PART 1

EDWARD FRY

Good evening, ladies and gentlemen, and welcome to the fifth in a series of eight lectures presented by the Guggenheim Museum on the general subject of the history of the future of art, [if you wish?]. It is my particular honor to introduce this evening's speaker, the distinguished psychology Professor B. F. Skinner of Harvard University, who is currently Overseas Fellow at Churchill College in Cambridge, England. His lecture this evening is entitled "Creating the Creative Artist." Professor Skinner. (applause)

B. F. SKINNER

Thank you, Mr. Fry. [00:01:00] Ladies and gentlemen, it has long been recognized that there is some sort of relation between art and leisure. Presumably, early man had to free himself from a constant preoccupation with food, shelter, and safety before he could begin to decorate his clothing, his dwellings, his weapons, his body, and eventually create things with no other function than to be decorative. And when great civilizations reach the stage at which they can afford leisure to a number of people, great periods of art often begin. We appeal to this connection when we try to encourage artists by giving them leisure with patronage, fellowships, grants, sinecures, and so on. Even the archetypal [00:02:00] pattern, the connection between art and bohemianism or between art and life in a garret, follows this pattern, but these are ways in which the artist himself gives himself leisure by avoiding commitments and living cheaply. This relation is easily misunderstood. Certainly, we're not all waiting to be artists as soon as we are free to do as we please and have the time. The fact is that we are not free to do as we please when we have managed to dispose of those things we have to do. The artist, the serious artist, the dedicated artist — and that's the one we're interested in — will tell you that he is not free to be or not to be an artist. He must do what he does as earnestly and as compellingly [00:03:00] as he eats or defends himself.

The difference between doing what you have to do and doing other things is simply that we're not quite sure of the second case. We know why — we think we know why — people behave when they have to behave in given ways. It's not so clear to us why they behave when they seem to have no compelling reason. But they have reasons, and if we are going to do anything about art and producing more of it, encouraging people to be artists, we ought to know what those reasons are. Why, indeed, do artists paint pictures? And for the sake of convenience, I'll talk only about painting in spite of the very excellent show in the museum here, which suggests that I should perhaps talk about sculpture. [00:04:00]

This is a question, though, that we must answer in some fashion if we are to encourage artistic production and consumption as part of a culture. The traditional answers are not very helpful. They point to things supposedly taking place inside the artist himself. It's assumed that by giving the artist leisure we free him from the pressures of the world. We free him from an interaction with his environment and permit him to do those things which flow from his individuality, from his creative impulses, his love of beauty, or, if his work lacks equanimity, from inner struggles, from the need to give vent to tempestuous emotions, the agony and the

ecstasy, [00:05:00] the torments of his mind. Now, these are, no doubt, engaging explanations. They represent the artist as an extremely complex person living a very dramatic inner life. They give him credit for initiating, originating, creating beautiful things. They flatter the artist and not only the artist; they flatter those who have the perception to see that this is indeed why the artist behaves as he does. And they offer endless opportunities to critics who wish to add still other accounts of the inner springs of art. Above all, they have the fascination of mystery.

But mysterious things have disadvantages too. We don't want mystery. We want an explanation. But if [00:06:00] this is indeed where an explanation is to be found, we are in serious trouble. We shall have to wait a long time, because most of our information about the inner life of the artist is inferred from his work, from the very work that we then use that inner life to explain, and the rest comes from a few artists who do talk about themselves. Now, they are indeed in an excellent position to see what the artist does. But when they talk about the things supposedly going on inside themselves, in their minds and their emotional depths and so on, they're using a vocabulary which they have acquired from the outside world, and they were taught to use that vocabulary by people who have no contact with these inner events and could not really teach them well to describe them. [00:07:00] That will explain why each artist has his own and gives his own account of what is going on inside. The artist's answers, therefore, to the question of why does the artist paint as he does are probably no better than anyone else's, and they have the disadvantage of appealing to an inner world which not only eludes any careful analysis but is very far removed from useful access. If that is why the artist behaves as he does, there is very little we can do about it.

Now, should we conclude then that we are to try to encourage art, to generate artistic activity, by working on this inner life? Should we [00:08:00] stir up the artist's emotions, alter his mind in various ways, frustrate him, destroy his equanimity? Just to suggest this shows how far that kind of explanation is from any practical use. If art springs from activities within the artist which have no precursors, which are not caused, which originate, are creative, created ex nihilo, then we already lost. Indeed, then we can only give the artist the opportunity to lead this curious inner life and express it in his work. Now, a much more promising possibility follows. If we refuse to suppose that we have in any way free the artist from his environment, from the world in which he lives, we can then go on to examine [00:09:00] the things in that environment which offer some hope of a useful explanation and practical action. And recent work in the experimental analysis of behavior is directly relevant. Why, indeed, do artists paint pictures, and why do people look at them? Another way to put that "why" is to use the colloquial "what for." What do artists paint pictures for? What do people look at pictures for? The word "for" points forward into the future. It points to the consequences of action. The things that we do a thing for are the things which follow, and it is these consequences of behavior which have been shown recently to be terribly important in giving an account of what a man [00:10:00] does.

Fortunately, I don't need to go into the laboratory analysis of the consequences of behavior. There are hundreds of laboratories now in which, with experimental organisms human and otherwise, one arranges behavior and consequences contingent upon the behavior. And when this is done correctly and in subtle ways we gain a remarkable power to predict and control behavior. Now, the analysis is not only important theoretically. It leads directly to a technology, which has indeed been applied in education, psychotherapy, and other areas. The important

thing is that the consequences of behavior, at least certain kinds of consequences, have the effect of making the behavior [00:11:00] more likely to occur. And that, of course, is our problem. We want to make the behavior of the artist more likely to occur. It's a question of strengthening behavior, and these consequences, which have this effect, are technically called reinforcers in the sense that they do strengthen the behavior they are consequent upon. Thus, we look at a picture, and as a result we see it. What we see is reinforcing in this sense, and it makes us more likely to look at that picture again. That's the kind of consequence I'm talking about. It also makes us more likely to do anything which makes it possible to see that picture, to go to a museum if it is in a museum or to by the picture and bring it home so that we can look at it whenever we like.

