MALE 1

— museum on the future of art. It is my particular pleasure and honor to introduce tonight's speaker, Mr. Jack Wesley Burnham. Born in New York, Mr. Burnham is an artist and a writer. His important book *Beyond Modern Sculpture* was recently published here by George Braziller. In it, as elsewhere in his writings, and indeed in his lecture tonight, are apparent not only his capacity for acute observation and historical analysis, but also his willingness to venture into the realm of predictive thought. It is a no man's land that in recent years has been curiously but scrupulously avoided, but one that well deserves our attention. [00:01:00] Mr. Burnham is at present a fellow at the Center for Advanced Visual Studies at the Massachusetts Institute of Technology, where he has been investigating the various aspects of man-machine relationships. His lecture tonight is entitled "The Aesthetics of Intelligent Systems," following which he will be glad to entertain questions from the floor. Mr. Burnham. (applause)

JACK BURNHAM

Good evening. [00:02:00] This lecture should be probably entitled "The Aesthetics of Intelligent Systems: Them and Us" because it concerns the evolution of communication in a larger sense, and I think what you could say about art very easily at this period in history is that it's becoming an enlargement of the spread of communication in general. Actually there are probably many futures of art, but I've chosen to talk about this particular future because of its technological inevitability. Much of the recent control and communication technology now shaping the future will have what is known in the industry as a spin-off or a number of spin-offs. One of these side effects is bound to affect art. As far as [00:03:00] art is concerned I'm not particularly interested in it. I believe that aesthetics exist in revelation.

The rest what is called in the soul as art is sensory titillation and merely the means for building social prestige and other minor values. Aesthetics exist in revelation in the way Deschamps saw them 40 years ago when he talked about the aesthetic life of any object, the fact that an object lives, that is it imparts its cultural message perhaps for 10 or 20 years, and then as probably no more than a kind of reliquary like one of the instruments that perhaps a famous scientist used in a famous experiment, a curiosity that you can put in a museum and look at with awe. [00:04:00] But it's done its job which is revelation. More specifically, what I want to talk about is the fact that human pride and the refusal to acknowledge the continuity with machines is the basis for man's continuing distrust of the industrial revolution. The classical notion of machines is simply that machines are no more than a means of production, a means of making the economic wheels go round. Thus machines may produce art but not be art or not be any direct part of the art experience. This probably accounts for the sympathy of industrial fabricated art and the hostility surrounding art made of machines themselves. [00:05:00] However, presently we're beginning to enter the second age of machines, and yet at this time few of its values are publically accepted because few of its values are understood or how they permeated the public consciousness at a value which we can understand.

What is the second age of machines? Essentially these new machines are information processing devices. They not only control the production machinery, but they interact and communicate with other machines and human beings. In a larger sense, the function of this technology is not production but the amplification and generation of information. As Les Levine has insisted, the

field of object production at this point in history has been [00:06:00] too well analyzed and structured to provide further incentive for the artist. I rather concur with Mr. Levine's thought. It is almost inevitable that artists will turn towards the machine as a source of more direct communication. Historically all abstract art movements have rejected their predecessors for anthropomorphism or tendencies thereof. In a sense, this has been an attempt to reject the idealism which has traditionally been attached anthropomorphic imagery. Embodied in this is a wish to seem more scientific and objective about reality. However, I like to remind you that illusionism in art is only one form of anthropomorphism. That form that art historians have [00:07:00] thought about the most and that form that artists have worried about the most. Yet it's my basic contention that all art is essentially anthropomorphic, and this we cannot escape. If one interprets art not through appearance but by its function and relation to human thought, namely tools are extensions of human endeavors. More and more anthropologists are beginning to look at tools as parts of a human process to shape the environment.

In the same way, symbologies are human extensions, and if those symbologies happen to be viewed in objects which have no functional value, that nevertheless doesn't make them any less anthropomorphic. The biologist P. D. Medawar sees two types of evolution. [00:08:00] First he sees hereditary evolution which on man's timescale is incredibly slow in bringing about change. The other type of evolution is cultural or exosomatic evolution, which is evolution taking place outside the human body. So far exosomatic evolution has been latent in terms of its effect upon human body but probably I think this will change within the next 10 to 30 years. In a sense, all tools are bodily extensions. Space capsules are exosomatic, and they are no less anthropomorphic because they happen to be shaped sometimes like minimal sculpture. [00:09:00]

A cornerstone of l'art pour l'art is E. M. Forster's remark that history evolves and art stands still. Forster meant that we cannot validly compare various periods of art history for being more or less advanced. In these two particular paintings that I'm showing you here on your left is Rembrandt's portrait of his father about 1630, and the other Kenneth Noland's "Graded Exposure" of just two years ago but 19 feet 5 inches long. Both are actually types of pictorial abstraction painted on canvas. Viewer relationship with these works is no different than it was when the cave dwellers gazed at the red bison paintings on the walls of the caves at Lascaux. [00:10:00]

