to make what is being done for these people contingent on their doing something.

Hall: Let's get back, if we may, to programmed instruction. This really has taken hold in a big way in education, hasn't it? But are current teaching machines effective? They bore me.

Skinner: You're right to be bored. It certainly is not because there are no good programs. Oh, you can write terrible programs, and they don't do at all what they are intended to do. But many, many good programs are being written, they are being improved all the time, and fantastic things can be done. It's really just the application of what we know about contingencies of reinforcement to a suitable and efficient method of education.

It's really nothing more than arranging for reinforcing consequences immediately following the behavior of the student in the proper context. But you have to bring the educators around to seeing the advantages, and that takes time.

Hall: They are resistant, the people in education? How typical.

Skinner: Yes, a change of this magnitude takes years. It really takes a new generation—on which we are having quite a considerable impression. I don't think that you can really ever beat down the prejudice of the older generation. I am convinced now that science never progresses by converting.

Among my contemporaries, for example, I can mention only one or two who really very seriously changed their attitudes toward the study of behavior as a result of anything I have ever done or said. That's to be expected, of course. They have invested a great deal in certain lines and you can't expect them to admit that they were wasting their time and have thrown away their livelihood.

I would say that, to take a sweeping generalization, almost all the work done with the memory drum is worthless. I mean, they manage to cook up an interesting little problem, but I think in general it's worthless. However, I can't ask people who have worked with memory drums all their lives to admit this or to examine what goes on when somebody looks at a memory drum and tries to memorize something. They just don't want to look too closely at that. They are so afraid that they might find out that they are wrong and not amounting to anything. I suggest that they take a look around and see what is seriously being done in other fields.

Few of the educational psychologists, for example, even know what programming is all about. But the younger people are refreshing: they are looking for what really works, for the wave of the future, the techniques by which you really can manage behavior for the better in a way that actually works. And so when they look at programmed instruction and at the operant treatment of neurotics and psychotics, they see that these things really work, thank goodness.

That's how scientific change comes about, because the young have not been spoiled by miserable histories of reinforcement into running away from possible sources of much greater reinforcement.

Hall: You sound very optimistic about the future of operant conditioning.

Skinner: And justifiably so, I think. You see, as sad as it is to relate, there really isn't very much competition for the allegiance of bright and informed young psychologists. Positive reinforcement really works, and contingencies of reinforcement are really very important, and we are actually very successful in predicting and controlling behavior. These are things you just have to accept.

The young men just entering the field do accept them. They see that this is where the business is going. To paraphrase President Truman after he defeated Dewey, the competition may feel that this is all too bad and sad and cannot quite figure out how it came about, but it is true and so we will just have to make the best of it.

Hall: What about the rival schools of psychology? They object to operant conditioning on the grounds of dehumanization, of mechanization.

Skinner: Well, that's a different issue. I think the main objection to behaviorism is that people are in love with the mental apparatus. If you say that doesn't really exist, that it's a fiction and let's get back to the facts, then they have to give up their first love.

You can't expect a Freudian to say, yes, I will admit that Freud's only contribution was in demonstrating some unusual causal relations between early experience and the present behavior. He loves the superego, the ego, and the id, and the various geographies of the mind and all of that stuff.

I say we can get along without that. In fact, we can get along better without it, because we've misrepresented the facts that Freud discovered.

They won't go along with that. You are asking them to throw away their lifework. Or their only confidence, because they don't really care very much about tracing existence of problems to their environment except to show how the unconscious is causing trouble. They're interested in the mental apparatus. To ask them to give that up would be like asking an engineer to go into sculpture. You may con-
never read the review myself. I did read a couple of pages, saw that he missed the point, and I never read the rest. What the psycholinguists miss is any conception of a functional analysis as opposed to a structural analysis of verbal behavior.

Hall: You do have a sweet, succinct way about you. Keep talking.

Skinner: I mean they try to make sense out of the dependent variable only. They really don’t want to look into the situation in which a person is speaking or listening to speech. That would make them psychologists, and they don’t want to do it. And so they argue that you don’t need to. And then, of course, they try to argue that verbal behavior isn’t real behavior, that it goes back to ideas and cognitive processes. They lean very heavily on the mentalistic psychology, and they are going to be let down because there is no such psychology. But as I said earlier, now they are postulating innate ideas, and that is next to worthless, if not a little bit comical. But I am in no real hurry, I came from, and of course they came from the outside world.

So you study sensation and the relation between the psychic and the physical, and the field is still essentially in that condition. The fact is that a hundred and some years ago they decided that this relation was logarithmic and now they are trying to say that it is a power function. But it is basically unproductive: they believe in a world of sensation, the way that things seem to be rather than the way things really are.

Hall: Are you cheerier about clinical psychology and psychotherapy?

Skinner: Well, they won’t get anywhere if they don’t get results. And you can’t get results by sitting around and theorizing about the inner world of the disturbed. I want to say to those people: get down to the facts. But they seem to be threatened by facts. Operant conditioning—the proper arrangement and management of contingencies of reinforcement—has been fantastically successful with a number of problems of disordered behavior.

Take autistic children, for example. Our success in that area is a real threat, you see, to the people who think that the problem is something about the inner life, or the lack of identity, or alienation, or whatever all those things are that these kids are supposed to be suffering from.

