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Oral history interview with Ray Eames, 1980 July 28-August 20

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Transcript

Preface

The following oral history transcript is the result of a tape-recorded interview with Ray Kaiser Eames on July 28 & 31 and Auguest 20, 1980. The interview took place in Venice, CA, and was conducted by Ruth Bowman for the Archives of American Art, Smithsonian Institution.

Interview

RUTH BOWMAN: I have come here on a Monday afternoon and interrupted your day to talk with you a little bit about the past, which I guess is partly on your mind now anyway, because all of the things that you are doing are bringing the past up to the present.

RAY KAISER EAMES: Yes, more or less.

RUTH BOWMAN: I was interested in reading through the material I've collected through the years about you and Charles to see that there was a long history, from 1907 to 1940, of Charles, and then you appear in the biographical material in 1940. Is that when you met him?

RAY KAISER EAMES: Yes, 1940, at Cranbrook.

RUTH BOWMAN: You were at Cranbrook!

RAY KAISER EAMES: I was at Cranbrook for a very short time. I realize it didn't . . . I only realized it the other day when I went back and everyone was expecting to hear a great deal about Cranbrook, and I counted the days, and there were not very many. But I had gone there in 1940 on my way to California because a dear friend had been there and thought it was a good idea, as I was talking. I was coming out here to build a house. My mother had died, and I had been in New York for many years and thought it was time that I came back to California.

RUTH BOWMAN: Were you a native Californian?

RAY KAISER EAMES: Yes, I was born in Sacramento.

RUTH BOWMAN: Oh, really? Did you live in a big house when you were a kid?

RAY KAISER EAMES: No, I lived in an apartment, and then in what was called a "bungalow" -- it was a little California building, and then later in a house, outside of town I suppose it would be. My father died, and an old friend who'd been to a school in the East suggested that it would be a good place to study, because it had been a wonderful experience for her. So I went to this funny school in upper New York, which was marvelous.

RUTH BOWMAN: What kind of school was it?

RAY KAISER EAMES: It had been a school that went up to college, and then later became a junior college. So I only had two years of college.

RUTH BOWMAN: Through the junior college level. And this was in upstate New York?

RAY KAISER EAMES: Yes, outside of Poughkeepsie, in Millbrook; it was called Bennett.

RUTH BOWMAN: Is it still there?

RAY KAISER EAMES: No, it disappeared, unfortunately.

RUTH BOWMAN: And then when you finished in the junior college you came to New York city, or you went back to Sacramento?

RAY KAISER EAMES: No, I haven't been back to Sacramento, actually, except to visit. Then I went to New York City because friends at school had heard of a wonderful painting teacher. They were ahead of me, and they had gone to study there that winter before I was out. I went then to the summer school and then went back to New York and stayed there for several years.

RUTH BOWMAN: The summer school was in Provincetown?

RAY KAISER EAMES: No, it was in Gloucester first. Hans Hofmann was the teacher. He was marvelous. It was a great part of my life -- a great experience. It meant a great deal to me. I worked with him for years. You know, it

was like working with him, it wasn't as most classes are considered today, I think. It just went on and on.

RUTH BOWMAN: And you lived by yourself in New York City?

RAY KAISER EAMES: I lived by myself. My mother was there for part of the time, and then I was there for a short time, and then I left to go and be with my mother when she was ill, and when she died I decided to go to California, as I said.

RUTH BOWMAN: And that was in 1940.

RAY KAISER EAMES: Yes, 1940. And then my friend [Ben Baldwin], who was an architect and had also studied with Hofmann -- as you know or might not know, many people studied with him who were not painters: sculptors, writers, musicians, and architects all studied with him, and yes, what else is there -- dancers. I can't think of all the different areas.

RUTH BOWMAN: But you went as a painter.

RAY KAISER EAMES: Yes, I went as a student.

RUTH BOWMAN: And the curriculum was such that there were rewards in it for everyone, even if they didn't go into . . . ?

RAY KAISER EAMES: Yes, he was just a great teacher, and the point of view for him could be translated -- I'm trying to think of someone similar, because I don't think that many of the people that we know as great painters are such great teachers. He really was.

RUTH BOWMAN: Was the social life around the school very active? Did the people who went to the classes also see one another socially with their rich life around there?

RAY KAISER EAMES: The word "social" is something that doesn't mean anything to me, because we would just be working, and we might go out to eat, either alone or with someone, or all together, or some way; and the same way in the evening. We'd either work or stop work, some would go to the movies; and of course, later on, we'd gather as a group; it was the beginning of . . . . All this seems like ancient history, which this is, of course. The old American Abstract Artists group was formed then.

RUTH BOWMAN: And you were involved with those people.

RAY KAISER EAMES: One of the founding members, as they say, in the early days.

RUTH BOWMAN: Along with Balcomb Greene and . . .

RAY KAISER EAMES: Peter Swindon and . . .

RUTH BOWMAN: . . . Burgoyne Diller.

RAY KAISER EAMES: Diller -- he died early. He was there part of the time.

RUTH BOWMAN: I guess he left to go work on the WPA.

RAY KAISER EAMES: Then he was also in the Army. Oh, almost everyone was involved with the WPA.

RUTH BOWMAN: Were you?

RAY KAISER EAMES: No, I wasn't, because I had to leave about that time.