The desire to evoke emotion and wonder through latent symbolism historically seems to be a visual constant. The reason why I show these slides is to make a very, very specific suggestion which is that the history of art up until the present what we've been doing is engaging in what you might call contemplative art or that is what another famous art historian called empathy or projecting one's feelings into an inner object with its own latent set of symbols. The type of art I'm going to talk about in relation to the machine you might call responsive art or interactive art. In a very real sense all previous art [00:11:00] was contemplative and also it was non-evolutionary both in the sense that E. M. Forster talked about it and also in a sense that actually the viewer relationship stayed essentially the same throughout the history of man. What I suspect and what I propose now is that we're in for some changes. Future responsive art involving high degrees of intelligence will be evolutionary. It will change man, his intelligence, and sensory capacities as it changes itself. However, qualitatively it will be impossible to say

that it's more important or less important than earlier art. That business about qualitative and various hierarchical ways of assessing art [00:12:00] I'm not interested in. (pause)

One thing that you might say about this art of painting, this art of inert sculpture that we've known so far is that it relied on a fixed viewer stimuli relationship, and if there were changes they were usually changes that were wrought through conditioning and probing the viewer to look at the work differently. In a great part this was due to an earlier scientific conception of the world in which man acted upon the environment as a passive — in which man acted upon the environment as if the environment were a passive being. It did not respond, and you might say that this is really [00:13:00] the same thinking that's lasted up to the present in terms of our own technological urge. You take from the environment what you need. It lies there, and that's the end of it. But more and more what scientists, ecologists recognize is that the environment reacts back. It responds. Ultimately it might take two or three or a thousand years, but it does respond in kind. And I'll go into this point later on.

Last summer in London, a show was put on at the New Institute of Contemporary Art called Cybernetic Serendipity. It was an attempt to collect computer oriented art from all over the world by the staff there, and namely Jasia Reichardt. I remember Jasia coming around to Evanston where I was at the time, and asking, [00:14:00] "My goodness, where is all the computer inspired art?" She had been told that there was a lot out here in America, and she was unfortunately fooled. And what she came away with I think for the most part and so did most of the English critics was a mixed bag of tricks that didn't add up to too much. By formal standards and by standards of most people who look at art shows today, it was not a very inspiring show. But it was mildly interesting to those people who were involved in computer technology.

Historically you might say that that computer show in London last summer was important because it collected for the first time in our history a body of thought which has been growing since the early 1950s, growing around the aesthetic potential of information processing as a way of expressing art. [00:15:00] Furthermore in [Zagreb?] and Europe in general at the New Tendencies Number Four meeting early last August, there was a symposium devoted to computers and visual research. Mostly this was information theory analysis of graphic art with a little bit of computer art thrown in, but there's little use of the computer either in socialist countries or the other European countries except for perhaps West Germany.

Computer art only seems to show up in those countries where this is a surplus of computer facilities, and this is one thing I wish to stress heartily when it comes to technological art and perhaps art in general which is that any country that produces it to any significant degree and makes its aesthetic mark has to have a surplus in money, in materials, [00:16:00] and particularly perhaps in newer forms of art and computer and information processing facilities. What I show you here is a work by Michael Noll at Bell Labs which he did in the early '60s. It's called "Ninety Parallel Sinusoids with Linearly Increasing Period." Obviously since 1960, this approach that is computer graphics is the approach that's been used the most and developed and talked about the most. However, it's probably the least creative way of using the computer, its direct output.

As one computer engineer says, this is Don Hatfield. The uses the computer are put to now as far as art is concerned are like [00:17:00] trying to fit a steam engine into the body of an iron horse. All inventions begin by taking the shape of the device which they have somehow superseded. And the idea of computer graphics is perhaps one of those simplistic allusions which we'll rid ourselves with or from in a few years. Already the tendencies of Michael Noll and other people writing about computer graphics to move on to other areas at least in the writings. The work on your left is a work by a young American sculpture of Johan Severtson, and it's called "Three Fourths [CV?]." And it's simply composed of two fairly large aluminum plates.

How this was made was to [00:18:00] plot the intersection of these lines here, of these planes here, these intersection that you have along here via computer by computer printout forms, and to take advantage of perhaps 500 variations of that printout given a certain parameter of possibilities. Actually this isn't very creative either, and you could perhaps get anything, and as I've pointed out to Severson and as he well knows, he hasn't done anything here that people haven't done with their brains and with their hands as far as the finished product is concerned.

This is another point I wish to point out, which is sort of parallel to the whole business of computer graphics, which is that if you can't produce something [00:19:00] which is somehow more sophisticated or an extension that goes beyond human thinking and human endeavor, then you really haven't used the computer. Severtson now is doing somewhat the same work but he's showing movie loops of the work and the process of making the work via computer. In some cases, I would say that these are more interesting than this finished object that you see right here.