Now, it's the increase in the probability of behavior which is the important [00:12:00] thing, and that effect permits us to clear up a lot of trouble which has been associated with other words describing works of art. We can deal with the kinds of things which are called attractive, pleasing, satisfying, or beautiful not by supposing that these words refer to our feelings about works of art but rather in the sense that these are all synonyms for the word "reinforcing." And the thing we care about is not how we feel about the picture but what it does to us, what it makes us likely to do again, and, in particular, what effect is has on the artist. "Reinforce" is a technical term, but I'm going to use it because nothing else is indeed suitable. [00:13:00] It clarifies the role of the environment on the artist and on the viewer of art. It explains why artists paint and why people look at pictures. If I seem to use the word in a thousand different connections, it is because reinforcement is ubiquitous, but I would allay your anxieties and uneasinesses by saying that it simply takes over the function of the word "purpose." We're only talking about the purpose of art when we talk about pictures as reinforcing or the reasons why people behave. These are the reasons or the consequences, and a recent formulation in experimental analysis goes a long way toward clearing up philosophical questions involved in purpose and in the reasons why people behave as they do. Now, this kind [00:14:00] of thing is an extraordinary advantage over explaining artistic behavior in terms of the inner life of the artist because the things we're pointing to, the consequences, the reinforcing consequences of behavior, are in the first place usually observable so that we can talk about them and agree about them, and they are often controllable so that we can arrange consequences to produce effects. We can begin to take practical action in connection with inducing people to paint pictures or to look at them.

Now, with the help of that concept, let's go back and look again at the relation between art and leisure. The things we have to do — eat, protect ourselves from extremes of temperature and so on — these are things which are done because of very powerful [00:15:00] reinforcers. We search for and eat food when we are hungry because when we are hungry food is powerfully reinforcing. We escape from a serious threat because escape is reinforcing. And when, thanks to physical technology, we no longer need to spend very much time to eat or protect ourselves, then our behavior begins to be affected by the lesser reinforcements, things which are not conspicuous, which are less powerful but no less compelling. We are not freed. We are simply turned over to other controlling conditions. And painting is not something one does when one is free to do it because basic needs are satisfied. It is something one does when lesser reinforcers begin to act on behavior because the powerful reinforcers have not preempted behavior completely. [00:16:00]

Now, unfortunately, the kinds of reinforcers which are represented by works of art aren't the only kinds of consequences which become effective when people have free time. There are many other characteristics of a leisure class, of a leisure culture, whether produced by affluence or by a welfare state. There is, for example, simple play in which we gave in behavior which is sometimes done seriously but which in this case is done for very much less important reasons, as the leisure class hunts and fishes although what is caught or captured or killed is not eaten. The leisure class tends to fight even though not threatened, and when results are not fatal we risk danger just for the sake of getting out of it, as in thrill seeking. [00:17:00] Games are devices invented to make consequences critical, terribly important, whether the ball falls into the hole or not, a very simple little consequence, but a game and competition can make it extraordinarily important.

Another characteristic of a leisure class is sexual behavior, sex having a very strange status among the reinforcers since it's concerned with the survival of the species rather than the individual and is not really subject to prolonged satiation in the same way. Then, there are the [mimetic?] reinforcers, drugs in particular, alcohol. A great deal of alcohol is consumed by leisure classes, usually, and a runner-up now in the form of marijuana and so on. These are substances which have reinforcing effects, [00:18:00] particularly [up until?] addiction has been built up, and they certainly take over a very large part of the behavior of people who have leisure. Then, there is mere spectatorship. We watch others lead serious lives although we ourselves are in no danger. We follow personal experiences in soap operas or watch people behaving quite dangerous in professional football, boxing matches, and so on. And lastly, I won't repeat this list, but I want to mention gambling. Now, the net utility of gambling is usually negative. There's no reason to gamble in that sense, yet this is a very characteristic feature of a leisure class.

Now, these are all the natural competitors of art. They are what we will find people doing when we do indeed free them from the serious business of life. We like to feel that art is superior. [00:19:00] Why should we say that? Why is it better for people to paint and look at pictures than to do any of the things I have listed? These things are not all entirely useless. Play has been characterized as a preparation, a training for serious behavior. Sex does keep the species going, but there is much to be said against many of the other characteristics of leisure time activities. The sheer repetitiveness of gambling leads to no development of personal skills, perceptual or motor. Drugs tend to stupefy, to numb a person so that it leads to inaction rather than positive action. Watching others gets us very little actually. We sit in front of the little tube watching fine specimens of mankind in top physical condition, and we grow fat as we [00:20:00] watch.

Now, we don't need to answer the question of why is art better. Let's just assume that we know it is for one reason or another. I think the explanation in the long run would come back to the strength of the culture which permits these or encourages these activities, but we don't need to answer that question. Let's say we want to give art a chance to compete with the other things which are going to be characteristics of our own world as leisure continues to extend itself, and we want to better its competitive chances. How should we go about doing it? Well, first, we ought to look at the nature of these artistic reinforcers. Why are pictures attractive, pleasing, satisfying, beautiful, or, to use a technical word, reinforcing? Why do people paint? Why do they look at pictures? Now, there have been efforts to discover [00:21:00] what is beautiful, etc.,

reinforcing in the work of art itself. Two or three generations ago this was very common. We learned all about dynamic symmetry, aesthetic measure, and so on. You collect a lot of beautiful things and try to find what is in those things which characterizes them, things they have in common. This is a sort of formalistic fallacy that somehow or other beauty is in the beautiful object, and we reject this when we realize that different people and different cultures find different things beautiful. The way out is to argue, "Well, beauty is really in the eye of the beholder," but what does that mean? What is in the eye of the beholder, actually?

The answer is something of this kind. What is it about a person that makes a given picture reinforcing to him, that induces him to continue to look at it, [00:22:00] to come back to look at it again? We can answer that only by looking at what one does with respect to a picture. There are some behaviors which are evoked by a picture or a work of art in general because of variables going way back in the genetics of the human species. There are things about objects which have been very important in the evolution of man, and we find them reinforcing today. Palatable food, nutritious food, is reinforcing — sugar, for example — not because it tastes good but because it has been very important to the human race that this kind of stimulation should be reinforcing it. If you do something that leads to this kind of result, you should be more likely to do it again. Sexual contact is certainly reinforcing for this reason, and [00:23:00] other things are reinforcing because of one's personal history added to this genetic background. There's no puzzle about this at all. There's no reason why you should not find pictures of fruit and a brace of pheasants in a dining room or nude bodies pretty generally throughout the history of art. It's not at all curious that painters in the caves of Lascaux should represent the very important part of their physical environment, the animals they had to fight off and kill for food. Religious history brings in another kind of thing, nostalgic art, landscapes. These are reinforcing to us. We look at them. We call them beautiful because they are reinforcing to us for personal reasons. Portraits [00:24:00] of a person we love or admire, when a portrait is available, we are able to some extent engage in the kind of behavior which is appropriate to that person. When the young lover kisses the portrait of his beloved, he is only being a little more conspicuous in his behavior than the rest of us who look at pictures and react in ways which are determined by the picture as a releasing stimulus. These are necessarily short of consummation, but that isn't a serious difference.