RUTH BOWMAN: And you went to Cranbook to visit your friend . . . ?

RAY KAISER EAMES: No, I went there because my friend had been there, and had told me about the various teachers there that were so good. I hadn't had any practical training, and I thought that would be a very good thing to know -- you know, to increase my knowledge of how things are done. At one time, just before finding Hofmann, I was going to go study engineering. Another friend had said how Cooper Union was such a great place, and that seemed like a good idea, because somehow I've always been interested in structure, whatever form it was -- interested in dance and music, and even my interest in literature had that base, I think -- sculpture -- as structure in architecture. This seemed the perfect place because hearing about Eero Saarinen, and there's a great potter, Maija Grotell -- did you know that at all?

RUTH BOWMAN: I know Cranbrook, yes.

RAY KAISER EAMES: At that time it was quite a place.

RUTH BOWMAN: I've just been there recently.

RAY KAISER EAMES: Really?

RUTH BOWMAN: You stayed there . . . ?

RAY KAISER EAMES: Eliel Saarinen, Marianne Strengell, and Carl Milles -- Maija Grotell . . . .

RUTH BOWMAN: And you took classes in that curriculum?

RAY KAISER EAMES: I didn't take any painting; I didn't want to, but I did other things. You know, it was just interesting to me. Charles at that time was teaching design, as well as working with Eero. Eero had just gotten out of Yale and come back to work with his father. They also . . . he and Charles became friends, because they were both working for Eliel. is this something you know?

RUTH BOWMAN: It's nothing that the Archives has heard from you.

RAY KAISER EAMES: So they would work on these projects, and then also work on things together at night. Eero was especially interested in competitions: he loved competing, and that's when the Museum of Modern Art competition came up and they were working together. I got into the middle of that.

RUTH BOWMAN: So you worked on the original chairs.

RAY KAISER EAMES: Yes, yes. -- I didn't work -- I was like a hand, you know, just . . . . It was quite under way by that time; there was a model; I watched the photographing of the model, and then I worked on the drawings, the presentation drawings. And that ended, and then I left after it was sent in.

RUTH BOWMAN: You left from Cranbook, and you came out here to California?

RAY KAISER EAMES: No, I didn't. I went back -- my brother was in the South -- I went to see him.

RUTH BOWMAN: Oh, you're not an only child?

RAY KAISER EAMES: Not an only child; I have one brother, Maurice. We're the only family and he's still here and wonderful; he's retired and living in Virginia.

RUTH BOWMAN: And so you went to visit him from Cranbrook.

RAY KAISER EAMES: And at the end of the spring session -- I left in December, and at the beginning of the summer we were married. Charles wanted to continue to work on the idea of high quality in mass production -- he had a special way of working there that was marvelous, and since he had done a great, great deal of work before -- I don't know actually how much is known about that. Actually, it's someplace in the file.

RUTH BOWMAN: It's someplace, but I think that whatever you want to talk about, Ray, it's very important to hear from you; what you say is important, even though it's written in books and biographies -- how it comes into your description of what happened to you.

RAY KAISER EAMES: I always feel I don't know as much as someone else right now. But he had worked, as people must know, from a very early age, had worked very hard and done a great deal and, when he was asked to go to Cranbrook, he already had an architectural practice. It meant a lot to him because he had a great deal as a base for that, and his work with Eliel meant so much because he admired him very much. I'm sure he was able to give him a great deal, too. He'd always done everything that had to be done about architecture from the outside of the structure to the inside and finishing -- everything. So, after this work on the competition, the whole idea of mass production was interesting and he felt that, because of the coming of the War, problems in the factories -- they'd started to build things and found that it was . . . part of the competition had to do with model producing and product producing, but they ran into all kinds of difficulties, because it was so experimental that they couldn't find ways -- they had to do it mostly by hand, which wasn't what they were both thinking of, he and Eero.

RUTH BOWMAN: They were pressing plywood into molds . . . ?

RAY KAISER EAMES: They were sort of laying it out by hand instead of making it real production. He thought that needed development and felt that it couldn't be done by staying at Cranbrook, that it demanded too much. So we felt, by going away -- we could both -- I was terribly interested in it, too -- we could work on it without any pulls in other directions, because, you know, being in New York, it's difficult to concentrate. Charles also always

said he'd had enough of snow and ice and the Midwest, and the year before he had come out with Eero and Lily and had thought it was a great climate, and felt that by being here -- he'd been in San Francisco and felt that was pulling away also, with people and visiting and friends -- but by being in Southern California we wouldn't have that pull. So we just drove out. And it was true, we didn't find any difficulty in staying.

RUTH BOWMAN: You came in the summer of 1941?

RAY KAISER EAMES: 1941.

RUTH BOWMAN: And did you have this place right away?

RAY KAISER EAMES: No, not right away. It seems so unimportant to go from step to step. But we had it soon. We found a small place in Westwood first, for less than a year, I guess. Then nearby for a short time -- it was a bakery nearby. And then to this place, so it's been -- how many years?

RUTH BOWMAN: Well over thirty.

RAY KAISER EAMES: And we've been living here ever since.