What they are suffering from in fact is very bad schedules of reinforcement. That is something you can change for them, but this is not done. And you really can’t expect mentalistic psychologists to do things like that; their approach just simply destines them to inadequacy and failure.

Hall: I keep on saying I’ve got about five more good years left, but I have been saying that for about three years already.”

Oh, but they are so sincere. They want to understand the boys, to sit and talk and gain their confidence, and all of this stuff. Meanwhile, there is a very simple way in which you can begin to get them to behave in a very respectable way and to learn the kinds of skills that will give them a chance to be effective citizens.

Take the problem in correctional institutions, for example. One of our people recently took over one of the buildings in a training school for boys and organized it on the basis of a point-reinforcement system. The boys were paid for their work, and they had to buy everything except basics. For free they could get the basic diet and a place to sleep in the dormitory, but anything else they had to buy. And the most points were given for learning something interesting with the help of teaching machines, or without. They got points for learning.

Don’t you see, that’s the point. It made them discover for the first time that they could learn something, and that learning something was valuable. This is a very important thing. Most of them had been convinced by our school systems that they were stupid. They discovered that they really weren’t. It’s remarkable, surprising, it really works! How very different it is from hand-holding and getting to know the boys.

Hall: You can’t slough off people like Carl Rogers and Rollo May and Bruno Bettelheim. They’re constructive.

Skinner: Oh, certainly, in certain cases. You know Rogers’ technique is to agree with everything everybody says—reinforce support. Have you ever heard the story of Carl Rogers and the duck?

Hall: No, please tell me. Carl is the hero, or victim, of more apocryphal stories than is any other leader in psychology. How fortunate that he has a good disposition.

Skinner: Someone took Carl out duck hunting one morning. It was a bad day, cloudy or something, and hunting was very bad. Toward the very end they were about ready to go home. One duck came in. Carl shot at the duck. At the same time somebody else shot it from down along the shore. The duck fell into the shallow water. Carl walked toward the duck, and the other guy emerged and walked out to get it, too. They met at the duck, Carl looked up at the man and said, “You feel this is your duck.” Of course the point of the story is that Carl got the duck. His technique does work, you see.

Hall: I’m going to do an interview with Carl. He’s entitled, at this point.

Skinner: You see, Rogers’ whole approach is based on the notion that the individual somehow or other has his own salvation within him. And this may not be true. Really it’s a matter of the history of reinforcement. Someone brought up in a good old Protestant background probably does have enough behavior to save himself in certain circumstances. But cultures
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change. Rogers' approach is based on a culture which by and large is coming not to exist any more. This means that he really hasn't gotten at the basic processes.

What would he do, for example, if some one came up with the solution that he had better murder his boss? Rogers isn't going to say, "Oh, you should murder your boss!" and let it go at that. No, he couldn't do it. The only way you can be successful with these things is to get at the basic processes and work with them. It's simply too superficial and dangerous to rely on the previous history of reinforcement—the culture—when that is something that is going to change at least every few generations.

Hall: What do you see surfaced in other areas of psychology that may be of interest in the future?

Skinner: Well, I don't see much of anything interesting going on. The study of sensation is of some interest, but I think primarily as the physiology of how the eye works and how the ear works, the field of perception is not yet up to the level it will reach, though it is an interesting business. But there is not much going on there now.

Some people are working on what conditions lead one to learn to see things in different ways, and that could be fun, if done properly. I have no interest in so-called cognitive psychology. I just don't think there is much there.

Psychological testing, I mark all of that off. Verbal learning, I mark all that off. I just wouldn't look at anything that had to do with the memory drum unless someone suddenly convinced me that someone had something new there. I have never been able to read papers dealing with mazes; once you know something about behavior, it is transparently clear that you simply don't know what's going on in a maze or a jump stand at all.

Hall: Obviously you aren't just the creator of operant conditioning. You are a true believer. Of course you are still hard at work. What does the immediate future hold for you?

Skinner: Well, I may not have too much future personally. I keep on saying I've got about five more good years left, but I have been saying that for about three years already, so I don't know how many good years I have. But I keep in good health, take care of myself. I have always had a lot of things I wanted to do, and I have quite deliberately to rule out some things which I would have enjoyed. Three or four years ago I gave up my laboratory. I was still getting grants, as I could now. Grants were hard to get in the old days, but I could get them now. I wanted to turn it over to younger people, and so I said to myself that I have had 35 years of laboratory science, so I will quit. I also have withdrawn pretty much from teaching, but I don't mean to stop working. I spend as much time as I can on creative things. I have always wanted to do a little something worthwhile every day, and the rest of the time is thinking and reading. I have several important books which I want to get out. I think we have put our finger on something of extraordinary importance here—and when we get the truth out, everything will follow these operant rules which we have seen and are still discovering. With them one cannot make a very serious mistake. And since this is where the future of psychology lies, it's well worth the telling.

Hall: If you had your life to live over again, if you were just beginning your career, what would you do differently?

Skinner: Just one thing. I performed one experiment that has never ceased to reverberate. I've been laughed at by enemies and kidded by friends. If I could do it all over again, I'd never teach those pigeons to play Ping-Pong.