Now, these things are reinforcing because of what they represent, because of their content, and because of what they thus induce the viewer to do, and the effects are idiosyncratic. They depend upon the individual more than upon the work of art itself. We suspect this. We don't [00:25:00] want an artist merely to construct a representation. For one thing, he can't get very much credit for the effect. We prefer to have him do something which leads us to behave in ways which he has determined rather than determined simply by the choice of subject matter. And especially with the invention of the camera, this is not the best way to produce reinforcing objects. One answer, of course, is to move to abstract painting, and you might argue that somehow or other this is getting back to the [essentially?] beautiful in a thing itself. But the study of visual perception doesn't bear this out. No object is ever seen until we have learned to see it. We forget the learning that went on when we were children as we learned to see the world [00:26:00] around us, but we do have to learn to see everything we see. And we learn because the things that we see are important to us. They are always the occasions for taking action of some kind. Denman Ross in 1907 in his little book *A Theory of Pure Design* wrote essentially a

manifesto for abstractionism, and he showed quite clearly that a pure design is effective because it induces the viewer to do something. This might be closer to some of the genetic endowment which leads us to respond to stimuli in given ways, thus a matter of personal experience, perhaps, but it is no less idiosyncratic to the individual, and it is no less clearly an example that an object is beautiful because it is an occasion for action and, as such, [00:27:00] is reinforcing to us.

Now, this is an important point when we raise the question of can we make a picture more reinforcing so that people will tend to look at it, tend to buy it, tend to go to see it, and so on. Our only chance is to change the person, of course, not the picture. Efforts to make paintings more beautiful, more effective by altering the paintings often run into trouble. Those who neglect the fact that a stimulus is not merely a form of input but an occasion for action are likely to try to batter down the doors of perception using the techniques of the advertiser. We've been going through this in music and to some extent in art, loud noises and bright lights, huge canvases, sudden [00:28:00] changes, and so on. These are ways in which we can at least get people to look and listen, but it overlooks a much more important opportunity to induce people to pay attention for other reasons, because looking is reinforcing and leads to effective action.

Now, to make a picture more beautiful or, to use a technical term, more reinforcing, we must induce the viewer to do more things with respect to it. And the techniques are primarily those of education, teaching appreciation as of this sort. Some of what is taught may not be related to those reinforcing characteristics which we identify with beauty. It may be helpful to teach people to recognize conventional devices in religious art or to spot periods or schools or artists, but the [00:29:00] other kind of appreciation, increasing the value of a work, has to do with giving the viewer more things to do when he looks at a painting, more reasons for looking at it and reasons which fall within this realm of reinforcement which we equate with the beautiful. We couldn't do this if beauty were in the picture itself because the picture remains unchanged. When you talk about a picture, you don't change the picture. You change those who are looking at it. When you point out what is beautiful in a picture, you are simply pointing [up?] its reinforcing effects. You are making it more reinforcing, and the artist himself plays an important role in this way. He is not simply there to produce things to which a given public reacts [00:30:00] in significant ways. He is teaching the public to find new sources of reinforcement, teaching the public to do new things with respect to the pictures he and others paint. And here, again, it's important to place the notion of reinforcement ahead of such concepts as the pleasing or the satisfying or the beautiful because we are concerned with getting people to do things and to be more likely to do them.

But it's time to look more directly at our topic: how can we induce more people to paint, if I'm going to hold to that mode of art at the moment, and to paint in acceptable, preferred ways? Now, in part this question is very much like that of how we induce people to look at painting because the artist plays two roles. He is a viewer of his own [00:31:00] pictures, but he is also the producer. He puts paint on a canvas and is or is not reinforced by the result, or, in older terms, finds it beautiful or not beautiful. The viewer in a gallery, say, has only one choice; he can go on looking or walk away. But the artist has another; he can let the picture stand, or he can change it. And that is the major nature of his activity. And it's the former role of putting the paint on the canvas which is at issue here.

How can we make it more likely that he will paint so that what he paints will be reinforcing to many people, including himself? One of the first things — and I'm talking now really about education, the education of artists — is to teach technique. He must be able [00:32:00] to manipulate media to produce results. Now, this is the kind of thing which all teachers fear. Technique is often supposed to interfere with the creative impulse. This is an issue in all education. Can we teach what we know even though we're not yet giving the student the chance to make use of it? Take, for example, a current issue in education, high school science. The interesting things in science are the discoveries, so it's natural to suppose that these should be made important to the student. He should discover science for himself, and this would be a feasible way of teaching science if the student could indeed discover any [00:33:00] substantial part of science in the time available. But, of course, he cannot, and it's a great mistake, as is done now, to convince the student that it's beneath his dignity to learn something that others have already discovered. Yet that is, more or less, the implication of the discovery method in education, and the same thing is true of painting. If we assume that the individual must himself explore all possible media and make his own discoveries, then a great deal of his life as an artist will be taken up with something he could very quickly learn otherwise. The reason why we don't like to teach a lot of facts in science because we fear that it's going to interfere with creativity is not that facts themselves fill the head in such a way that one can't be creative but because they're taught in such a way that [00:34:00] one is quickly discouraged and will, if possible, get out of the field as soon as possible. And I dare say that disciplined instruction in technique in art has its disadvantages and might very well lead the artist, the young artist, not to be very creative when the time comes for him to do that. But there are better ways of teaching, and I am sure that they are as applicable to art instruction as they are to other areas. Programmed instruction offers useful leads, but I resist the temptation to discuss that in any further detail here.