RUTH BOWMAN: As I read through the material that has been -- so much has been published -- and, as I walked through the exhibition at U.C.L.A. I realized, as you have just said, that going through your experiences chronologically is probably not the best way to do this kind of interview. It's really because of the numbers of categories in which you both have worked. It probably would be just as well if we talked about people and environments and things, and the way you worked and the way things happened. You had films that you made -- that must have happened in a certain kind of way.

RAY KAISER EAMES: Yes, Charles had always been terribly interested in photography. I think it's been known that his father was a great amateur photographer and had left equipment. His father died when he was very young. He left his equipment and Charles started to read instructions and taught himself about photography. The great joke he always made was that he was making glass plate negatives before hearing that there was such a thing as film, because of having this old equipment. But he learned a great deal. Then he used it always as a tool, photographing architecture, photographing objects, studying it by photographing models. And I think he made some experiments in film when he was at Cranbook. Some film . . . I must check that, I think they might have it. We kept records of everything, but he never shot just a record, he always shot something and made a good-looking photograph. But then -- that was another joke, but it had some truth in it -- friends had left us a projector and editing equipment and we had nothing to project, so we decided to make a film -- the film -- but he was really interested in the whole. In terms of communication, he's always been interested in that subject, and this seemed to be the logical extension of it, the use of film for studying and putting things into form, that could be then handed over. We first made a film to experiment, just with the technique, and observing things, like toys -- but I think that very first film also had the underlying quality of communication. We shot many toys, but shot them so that you could understand and see them in a way that you couldn't see them otherwise. It was brought out to be a thing in itself seen differently than you would otherwise see it, I think.

RUTH BOWMAN: The films always have . . . the ones that I've seen, maybe fifteen of them, always had a scale change, very close in.

RAY KAISER EAMES: Yes. Charles loved doing that, and I think it's a very telling example of how things would happen because of his really wanting them to so much. For instance, we had a little 16mm camera and no equipment to do what was needed.

RUTH BOWMAN: You mean, like editing?

RAY KAISER EAMES: Like close-up lenses. Close-up lenses were too expensive and we had very little money, so he devised ways of doing it by using cardboard tubes and calculating the exposure, and rubber bands. You know, there was always this technique, everything has been done that way, the technique of how to accomplish something if it has to be accomplished with what means one has at his disposal.

RUTH BOWMAN: Is that how the films on exhibitions were designed? Was that something to solve a problem?

RAY KAISER EAMES: It was a way of studying the problem. We were asked to do a thing about the Georgia Experiment; did you know about that? How to improve the teaching of design, and art, really, it was art. George Nelson and ourselves were involved and, instead of making a report, we made a film. Or rather, we put together an hour program made up of film and slides and words and clips of other films. It was intended as an example of how material could be used to give a base for student and teacher from which to develop and expand -- not use up all the time, step by step, all of the teacher's time and the student's time. And that was shown. But we wanted examples. For instance, we chose the subject of communications, because we were all interested in that

and thought we would find little clips of things that would explain it and help it. We couldn't find any. We had just a terrible waste of time looking at catalogues, trying to find films and finding that it took forty-five minutes to get to a point which was not made clearly. So that's when we decided we'd have to do something ourselves. And then later, Alexander Girard was called in and put on this -- did you ever hear of the "Sample Lesson?" It was shown first in Georgia, then at U.C.L.A. You know, it's like a club, the people who have seen it and the people who haven't seen it.

RUTH BOWMAN: The presentation. They were done in the mid-Fifties?

RAY KAISER EAMES: 1952, I think, under the School of Engineering. It was Dean Boelter at that time. He was a friend, such a wonderful man, terribly interested in so many facets of learning. We thought he was great. He enjoyed it all, too, and helped very much.

RUTH BOWMAN: By that time you'd built your house?

RAY KAISER EAMES: Yes, that's right. The house was built in 1948, I think, which is another coming together of time and problem and possibility, through Arts and Architecture. The magazine, do you know that? Did you know John Entenza?

RUTH BOWMAN: I met him.

RAY KAISER EAMES: Really? We were so interested in the magazine, and he was so interested in the magazine and what it could do. He developed the idea of case-study houses and wanted us to do something. And we thought it would be fine if we could do something -- not just build a house, but the idea of a structure, a way of using . . . .

RUTH BOWMAN: You got to choose the materials that went into your house?

RAY KAISER EAMES: No, it was not just the materials, it was a choice of the structure itself, rather than to do a personal house. It was the idea of using materials in a different way, materials that could be bought from a catalog. So that there was a continuation of the idea of mass production, so that people would not have to build stick by stick, but with material that comes ready-made -- off-the-shelf in that sense.

RUTH BOWMAN: Did you have any contact with people like Schindler and Neutra at that point, do you remember?

RAY KAISER EAMES: Early on we had seen Neutra and, of course, we admired him very much. Charles always said his greatest contribution was not these special houses but the fact that he was producing these drawings, sets of drawings, and then refining those drawings, and refining those so that they were . . . it became a way that the anonymous contractor could use and build houses. The same way with Schindler. You know, he was a great romantic character, I think, but we didn't talk too much. I didn't really know him that well. And the same way with Richard Neutra. He was just such a nice, interesting, good-looking character. But the idea of our house was more linked to the furniture, I think, than anything else. We were concerned about the use of time, people's labor, for the greatest result, so that one person could spend a long time making one chair and he would have made that nice chair, and then other people would not have that result, they would have something much less. But if that effort went into production, the idea of production, it would be at a higher level.