The other one here is of course Ed Kienholz's work "The Friendly Gray Computer—Star Gauge Model 54." Here Kienholz has anthropomorphized the computer in an obvious data sense. It is slightly interactive. There are tapes here and a telephone and things go round, but in a sense he's using the computer as a totem, and he's not too involved in its more serious implications. [00:20:00] (pause) The four men that you see here on your left are pioneers of computer art. I'm sorry — pioneers of cybernetics in general. From left to right, Ross Ashby, Warren McCulloch, Grey Walter, and Norbert Wiener. Here they are meeting in Paris in 1951. At this time, the whole business of cybernetics as a scientific undertaking was really getting along on an international way for the first time. Actually it stems back to an idea which Norbert Wiener termed the steady of control in animals and machines. Much of the most sophisticated development in the computer in the last 15 years has been [00:21:00] as a result of this early understanding of what cybernetics is with a great number of exceptions.

The other work that you see here is Grey Walter's Elsie or his Machina Speculatrix of about 1948. This is a little animal here, and you see it with a light on top of it, and a timed photograph has been taken. So you see the little animal in the upper left hand corner moving around in a kind of wayward path. He's moving toward that hutch that you see over on the right, and the hutch has a light in it. And for Elsie, the light means food. And it goes into the hutch, plugs into a series of sockets, and then it imbibes its food which happens to be electricity up to the point of satiation, what happens to be about 7.5 volts, and then it backs out [00:22:00] and goes its way for a while.

Actually this is a very simple kind of proto organism, but for Walter and for a few others it embodied such reactions as fear, frustration, hunger, laxity, and so forth. Sometimes it could be very energetic, and he did this by electronically simulating what you might call two brain cells and linking them together in such as way as there are a number of possibilities within these two brain cells. Actually the electronic production of this piece of work is extremely simple, and it's the first prototype for a number of other ventures which try to pattern in some way the [00:23:00] neurological behavior of animals. In a sense, it's a very latent and perhaps obvious example of cybernetics, but it's the one that's caught the public's eye and which artists have gained some kind of sustenance ever since.

One thing you have to say about cybernetic art from its inception is that — and much of the work that I'm going to show isn't cybernetic by any stretch of the imagination — is that it's almost universally bad, and the exceptions to it are every once in a while simply lapses where things are interesting for their own sake. These are two works by Nicolas Schöffer. The one on the right is called "Cybernetic" — I'm sorry, on your left — is called "Cybernetic Spatial Dynamic Construction #1" of 1956. This was first shown in [00:24:00] the Sarah Bernhardt theater in Paris, and this whole approach of Schöffer of using a kind of aluminum tinker toy buildup as you see here with lots of little veins and spinning objects is a very much smacking of the kind of futurism that came out of the 1920s and '30s and reminds one of some of the pictures in Alexander [Cuarto?] "Worlds to Come," of the '30s. Most people of this generation would say it's utterly out of date.

One thing you can credit Schöffer with is realizing the possibility of cybernetic relationships being put into a work of art first. The other is a cybernetic sculpture which attempts to be a light tower. Perhaps that's its problem. It's enormous, and hopefully or whether you hope [00:25:00] or not, it's going to be built on the (inaudible) of Paris perhaps sometime in the early 1970s. Basis of most of these works is that they get their incentive for activity which is mainly lights and their spinning veins from the environment. The work on the right takes its stimuli from traffic movement, from temperature control, from various other things.

One thing you can say about cybernetic works or art in general is that there must be some kind of meaningful relationship between the input and the output. One of the problems with so much work like this which is interactive or which depends on some kind of external stimuli is that there is no real meaning. That's probably it's fundamental weakness. The fact that its [00:26:00] structure itself has no relationship to what it does. This is a work by Jean Charlot probably about 1960. It's one of his information theory paintings, and this is again simply an attempt to raise the point which I have done before which is that artists when they come upon a new, scientific or a new cultural phenomenon use it in the way which is most familiar to them by taking these punch out tapes and simply pasting them up as a kind of collage.

These two works are by the artist John Goodyear. The one on your left is called "Heat Sequence" of 1967. The reason I show these in juxtaposition [00:27:00] both works are what you might call heat sequences or that is the aluminum bars which you see here. These hollow tubes have different degrees of heat in them, and you grab a hold of them. But the shift in terms of the emphasis of how they're presented is the important thing. On the left, Goodyear tries to

present these works as if they were some kind of minimal art, and — (break in audio) pedestal, a way of being if you will a kind of peeping Tom.

What is happening now is that artists and particularly the younger artists are gaining momentum over the idea that the real world environment is the condition of art. To a certain extent, many art environments now are rather arch and contrived, but I don't think that [00:28:00] that's the case in these works by Dennis Oppenheim. I think Oppenheim has been instrumental in breaking down the barriers and breaking down the necessary conceptual and physical limits and constraints which artists have up to the present have put on — (break in audio)

— this a few years — well, not a few years ago — about a year ago. And I think it's increasingly become an important factor in art consciousness where before a process as far as the studio was concerned might have been a kind of (inaudible) gesture, a way of bringing the fun into the museum. I think it's a serious concern at this point. The point I'm trying to make in terms of interactive art is that the fact that you have an object like this work by [Dupree?] and Ralph Martel [00:29:00] —

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Aesthetics of Intelligent Systems / Jack Burnham. 1969/1/28. Reel-to-Reel collection. A0004. Solomon R. Guggenheim Museum Archives, New York