In any case, the main thing is not just putting paint on canvas. It's putting it on in such a way that it will be pleasurable, satisfying, beautiful, or reinforcing. [00:35:00] And again, I'm talking about the effect of what is done in inducing the artist to continue to put paint on canvas. This is the big problem. How do you go about putting something on the canvas? This is the problem of the writer facing a blank sheet of paper. You would like to be a writer. You would like to have written, but how do you write? Where does this first sentence come from? Where does the first bit of paint on the canvas come from? Well, there are a great many ways in which one can go about creating a reinforcing picture. One is just to find something beautiful in the world and copy it. This is what the photographer does, and it used to be a large part of what the artist did. You can learn to copy. That's part of instruction. Looking at an object, you can sketch it or paint it and [00:36:00] get a reasonable facsimile. That isn't going to get you very much of a reputation. You're not going to get any credit for the beautiful thing itself, and you will get credit simply for functioning as a camera.

Another thing you can do is to copy someone else's paintings, but this is no great step forward. It's not what we really want to encourage. You can copy in part. You can do something that you have some other reason for doing but do it in a style of someone else. You can be derivative. There, again, you don't get much credit for what you do, at least for that part which is derivative. There is one exception to this. The artist himself can copy himself. After all, every Picasso is derivative. It's derivative of earlier Picassos, and that's allowable. [00:37:00] Once the artist

has created something which is his own, no one objects when he borrows from it, provided he doesn't just go on painting his successes over and over again. But this demands that a start be made, so it isn't very much help to the young man. He hasn't got paintings yet from which he can derive further aspects of his own style. You can apply rules to create a picture. Those who have analyzed beautiful things and come up with mathematical formulae and give you rules and you just apply them, you follow the rules. Well, you follow the rules in playing chess, and you can come up with interesting patterns. Still, we're not getting where we want to go. We want something which we call creative.

Now, a creative work, an original work, seems to [00:38:00] belong to the artist. We give him credit for it. To try to interpret this as due to environmental control seems to deprive the artist of something which is his natural due, so it's easy for us to say that, "Well, a really original picture proves that the artist does make a contribution from his inner life and is not simply responding to the environment about him." Arthur Koestler, in his heavy book, heavy in weight and in style, called *The Act of Creation* argues for the inner kind of explanation and, incidentally, attacks a behaviorist alternative analysis. He would argue that a work [00:39:00] of art, prose or painting or music, is the result of a creative, active mind, that the idea must come first, and it is then realized and given substantial form when the work itself is created. Now, to say that the artist first gets an idea and then realizes it, puts it on canvas, may seem to explain what is on the canvas, but it doesn't explain the idea. And that puts us right back where we started. It's no explanation at all until we can begin to explain where ideas come from, and we are likely, then, to go to the environment and the history of the artist. And we might as well go there in the first place and not bother going through this mental stage. [00:40:00]

The argument that Koestler uses and many others, too, is that you cannot account for an original work in a purely physical system because it would be impossible for the body as a biological or physical system to produce some of the things which are actually produced. For example, you can argue that if an artist is capable of producing potentially an infinite number of different pictures, how can a physical system produce an infinite number of pictures or even the possibility of an infinite number of pictures or certain selections from an infinite number. The mind is supposed to be able to do this, but this means that the mind is simply brought in as a miracle-worker to do what the body doesn't [00:41:00] seem to be able to do. Now, the fact is that bodies, people, artists do indeed turn up novel objects. They produce things which have never existed before, nor has any likeness existed before, but this doesn't mean that there is some special mind power involved. We've been through this all a hundred years ago in connection with *The Origin of Species*. The word "origin" there is important. We're talking about originality. The Darwinian argument is that novel forms appear when there are random and accidental mutations, some of which are selected because of their effectiveness in relation to the environment. Before Darwin, the vast number of creatures on the face of the earth were attributed [00:42:00] to a creative mind, but the process of mutation and selection accounts for diversity, for creativity, for originality, and something very much like this goes on in art. The artist, when he puts something on the canvas, is in a sense either copying something else, or he is actually generating mutations. These are novel things. They're new events of some kind. Then, he selects these by letting them stand or taking them off the canvas as the process of selection by the environment works in the case of evolution.

What can the artist do, then, to produce more mutations? How can you generate the greater variety of objects on a canvas which can then be allowed to stand or [00:43:00] discarded? The lesson we learn from evolution is that the mutations do not need to be related to the final result. They can be quite random. They do not need to be directed or purposive, and there are ways of producing mutations in this sense. One can quite deliberately create new things simply by changing old, for example. The mathematician discovers that it's useful to deny the axioms of Euclid. Once someone tries that with one axiom, others jump in and try it with others. The composer finds that it's useful to use forbidden harmonies, and the painter can violate standards, fashions, conventions, try something which is different simply because it is different, and so on. These are sources of mutation, sources of variety, some of the variety of which [00:44:00] will then be selected, or you can just be plain careless, or you can induce some sort of creative frenzy through the taking of drugs or behave in an abandoned way. You can produce a sort of slippage.

In the Second World War, when they were building a lot of devices very hurriedly for use in the war, they didn't have time to test them properly, and things would often jam. Contacts would stick and so on, and it proved to be a good idea to put a special device in such an apparatus which simply produced vibration. This was called dither. And by shaking the apparatus at all times, a lot of these things would be shaken loose. Well, dither is a randomizing kind of thing but a very useful one, and you can produce dither in a painting. Just add an extra length of handle to a brush and make a stroke, and there will be certain details [00:45:00] of what is left on the canvas which are a form of dither. Pouring paint out of a can on a horizontal canvas introduces a certain amount of dither.

Then, if you are desperate and haven't still got anything which is really new, you can turn to some sort of chance mechanism. You can spin dials or throw dice or take a random number table and divide your canvas into squares and put spots of color in depending upon some predetermined numerical system and, perhaps, even a computer if you want to get a grant to do this. (laughter) These are just ways of coming up with something different, and at that point the artist steps in as an appreciator of art, as one reinforced by what he sees. He allows it to stand or removes it and comes up with some kind of work of art. [00:46:00] Now, the point here is that as in evolution the source of the mutations is not important, and one ought to encourage — and I'm sure that artists know many more ways than I have suggested here — coming up with something new, trying something out, and producing novel effects.

Now, it is a kind of mechanical way of being creative, but something like that, whether it's as conspicuous as this or not, seems to be the only possible way if we assume that behavior is not determined by some inner creative activity. The individuality, which the artist will show, will be due to two things, the ways in which he turns up mutations and his own idiosyncrasies in selecting some as against others. [00:47:00] He will be an individual. If he has universality, it will be because he is selecting among these things more or less in the way his viewers agree to select also.