RUTH BOWMAN: So that the idea of good for more people was intrinsic from the very beginning.

RAY KAISER EAMES: I think so.

RUTH BOWMAN: And that had to do with the house as well as the furniture. Do you think the house has had an impact? I mean, where do you think it has?

RAY KAISER EAMES: I have no idea. I don't think it's possible to know, because I know that students have come from all over and admired it. I think they get something from it, but how it shows, I don't know. I don't think as a system it's used particularly. I mean, the fact that it's metal, you know, steel frame, I think is less important than the idea that its form can be adapted to a person's needs rather than a person's needs being a part of every little connection. I think the abstractness of it is appreciated and felt to be personal, eventually -- the possibility of its being personal. I don't know if that makes any sense.

RUTH BOWMAN: It does make sense. In a Los Angeles setting, working here without too much distraction, people coming to you, you also started to travel fairly early on, didn't you, to go to other places to do work?

RAY KAISER EAMES: I don't think we did. I don't know how that worked. I think we worked here, mainly. We worked here. But we certainly had connections with people in other places, and that was the great advantage of working here, because it was far from the people for whom we worked. The advantage was having peace and

quiet and time.

RUTH BOWMAN: You collected seashells, living things from the sea, and objects.

RAY KAISER EAMES: Yes, almost everything that was ever collected was just because of an example of some facet of design and form. We never collected anything just as collectors, but because something was inherent in the piece that made it seem like a good idea to be looking at. Seashells, certainly. From early on we had chemical lab products, you know, containers, because the form was beautiful and pure and they were made of fine material and, at that time, were very inexpensive. We felt that was a great example. We had cereal bowls that were evaporating dishes and teacups that were made by the chemical people -- a beautiful form. They're now unbelievably expensive because they were made by hand, but the form had been developed over many years. Charles believed in what was in one of the films -- putting in what was good and taking out what was bad. Over the years, having a form develop.

RUTH BOWMAN: To turn out the tremendous amount of work that's come out of here took a lot of organization and, I assume, innumerable people. How did people arrive here? How did you find the people who worked with you over the years?

RAY KAISER EAMES: I absolutely don't know. People just came. We'd call upon people we knew, and other people would come and say they would like to work. We would make a decision about whether they just liked the idea or were capable of doing something. Many people thought they would like to work but didn't really . . . they liked just being around it, and other people really wanted to contribute, and that was very good. Usually someone we knew, or who knew someone we knew. I haven't figured it all out. The very first people were all architects and designers, and one young architect, one person that worked for so long with us [Don Albinson] -- he had been a student of Charles's, and he had to leave. He finished school and wanted so much to come to work, but he had to go to War. Then he became a pilot and he came through beautifully and said the only thing that kept him going was the thought of being able to come back and continue to work, because he had worked with Charles at Cranbook. And he came back and was absolutely fine and we worked together very happily for many years.

RUTH BOWMAN: Were there specialists, or were there people who were versatile like the two of you?

RAY KAISER EAMES: I don't remember. There was a wonderful girl in the very beginning who had studied with Carl Milles and knew everything there was to know about casting, I think because she had this great teacher, a wonderful, wonderful man. He knew so much about casting and she studied with him. She knew it and she came to help us to make the molds that had to be made. And one great, great contributor was a costume designer and set designer from England. There were two sisters and a good friend: Margaret Harris, Elizabeth Montgomery, and Margaret Harris's sister Sophie. And their company was called "Motley." They worked at the Old Vic in the early days, and it was destroyed in the War, bombed completely, and they were simultaneously asked to do some work here for the movies. So that's when Charles first met them. And she came and helped because she had to be here -- she couldn't go back at that time, and she was just a marvelous, marvelous helper who really did a great deal by just knowing about patterns and making paper that would fit the mold and working on that -- able to tackle anything because she just knew what could be done.

RUTH BOWMAN: The furniture was an ongoing project throughout all the other projects?

RAY KAISER EAMES: Yes, I think so. Off and on -- and mostly on. Yes, during the War we worked on . . . we had been working on the furniture and had been doing the experiments that we felt had to be done. But right in the middle of that, the War made it impossible to get materials, you know, for anything to be done. We also felt an obligation of what we could do to help the situation. We began by talking to an old friend of Charles's who was in the Navy and heard about this terrible condition: the leg splints that were being used, which were metal, a scarce material. Also, the design of them was so bad that it was actually contributing to deaths rather than helping anyone. So we felt, well, this is a material that could well be used, the molded plywood, and developed that early on and made the equipment, and it was used by the Navy and so forth. People said it really saved many lives. And that was a very good base for the continuation of the work, learning about the nature of molded plywood and being able to make that many experiments.

RUTH BOWMAN: And then after the War you went . . . ?

RAY KAISER EAMES: Went right back to it, right.

RUTH BOWMAN: Back to the chairs.

RAY KAISER EAMES: Back to the chairs, and developed some of them to the point where . . . Herbert Matter came out during the War -- he was a great photographer -- do you know him?

RUTH BOWMAN: Married to your friend, Jean Carles, I guess.

RAY KAISER EAMES: Mercedes.

RUTH BOWMAN: Whose name was Jean when she was a member of the American Abstract Expressionists.

RAY KAISER EAMES: Well, it was Mercedes.

RUTH BOWMAN: Arthur Carles's daughter.

RAY KAISER EAMES: Absolutely.

RUTH BOWMAN: Once I found out you were Ray Kaiser, it all fell together. So he [Herbert Matter] came out, and did he do photography for you?

RAY KAISER EAMES: He also worked on the covers for Arts and Architecture. He made such beautiful ones, and he helped make the panels that were in the exhibition of the furniture at the Museum of Modern Art in 1946.

RUTH BOWMAN: That changed the lives of a lot of people.

RAY KAISER EAMES: Many people were afraid to sit on them. We had models and we were a little bit afraid, too; they were just all models, there couldn't be any production. Well, of course it was production in one form, but not finally. But we had them out, and people were really afraid to sit on them. It's hard to think of now, but we were just not used to sitting on anything as thin as that that felt that it would be strong.

RUTH BOWMAN: There were some that were three-legged, too.

RAY KAISER EAMES: Yes, that was something that was not pursued, even though it held people very well. Charles felt, too, that it was not worth the surprise element. If someone bent the wrong way or leaned the wrong way, it would tilt and would shock someone.

RUTH BOWMAN: That was the time that you made the "elephants" and the children's chairs.

RAY KAISER EAMES: We made those. We did a lot of experiments on the children's chairs because it was a smaller object. We tested bonds and strengthening the wood by curving it.

RUTH BOWMAN: In the course of the development of the films and the exhibitions that began to be organized, was the Moscow exhibit the first big exhibition that you were involved in?

RAY KAISER EAMES: In size, certainly, but it was a development over many years of the use of slides and multi-image. The first . . . I mean, it just developed from one to two to three and so forth, but I guess the so-called "Georgia" or the "Sample Lesson" was the first large exposure to that multi-screen image use. Then Moscow certainly was the largest.

RUTH BOWMAN: How did you feel about the fact that these multi-image shows can't be replicated, or are difficult to replicate? Did you have any other way of handling that material? Did you make books out of them?

RAY KAISER EAMES: No, we didn't, but I'm trying to call someone about that right how; trying to record on the single screen the images of a three-screen program, so there'll be a record. Charles never wanted to, because the loss of quality is so great that it's unbearable in that sense. But I think it's worth it to have the idea held, because the relationships are so interesting. The three, one to another to another, the simultaneity of that, the forcing of one's eyes to see, not step by step but almost absorbing all at once, is more interesting to me. I would like to have it done. I don't know if it's possible, but we're going to try.

RUTH BOWMAN: In terms of communication, this is a continuity, isn't it? The idea is that these images come at you in this kind of way?

RAY KAISER EAMES: Charles didn't like to have time wasted. He wanted to use time. He felt that if you could pack something in on a film -- for instance, in the peep shows that we made, you have two minutes worth of very tightly packed bits of information; it's better to see it over again, if necessary, than to take twice as long, boring some people for the sake of explaining to others.

RUTH BOWMAN: I once asked a member of the staff here if any educational evaluation had ever been done on your material, and this was, I guess, at the time of the Franklin and Jefferson exhibition. And she said, no, that wasn't the way you worked.

RAY KAISER EAMES: You mean, our evaluation?

RUTH BOWMAN: No, I meant evaluation by some educational group about who learns what, or how people learn.

RAY KAISER EAMES: Oh, yes, we learned very early on what could be retained in a very short time -- you know, not by going out and asking, but by it coming back to us. In '55 we made a film as a record, which is a very central part also, I think, of the work. The feeling that people should do something themselves. Museums have shows and shows and then nothing is left but a catalog that doesn't tell everything that it should. It tells a great deal, but it doesn't tell everything. Whereby a film -- a film contains a great deal of held information, and so we made a film which tried to explain to the Museum of Modern Art what we were talking about. We made a film on the Indian show, which was first in 1955.

RUTH BOWMAN: The Nehru?

RAY KAISER EAMES: No, long before that. The Museum of Modern Art called it "Textiles and Ornamental Arts of India." Did you ever see it?

RUTH BOWMAN: Yes.

RAY KAISER EAMES: Anyway, we packed as much in as possible, because we knew that most of this material had been gathered from individuals and in basements and storage places and couldn't be gathered again. Edgar Kaufman and Alexander Girard went to India, England, and various places collecting this material, and then Girard made this beautiful, beautiful installation. But we knew it was coming together for a comparatively short time for comparatively few people. Many, many people saw it, but compared to all the people who didn't see it, it was few. We thought it should be preserved some way; so we made the film. Then we felt by using slides it would . . . we'd already done one about the house, using slides, and we knew a certain way of looking that, unlike movie making . . . . Anyway, people called up and said, "It was marvelous, except that I was at the exhibition and there were things in the show that were not in the exhibition." For instance, they said there was a pot in the movie that they knew wasn't in the exhibition. And they had spent hours there. Actually, it was there, and we knew that it was there on the screen for less than a half a second. So to have someone see something in less than half a second that they had not seen or not remembered seeing right in the exhibition meant a great deal. We knew . . . we were convinced of it anyway, but that was very good proof. And it has been proven many other times by things that were on for a very short time which were compelling the eye to see. You must have that somewhere.