Now, there's another very important behavioral process involved in controlling the behavior of the artist which we ought to keep in mind, and it has to do with the question of dedication. This is something where I believe that an experimental analysis of behavior has been particularly helpful. If we agree that the things on a canvas which reinforce us are not as important as food

when we are hungry and so on, we might very well ask, "Well, why are artists so compelled to paint, and why is the true devotee compelled to go and look at pictures?" The answer is to be found in looking not at [00:48:00] the actual reinforcements which occur but at the schedule on which they occur. If you are hunting for something and you were left to put out a certain amount of behavior before you find what you're looking for, over a period of time the amount of work you put out will vary. So you're getting rewarded or reinforced for searching on a particularly tricky schedule. This has been investigated in the laboratory. It's called a variable-ratio schedule, and it explains such things as the compulsive gambler. It will make a pigeon a compulsive gambler as well as a man. It explains the fascination of hunting, fishing, scientific research, exploration, and so on. It explains those minor compulsions of putting jigsaw puzzles together and so on.

And not only does it explain the dedication of the scientist who has had a lucky [00:49:00] history of making discoveries, but it should explain the dedication of the artist, because not everything he does is going to be reinforcing, but if he's lucky the things he does will reinforce him on just that schedule which makes him a dedicated worker. The importance of this, I think, cannot be overestimated, and if we had some way to control the success of a young artist and could plan for his successes, possibly by arranging the kinds of materials he's working with or possibly by stepping in and giving him a little spurious reinforcement from time to time, we might be able to build that dedication which takes the exceptional artist through a lifetime even though he's not constantly having good luck in what he does.

Now, among the reinforcers which are certainly important for the artist, we ought to look of course to his public. [Two?] of the great artists have died [00:50:00] unappreciated and yet have gone on painting for a long time, and it's true that others have been ruined by the acclaim they've received. But in between, we can scarcely doubt the importance of finding someone to enjoy what you've done. Art is not wholly artistic, and here I think there is something in the field of art which needs some serious thought. A comparison with music is instructive. Two generations ago, very few people heard very much good music. A small number of people could hear a symphony orchestra or an opera, but for the rest it was left to transcriptions for the local band playing on the village green or transcriptions for the piano in the parlor.

But with the advent of the phonograph and the radio, there has been an enormous change. People can hear an immense [00:51:00] quantity of music. The devotee can hear a little-known work of art, which might be played in a concert in the old days by a symphony orchestra only once or twice in his life, and he can play it again and again as long as he likes. And there are, of course, millions of discs sold every year, very fine hi-fi equipment to play them. If there is not yet a golden age in musical composition, certainly the stage is set for one. But there's nothing like this, really, for art. There are no popular magazines which review current copies or prints of great pictures or museum sculptures and so on. The very notion of a copy is suspect. It's associated with a fake or something of that kind. A record is not a symphony concert, but nobody cares about that. As a matter of fact, the paintings that you can get, the prints [00:52:00] aren't very good copies. No one is concerned about their hi-fi. They don't stand comparison alongside the picture itself. The opposite is true of music. Unless you have very good luck in finding the right seat in the symphony hall, you are more likely to hear the performance from a

phonograph better than from the symphony itself. In other words, the recording is more like the symphony than the symphony itself except for those who are sitting in the right places.

Pictures are not as cheap. They can't be stored. They don't last as well. No technical expertise seems to be going into making large numbers of pictures available to the public as music is now made available. Of course, this comes down to a different way in which we use pictures. Paintings are put on the walls as decorations. Decorators put them there. They're there [00:53:00] continuously like background music. It's not only background music; it's background music with the same piece being played again and again and again. Now, it's not as objectionable because we don't need to look, but no picture can stand that degree of familiarity. You undermine the very notion of a picture when you leave it around that long. The technical problem of finding pictures which will last [but can?] be quickly changed so that you can have different pictures in your room of an evening the way you put different phonograph music on your phonograph, that ought to be soluble, and it ought to pave the way for a very much wider public so that young artists can have their pictures looked at and enjoyed by a great many people.

Now, building that kind of public isn't going to happen overnight. It will no doubt come [00:54:00] only as the public itself grows to demand it, but in the long run it's the kind of thing that ought to be done. We ought to look at pictures as we listen to music. We ought to have a supply of pictures to look at. Books are good, but they have to reduce pictures to a very small, standard size. The technical problem has not been solved as in the case of music. Now, in the long run, the whole problem can be stated in an even broader way. We've come a long way in building leisure time. If Adam Smith could see us today, he would say, "Well, you have it made," and writers in his period supposed that when vast quantities of leisure were made available we would all settle down to self-development. That isn't, of course, what has happened at all. And if we are going to let art play its reasonable role [00:55:00] in occupying leisure time, then we need to take very positive action. A culture which produces great art is a great culture no matter what its other shortcomings may be, and it's stronger because it does produce art. That is, I think, the reason why we feel that art is better than, let us say, compulsive gambling or watching sports on TV.

Now, I don't say that I have given a very exhaustive or even a very adequate account of the kinds of things that can be done. I'm offering them only as examples, as examples of things which depend upon a change in our conception of what art is all about. I think that certain positive steps become feasible and clear only when we recognize the nature of the task. The mentalistic [00:56:00] interpretation of the artist — and we've had them for 2,000 years — doesn't dictate very specific practices. It really can't, because it doesn't point to things which can be changed, which can be manipulated. If we recognize that the problem is the very behavior of the artist in painting and the behavior of the viewer in looking at pictures, then we can make use of what we are learning about human behavior and the importance of consequences or reinforcers to move on to a technology, a behavior, which has already generated extraordinary power in other areas.

Now, the account that I have given is not only anti-mentalistic. It may seem to be anti-individualistic. It is, after all, the culture which creates both the artist and the consumer of art. [00:57:00] And the culture is our point of attack. We are concerned with the design of a culture. We want to build a world in which large numbers of people paint and look at pictures, and large

numbers are needed if we are ever to discover the few exceptional individuals in any given era. But the individual is not lost in this. He remains always the person who actually produces the work of art. He is not strictly a creator or an originator, but he is the unquestionably unique locus where various forces come together from his genetics, his physical environment, and from his culture. And a few people under these conditions are those in any given period which produce the great works of art.

I don't think that this is [00:58:00] the view of a philistine. I may have sounded like that to some of you, but no theory changes a work of art. It can change our responses to works of art and to their beauty, and it can change the artist and the way he works in his field. It's not easy to discard theories of the creative artist, which credit the artist with greater achievements, which intrigue us by their mystery, which supposed miraculous powers not only in the creator but the viewer of art. But these theories by their nature are seldom helpful in solving practical problems. And to evaluate a theory, we look to its effects, not to the momentary characterization [00:59:00] of the work of art or the activity of the artist. The theory of artistic behavior as such naturally lack some of the wonder and the glamour of many traditional conceptions. It must compete at another level. It must demonstrate its power to suggest new practices and new distributions of effort in enabling art to hold its place in the world of tomorrow. Thank you very much. (applause)

EDWARD FRY

Thank you very much, Professor Skinner. I believe now we [01:00:00] have a few minutes to answer some questions from the floor. Mr. Skinner?

MALE 1

I was — I'm trying to think of a name of the book that came out seven or eight years ago in which some researcher investigated the lives of some 400 writers, painters, various artists, and tried to determine what was common in their background. You probably know (inaudible).

B. F. SKINNER

Well, that was the [MacKinnon?] work, I think, on the West Coast, I believe, on creativity.

MALE 1

(inaudible). What came out of this was the concept that if I wanted to try to raise artists I would arrange for (inaudible) with [weak?] fathers, [dominating?] mothers, etc., etc.

B. F. SKINNER

Yes.

MALE 1

And I (inaudible) in your talk there was hardly any mention of these (inaudible).

B. F. SKINNER

Well, I was hoping to imply that there are better things [01:01:00] to be done, things that are more likely to be within range. In a given culture such as ours, it may very well be that there are familial backgrounds and so on or sibling relationships and so on that have something to do with whether a person goes into art and reaches distinction, but I think these are more or less

accidents. And certainly, as you suggest, you can't very well create an artist by selecting a dominant mother or something of that kind. Now, the things that I am pointing to here, I recognize that they may seem, somehow or other, rather thin compared with these glamorous topics. They're at least things within reach and things which ought to be further investigated. [01:02:00] Yes?

MALE 2

(inaudible), you always talked about how we control people's (inaudible) control kids, and now you're talking about how we should create artists. Who's "we"?

B. F. SKINNER

Yes, well —

MALE 2

And how do we get — I'm getting the feeling right now that an artist is created (inaudible). Is it [you and me?], how you and I create artists, or who?

B. F. SKINNER

Well, I'm sure you are aware of the broader significance of that question. You are assuming somehow or other that someone can put himself in the position to start controlling other people, but no one is in that position. The controller is himself controlled. You can cut in at some point and say, "Ah, this child is controlling his parents because he's getting exactly what he wants from them," but what was controlling the child to induce him to do these things [01:03:00] to control his parents that way? Or you can say now you want to control art education to produce a given type of artist, but why do I want to do that? What about my behavior? I don't start anything either, you see. You can still ask the questions, which are essentially value judgments about what kinds of art do we want in the world. That's something that would take a long time to go into because it has to do, I think, with the overall strength of the culture. I was implying this. I was implying — we would more or less agree — that strong art in a culture is a good thing. I believe it is, and I think you can justify it in terms of developing the individual to the maximal condition of his perceptual and motor skills so that he would be more important for himself and for other people. Now, art does that, whereas, as I say, compulsive, repetitious gambling does not. Now, if that's a value judgment, [01:04:00] I will make it. And if I then say, "I'm going to produce artists rather than gamblers, and I'm going to oppose gambling and so on," you say, "Well, why do you do that?" Well, then I have to go into my own history.

MALE 2

Well, the answer or the way you seem to be answering it is that we teach — you're implying that somehow there's an educational process by which we are going to produce artists. All the artists I know have dropped out of school. As a matter of fact, [they don't enroll?]. They're not under the control of teachers, and there's no [prescribed?] process by which a bunch of academics or somebody or other (inaudible) and talk about, "What should we do?" are going to control them. And they end up controlling us. We're in their [auditoriums?], looking at their paintings, (inaudible). (laughter)

B. F. SKINNER

(inaudible).

MALE 2

(inaudible) selling their pictures to (inaudible).

B. F. SKINNER

Yeah. Well, I think the question — this may —

MALE 2

(inaudible).

B. F. SKINNER

Yes, (inaudible). (laughter) [01:05:00] Well, [that?] is it. Now, if we can't do any better, then we'll go on the way we are, but I don't think art is particularly holding its own in the world today. How many Americans do look at pictures compared with those who watch professional football on TV? I mean, I want to do more than is being done, and I would say that if art education, if the educational system in which young would-be artists now find themselves, if they are driving artists out, then there is something that can be done, because I believe that art can be taught. I don't believe that the last (inaudible) of creativity can be taught. It wouldn't be creative if it were, but I have no doubt in my own mind that a very active and effective education could produce, for one thing, a great many more artists. And you need to produce a very large number of artists to get a few great ones. The reason the Russians are good chess players [01:06:00] is that all Russians play chess. And if you want to find the Rembrandts in your culture, then have a lot of people painting. Someone told me once that in Rembrandt's time one in every five men in Holland was a painter. Well, that certainly is not the case now because they're all dropping out of our schools, and you seem to think this is admirable.

MALE 2

Well, that's the [other trouble?]. Painting is out and [not art?], and (inaudible) art.

B. F. SKINNER

Well, if that is the art of the culture, then we need to change the culture. That's what I advocated. Yes?

FEMALE 1

Would you say that perhaps — you talked about what happens with the individual artist (inaudible) necessity of (inaudible), a necessity of breaking away from what has been, such that when you talk about — and I think [the example that?] was being used in terms of educational systems (inaudible), when you talk about school, by even talking in that way you're talking about something [01:07:00] against which people must react. You're talking about something against which [people come from?]. I want to ask you if you've [taught?] (inaudible). I want to ask you if you have done anything along that line, if the [kid could react?] against what it was doing. In other words, I'm trying to deal with you on your own terms and (inaudible). (laughter)

B. F. SKINNER

(inaudible) don't recognize my terms. (laughter) It may very well be that in this particular culture the artist will be among those who are really unhappy and their art will reflect that. But in other countries, they are among those who are perfectly happy, and their art reflects that.

MALE 3

Name one please.