RUTH BOWMAN: I'm just fascinated by what you're saying about documentation of exhibitions. You've done it a lot since.

RAY KAISER EAMES: Several times, yes.

RUTH BOWMAN: As recently as the Degas show at the . . . ?

RAY KAISER EAMES: Yes, that was the last one. We've taken quite a few shots of the Monet exhibit but had not done anything with them. But the Degas at the Metropolitan, and then, of course, I think the most beautiful is the Cezanne. I loved that.

RUTH BOWMAN: There's a special skill necessary to photograph paintings and have them come meaningfully on the screen.

RAY KAISER EAMES: Yes, this Cezanne . . . that whole technique of shooting was just forced by Charles wanting to do something and the limitations being so great that he had to find a way. He and Bill Tondreau, who was here, a very interesting fellow, just devised a way against all odds to do it. The problem was that the light was very low, mainly because of the watercolors and the paper, and they couldn't allow extra light to be on them. They couldn't shoot them with movie cameras -- which required extra light -- so it meant using slides, and not only slides but, you know, long exposures. So you have the slides, then how can you deal with them? How does the light move on them -- so he developed this system of computer-controlled cameras to shoot them so you could finally wander over a 35mm slide. And it was really beautiful, I think. It made it possible.

RUTH BOWMAN: And all of this was an extension of his starting out with his father's equipment?

RAY KAISER EAMES: Absolutely. The same source and the same interest, the same attentiveness.

RUTH BOWMAN: When I was here once visiting you, you were at a desk with a huge pile of transparencies. I just wondered, in your way of working here, did each project have its own technique of organization? Was it organized differently each time from start, or were there customary ways of handling a project?

RAY KAISER EAMES: At this moment I couldn't possibly say. We just did whatever was necessary.

RUTH BOWMAN: To try to separate the products from the ideas at the Eames studio is impossible.

RAY KAISER EAMES: I think so.

RUTH BOWMAN: So the work, the way of working is very important. You've spent long, long hours in this place, haven't you?

RAY KAISER EAMES: Right, as many as possible. Seven days a week, day and night.

RUTH BOWMAN: Day and night?

RAY KAISER EAMES: Just because it seemed to take that long. It wasn't that we decided to do it, it was just that in order to do something we had to take as much as possible -- it became more and more difficult because there'd be less time, less quiet time, more people involved, and they, too, found it took more time, and so they would be using that time here. So there was less time to quietly study and think and reflect.

RUTH BOWMAN: You were called on once -- at the Moscow Fair -- you were called on quite frequently, weren't you?

RAY KAISER EAMES: There was always more to do than was possible.

RUTH BOWMAN: But you didn't say no very often? Or you said no a lot?

RAY KAISER EAMES: I said no a great deal. Oh, I've always had to say no a great deal. But even to do the simplest thing, it seemed to take a great deal of effort.

RUTH BOWMAN: You've sort of had in-house students; the people who were helping you were also teaching.

RAY KAISER EAMES: Not consciously, I think. That was one of the things that was very difficult, to think of people . . . anyone as a student.

RUTH BOWMAN: But they went on and took ideas.

RAY KAISER EAMES: Yes, many people have worked here and gone on very successfully, I think.

RUTH BOWMAN: You always use the best materials, the most appropriate . . . ?

RAY KAISER EAMES: "Appropriate" is Charles's word, which I love. If it's "appropriate," it works. If you say "best," it might mean the most expensive, or fine, or something, but if it's "appropriate," it works for the job.

RUTH BOWMAN: But 35 or 70mm instead of 16 . . . ?

RAY KAISER EAMES: Well, the problem there was the distance. 70mm was used for the Moscow show because it was a great distance, and enormous screens. It had to be seen by five thousand people, between four and five thousand people, for maybe twenty minutes, and it wouldn't be seen as well if it had been 16mm, it would have been seen dimly with clouds of grain all over it. So the problem was how to let them see the story as directly as possible. The story was, of course, not a story, a novel. The problem was, how could they know something about our country in 11 minutes, I think it was, something like eleven or twelve minutes. And that was the problem. That was the only reason for there being that many screens. We felt that instead of seeing one image which meant one person, by seeing seven, it meant a great many, but they were still "seeable." We tried all sorts of experiments, making it twelve, nine, eight, and found that seven was handleable, but counted as "many." You couldn't go from one to the other in that short time of exposure; you could only sort of "sense" it, but by relating the subject. A great experiment was when one went off and it was chaos, it practically made them ill, you know, because you could handle it, with the relation of music and relationship of image and, if one was off in any way, they couldn't take it.

RUTH BOWMAN: So synchronizing was terribly important.

RAY KAISER EAMES: Terribly important, and the relating of the subject matter was very important.

RUTH BOWMAN: When you planned the Franklin and Jefferson exhibition, someone here told me 40,000 words were set in type.

RAY KAISER EAMES: I don't remember that. Oh, there had to be many more than that.

RUTH BOWMAN: Just for the labels?

RAY KAISER EAMES: No, I think it was probably more than that.

RUTH BOWMAN: Oh, that was the number that I wrote down at the lecture, anyway. This was a lecture that was given at the Metropolitan Museum when the exhibit was in New York.

RAY KAISER EAMES: Really?