B. F. SKINNER

[What was that?]?

MALE 3

Name one culture where they (inaudible) artists who are happy, happy (inaudible) culture, happily (inaudible).

B. F. SKINNER

Well, (inaudible) for that. I don't know the history [part?] well enough, but he looks like he is a [01:08:00] very happy man. (inaudible).

MALE 3

(inaudible)? (laughter)

B. F. SKINNER

(inaudible), but (inaudible) you apparently want to get this inner conflict back [in the picture?] again, and I [don't?].

MALE 3

Well, I believe it is (inaudible).

B. F. SKINNER

Well, I don't question the fact that much of art, much of literature has reflected the unhappiness of people, but I would still [settle for?] a world in which that art is not even understood because [they?] couldn't sympathize with people who were that unhappy. This is (inaudible) [say?], "(inaudible) people like Dostoevsky." That's wonderful. I think to have a world in which you wouldn't understand a (inaudible) tormented man would be a fine world, myself, but at the moment Dostoevsky (inaudible) right, of course. And (inaudible) painters paint what they paint, and that's fine with me if that's what [01:09:00] (inaudible) important to them and if there's a large audience getting reinforced from it too.

MALE 4

[Fred?], I'm very disappointed. I came here tonight thinking that you [might?] talk about machines (inaudible) paint.

B. F. SKINNER

Machines?

MALE 4

Yeah. I really sort of thought you had some kind of mechanism in mind that (inaudible) paint, (laughter) because when you made a box that made (inaudible) do funny things you were really (inaudible) art. But what you've come out with tonight is that what you want to have creating artists is teachers —

B. F. SKINNER No, it isn't at all. (inaudible). MALE 4 — teachers using positive reinforcement (inaudible). B. F. SKINNER I would like very much — I would like very — PART 2 MALE 4 [00:00:00] Do you have a machine that creates painters or — B. F. SKINNER Well, I don't — I wouldn't think of doing that. I don't know why you thought I was going to. I think the devices that will aid the teacher could very well be used (inaudible), but (inaudible). I expect teachers (inaudible) teaching machines. FEMALE 1 I (inaudible). MALE 5 Excuse me. [I was first?]. (laughter) Yeah, I had my chance, (inaudible). B. F. SKINNER All right. (inaudible). MALE 5 I want to understand a little [better?] that theory of (inaudible) [schedules?] that you mentioned. B. F. SKINNER The theory of what? MALE 5 Of [schedules?]. B. F. SKINNER Oh. MALE 5 Yes. Now, [if you tell me?] that an artist or a gambler or a hunter is driven (inaudible), and they

B. F. SKINNER

(inaudible) because they (inaudible) reward at certain times, on certain schedules, is that it?

[00:01:00] Because (inaudible) —

Well, it's a little more complicated. A very good example is what a crooked gambler does to hook the victim. You let the victim win pretty often to begin with, but a little more time goes by before the next win, and more and more and more. And you can do this with a [pigeon?] as well as with a victim. The (inaudible) continues to go without the reward, without the reinforcement, and eventually you (inaudible) a fantastic amount of behavior with no reinforcement whatsoever, and that's (inaudible) victim.

MALE 5

(inaudible). This reinforcement is conditioned by reinforcement.

B. F. SKINNER

Is what?

MALE 5

Is conditioned. So conditioned before is [created?] (inaudible).

B. F. SKINNER

Well, this is (inaudible).

MALE 5

(inaudible).

B. F. SKINNER

But the point is that a schedule of this kind will induce fantastically dedicated behavior. A scientist, for example, [00:02:00] [tries?] something out (inaudible). Then, [he starts on something else?] (inaudible), but then he (inaudible) something a little bit more difficult now. It's a little bit longer before it pays off, and then still longer. And in the last 10 years of his life he doesn't get any payoff at all, but he dies [dedicated?] (inaudible). He's still going. [That's what?] we like.

MALE 5

Right. (laughter) I (inaudible) conditioned (inaudible) schedule of rewards (inaudible) gamble (inaudible). What makes some person try to do something new or try to discover (inaudible)?

B. F. SKINNER

The gambler is conditioned by the various systems in which he has gambled. And if he's unlucky enough to win frequently when he first starts playing the horses, he's hooked for life.

MALE 6

The question is why does he start playing the horses in the first place. Right?

B. F. SKINNER

Yes. Well, the whole question is whether or not you ever get hooked, and I'm saying let's get [a lot of?] artists hooked [00:03:00] by making sure that they are reinforced in what they're doing early on and (inaudible).

MALE 7

Look how many artists have gone [to drink?] (inaudible) successful. That's — most artists who are successful prefer to drink so they can stop being successful. (laughter) (inaudible) everybody. (inaudible) successful as an artist (inaudible).

[Which one?]?

MALE 8

MALE 9

(inaudible).

MALE 7

(inaudible).

B. F. SKINNER

My only (inaudible) is let's have more (inaudible). I think we can, if we take this seriously, do the kinds of things that will produce the dedicated [kind of artist?] that (inaudible). Yes?

MALE 10

(inaudible) culture (inaudible). [00:04:00] I think, along with that, along with what (inaudible) by art. And I think that that's [really unfortunate?], because (inaudible) art (inaudible) or something that's beautiful, that's one thing. But if you say art (inaudible), then (inaudible). And whether or not we should think of art in the second sense (inaudible), there wouldn't (inaudible).

B. F. SKINNER

Well, you're raising the question of what kinds of things are (inaudible). I [chose?] a very simple example here, [painters?]. Now, if you want (inaudible) art of getting along with people or being involved with something of that kind, then that's a different art (inaudible). If you think that painting is concerned with that, then, all right, if that is what the artist (inaudible) [00:05:00] having made the painting, then that's [one of the things?] that will induce him to go on. The only — most of the reinforcers — well, I don't like to bring up technical terms. (inaudible) [embarrassed?] (inaudible), actually, but (inaudible) we really are concerned with whether the artist goes on doing what he's doing and whether we can go on looking at pictures. And these (inaudible), but the thing that matters is whether the behavior continues (inaudible).

MALE 10

(inaudible) I agree with you (inaudible). What I'm trying to say is that (inaudible) reinforcement is not enough, the really interesting issue is what, in fact, (inaudible). I think that's (inaudible).

B. F. SKINNER

Oh, I didn't (inaudible) reinforcement is not enough. It's simply (inaudible) the notion of reinforcement.