RUTH BOWMAN: Yes, but we were trying to think about how people learned from an Eames exhibition, and I wonder if you could talk a little bit about it, because it's so complex and diverse.

RAY KAISER EAMES: Yes. "Franklin and Jefferson" was, I guess, the most rigorous in that sense of not wanting to limit it, but knowing that many people would just have to see it quickly, just walk through. What could they get by walking through, and what could they get by staying a long time or coming back many times? This is not . . . it didn't start there. Of course, we'd done many exhibits for IBM, who have been the most wonderful clients, I think, that you could imagine, because they wanted something to happen and didn't care, didn't make it part of it to be selling anything, you know. They felt that the value was in making better people, more educated and interested people. It was a great reward for that, but we've done many exhibits for them and each time I've had a similar problem. We had much background in the exhibitions we had done for IBM over the years. We'd done films, too. We did "Mathematica," which is still here today. Oh, thank heaven, I want it to be here. Each new generation, each year, some new person can have a brush with the idea that I think is so important. We've always thought that it was so important to have children feel a glimpse of the pleasure that is inherent in the subject and which mathematicians enjoy so much. It's usually missed in school training. But anyway, that whole subject of how to deal with it in "Mathematica" was saying that it has to be understandable to a bright teenager and not embarrass the most knowledgeable readers.

RUTH BOWMAN: The thing that we were talking about, too, had to do with the level at which . . . ?

RAY KAISER EAMES: Yes, in "Franklin and Jefferson," that, I suppose was one of the most complicated because it was quite large, but it had the base of the attack of the other ones, meaning that if you could have a short time, what could you get? So we arranged things with either big headings in large type for the single idea, the next smaller was amplification, and smaller than that was bits. You have tapes of other people about that? Oh, I would so love to refresh . . . you know, you have Swindon, but Diller was someone that was loved by everyone. Did you ever know him?

RUTH BOWMAN: Yes, the Archives has a tape that we did of him.

RAY KAISER EAMES: Because I don't know how it was after I left [New York]. I lost track of everyone, but he was someone that everyone loved, much as, I think, later -- I can't think of his name, I can see him. He did the big black and white paintings.

RUTH BOWMAN: Franz Kline?

RAY KAISER EAMES: Franz Kline, whom I never met. But I've heard from everyone that he was a real catalyst. People loved him; they could speak to him. You'd get friends that had fallen out and they would speak to him, each one, and he would be able to make them friends again.

RUTH BOWMAN: Were you involved with that opening exhibition that Gertrude Green and Alice Mason and all those . . . ?

RAY KAISER EAMES: Lassaw . . . ?

RUTH BOWMAN: . . . and Ibram Lassaw, that first one in the Squibb Building?

RAY KAISER EAMES: I thought that the first one was at that great place way uptown.

RUTH BOWMAN: The Riverside Museum? [Masters' Institute?]

RAY KAISER EAMES: Yes, I thought so.

RUTH BOWMAN: That was early on.

RAY KAISER EAMES: But I was in from the early beginning. I remember Lassaw and the thing that was liable to break and all that. Of course, Charles was involved also, and I think Lee Krasner was, and . . . .

RUTH BOWMAN: Bolotowsky?

RAY KAISER EAMES: I saw him not long ago, with a great white mustache. Have you seen him? So sweet, Bolotowsky. And that was a time when -- his wife -- I didn't know her, but it was just about that time that they were angry at each other and she took a knife to all his paintings.

RUTH BOWMAN: Slobodkina, Esphyr Slobodkina.

RAY KAISER EAMES: Byron Browne, of course, and . . . .

RUTH BOWMAN: Rosalind Bengelsdorf.

RAY KAISER EAMES: Oh, my God, yes, Rosalind Bengelsdorf. That was that girl that put those plastic pieces together.

RUTH BOWMAN: I. Rice Pererra?

RAY KAISER EAMES: Yes, Pererra, and Suzie Fruelinghausen, and Morris, George L. K. Morris. I think he's not living. Is she?

RUTH BOWMAN: I don't know. She became a singer.

RAY KAISER EAMES: Is that so?

RUTH BOWMAN: Yes, Rosalind Browne just died.

RAY KAISER EAMES: Really?

RUTH BOWMAN: Yes.

RAY KAISER EAMES: Byron is okay?

RUTH BOWMAN: No, he's gone. Most of them are gone.

RAY KAISER EAMES: That's incredible. They were not that . . . .

RUTH BOWMAN: Ad Reinhardt was the youngest in the group of the men.

RAY KAISER EAMES: Was he?

RUTH BOWMAN: Were you in the picket at the Modern?

RAY KAISER EAMES: No.

RUTH BOWMAN: You didn't picket?

RAY KAISER EAMES: That was after my time. I had left by that time.

RUTH BOWMAN: Did you know Gorky?

RAY KAISER EAMES: Yes, of course. Gorky and . . . Sidney Janis, Sidney and Harriet Janis. And the little architect, tiny little architect . . . ?

RUTH BOWMAN: Kiesler.

RAY KAISER EAMES: He and Carles and myself would meet very often. It was marvelous . . . and Gorky. Did I tell you I went out with him to the airport?

RUTH BOWMAN: You went to the Newark airport with Gorky?

RAY KAISER EAMES: Yes.

RUTH BOWMAN: And what happened?