MALE 10

All right. But I'm saying the interesting issue is what [is the reinforcement?], (inaudible) talking about, you know, the [different?] problems a lot of artists have. Well, in fact, (inaudible) [00:06:00] communication, then maybe that's more important (inaudible) made that kind of communication very important, and that's (inaudible).

B. F. SKINNER

Well, I'm certainly not — I hope you don't think that I have summarized all of the things that reinforce artists here tonight. I just chose a few examples. And (inaudible) has some effect of that kind and that's important to the artist, then [that's one of the things?] — one of the reasons why he paints. It's part of the purpose of his painting and the (inaudible) in which an emotional reinforcement (inaudible) the notion of reason or purpose. Yes?

MALE 11

There is an issue related to — you mentioned two or three (inaudible) generating (inaudible) copy it, and the other (inaudible) random (inaudible). Now, there's really a whole continuum in between, and (inaudible) artists are all (inaudible) trying to find a compromise between copying and (inaudible), which is seen [00:07:00] as [original?] or at least is reinforcing the (inaudible) just enough of what's familiar, and it projects just enough of what's new. And I think that there may be conflict in doing that, because it's not really derived from personal conflict or political or emotional conflict, but it has to do with a formal conflict of just enough newness (inaudible). And when that is successful, that can be one of the most powerful reinforcers that there is.

B. F. SKINNER

(inaudible).

MALE 11

(inaudible) comment on this related to your (inaudible) notion of (inaudible).

B. F. SKINNER

Oh, I don't mean (inaudible) one at a time. They are all mixed up. Impressionism is sort of representation [plus dither?].

MALE 12

(inaudible). (laughter)

B. F. SKINNER

[00:08:00] There is an element of representation, and there's a lovely [buzzing up?] of (inaudible). It is partly (inaudible) of dither. I would not offer that as a formal definition (inaudible), (laughter) but I think that there are elements of both in that. And all of the things I've mentioned here, (inaudible) that are true, are things that people do in a very subtle way, very [quickly?], (inaudible) know they're doing them, I dare say.

MALE 13

How do you feel about living in a world in which there is widespread ignorance on the part of the general population of the variables which control behavior? (laughter)

B. F. SKINNER

Well, that (inaudible). I'll answer that [truthfully?] afterward. I don't think that is (inaudible). I'll ask the chairman whether he wasn't us to go on any longer?

EDWARD FRY

(inaudible).

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I don't mind, but I'm sure (inaudible) a captive audience here. (inaudible).

MALE 14

I don't have a question. I have an answer.

B. F. SKINNER

Oh, good. [00:09:00] Can I ask a question? (laughter)

MALE 14

(inaudible) the message (inaudible) getting the message of painting (inaudible) everyone, and I was just thinking (inaudible) talking about the television, I was thinking of the 80 million people who watch (inaudible) [Rose Bowl Game?]. Everybody sees parts of one (inaudible) all over the country, and I think this is a (inaudible) visual art (inaudible).

B. F. SKINNER

Well, are you in favor of [improving?] the design of the (inaudible) or something of that kind?

MALE 14

No, it's a rectangular screen —

B. F. SKINNER

Yes.

MALE 14

— (inaudible) spellbound by the thing, and (inaudible).

B. F. SKINNER

Well, it's an audience that would make an artist's mouth water, too, of 80 million people, but I don't see that it's going to help the artist [00:10:00] particularly. Are you suggesting that this has some bearing on stimulating artistic production?

MALE 14

(inaudible).

B. F. SKINNER

One over there. Yes?

FEMALE 2

(inaudible) artists (inaudible) [three to five minutes?] apiece doing a moving [ballet?] or (inaudible) of their art, and this really was your art (inaudible) teaching (inaudible) would have approved of this. This was (inaudible) put on a (inaudible) phonograph (inaudible) on the screen and do it as often, you know, as you want and [vary it?] as you want. [00:11:00] So (inaudible) [paint?], really, is not the (inaudible). We're way ahead of paint.

EDWARD FRY

[One more, please?].

MALE 15

Are you saying that if you're given two paintings, if more people are reinforced by one painting than the other painting that that has something to do with the quality of one painting over the other painting?

B. F. SKINNER

Well, I think the reaction that is made to a painting depends upon the person rather than upon the painting. Now, you would say, "Well, you can't [tell the difference?] between good and bad art." Well, you can in terms of who reacts to it and in what way, but (inaudible).

MALE 15

(inaudible) more (inaudible) Pushkin and Shakespeare, more people are going to (inaudible) Pushkin than [read?] Shakespeare. There are [32 premieres?]. What does that (inaudible) schedule (inaudible)?

B. F. SKINNER

Well, I'm not going to evaluate artists against gambling in terms of the number of people who are [00:12:00] (inaudible) go in for this, but I'm trying to correct the balance here. Art doesn't have some of the powerful things going for it which, (inaudible) to say, alcohol has, but that's why I'm concerned about giving art some extra help here, is that I don't see (inaudible) stupefying the culture with drugs of various kinds is not a good thing for the culture. I don't want to go into that value judgment question here, but I'm not saying that —

MALE 15

(inaudible) cause mutations that you can't foresee, which would cause other things (inaudible).

B. F. SKINNER

Well, you're trying now to evaluate a [picture?] in terms of how many people do find it reinforcing.

MALE 15

I thought that's what you were trying to do.

B. F. SKINNER

No, I was not. I was trying to [build?] the kind of behaviors which will induce people to find [00:13:00] paintings more reinforcing than they now do.

MALE 16

What reinforcer has given you that point of view? (laughter)

B. F. SKINNER

Well, that's (inaudible) — this, again, is (inaudible) the question of why I picked this kind of action. If you assume, as (inaudible) assumed, that I'm suddenly starting something, that I'm now originating a plan [to control?] artists (inaudible), then that would be [quite wrong?]. Obviously, I have for some reason or other taken it upon myself to try to do what I can to get more people to paint pictures and more people to look at pictures. Well, you say, "Well, that doesn't really matter. Let's all get drunk." All right. But in the long run, (inaudible) value

(inaudible) a good culture will be better off. The (inaudible) the other. This is the survival [00:14:00] of cultures which I think in the long run is the only value that can be applied to these issues, but that, as you know, is another story. (laughter)

EDWARD FRY

Thank you (inaudible). (applause)

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