RAY KAISER EAMES: It was cold, cold, cold and we were looking at the murals. That's why I kept saying I remember the dotted line one more than anything, but I couldn't find it, and finally it was in the catalog. Isn't that terrific?

RUTH BOWMAN: So Gorky and you had a lot of conversations, obviously, if you went out to the airport. He didn't even take his wife out there.

RAY KAISER EAMES: Really?

RUTH BOWMAN: Later, when he married.

RAY KAISER EAMES: This was before he was married.

RUTH BOWMAN: Did you ever see his studio on Union Square?

RAY KAISER EAMES: Very briefly. And of course I knew Harry Holzman. Did you know him?

RUTH BOWMAN: I saw him on the street the other day.

RAY KAISER EAMES: He was out here recently. I haven't seen him in a million years.

RUTH BOWMAN: Did you know Mondrian?

RAY KAISER EAMES: Briefly, just briefly when he was in New York. I didn't know him, I never went out with him because I was away. I just happened to be there and right after I left he died. Terrific person, though. Did you?

RUTH BOWMAN: No. Did you know Leger? He was there, too.

RAY KAISER EAMES: Yes.

RUTH BOWMAN: So did they come to Hofmann's school when you were there?

RAY KAISER EAMES: No.

RUTH BOWMAN: None of these people?

RAY KAISER EAMES: No, Mondrian didn't, not when I was there. It went on afterwards, you see, for a long time. I left in 1938 and then came back in 1940 briefly.

RUTH BOWMAN: How did your mother feel about your being an artist?

RAY KAISER EAMES: I guess that was one great bond that Charles and I had. I never thought of myself as an "artist" and couldn't bear the word, I think, as a painter. He hated the use of the word "artist," because he felt that "artist" was a degree of whatever it was. You know, to talk about a musician, or an artist, seemed ludicrous to him. Isn't it true? When you think of it? I was always interested in drawing, always interested in color, and my mother was . . . you know, it was no change, it was a continuation.

RUTH BOWMAN: Was your family involved in drawing or photographing?

RAY KAISER EAMES: No, not in a professional way. My parents, I think, were absolutely extraordinary, the more I realize it; I never knew it at the time. But the sense of quality, the sense of enjoyment, everything which I recognized in Charles, was there in my parents without their doing anything about it. It was just there. The quality of enjoyment, of games and toys and all the things that . . . you know, for the same reason.

RUTH BOWMAN: In observation, commenting . . . was there something in your environment, the way your days happened, or the way your holidays happened?

RAY KAISER EAMES: I think so. I think in every case. My father loved being in nature, and we would go out in the country when we were very small. Sunday meant going . . . he just liked the idea of spending the time in nature. Even Sunday school was not as valuable as being in nature, and we would just be out in the country. Almost every Sunday possible -- it was marvelous -- picnics and all that. On one hand you could call it just "average," the way most families were, but there was an extraordinary quality of enjoyment . . . . I mean, today most people study the whole Zen philosophy. I hate it when it's worked over and solidified somehow, but I think it has the same basis, I believe, as the way I was brought up.

RUTH BOWMAN: This integration of life and nature and observation.

RAY KAISER EAMES: . . . a place in it, you know, not self-examination always in relationship to it.

RUTH BOWMAN: When the American Association of Museums met here and Charles showed those films at U.S.C., he talked about a placement of objects and organization of the visual world for children. He even made a reference to Muriel Silberstein's art classes . . . .

RAY KAISER EAMES: Yes, the place of ceremony. Did you see the Metropolitan movie?

RUTH BOWMAN: You mean the "Overview?" No, I haven't.

RAY KAISER EAMES: Oh, that's terrible; you must see that, because it involves that, the idea of ceremony.

RUTH BOWMAN: Let's talk a little bit about that, because it seems that it has to do with the way one conducts one's work again, I guess -- you know, the organization on this table, for instance.

RAY KAISER EAMES: I think those are all by-products. And now it's become sentiment because I don't want to . . . at the moment there's no reason to change it, for me. The same way as at the house, until I have to just do something desperate about it, I'd just as soon leave it that way. You know, the same way here. I remember we enjoyed finding those things, unexpectedly, and the reflection in all those things meant something -- the quality of the light plane is interesting.

RUTH BOWMAN: We have been going a bit around the lot, but among the things we've talked about is your girlhood, a little bit. The fact that you went to New York and studied with Hans Hofmann, both in New York and in . . . ?

RAY KAISER EAMES: In Gloucester.

RUTH BOWMAN: Did you go to Provincetown?

RAY KAISER EAMES: Right.

RUTH BOWMAN: You did go to Provincetown. And you studied with him until you went to Cranbook.

RAY KAISER EAMES: No, I had to leave to go to Florida to be with my mother.

RUTH BOWMAN: Right. You had to go to Florida and you took some time off. You went in the middle of the winter and came back the following fall, I think. And then, eventually, in 1940, you went to Cranbook and you came back to New York to work with Charles on the exhibition of chairs . . . ?

RAY KAISER EAMES: No, I did not. I came back to New York briefly that spring, the spring of '41, before being married, but the exhibition was before that, I believe. I think it was when I was away. The only time I worked on it was at Cranbook. The work was done there on the drawings, mainly the drawings.

RUTH BOWMAN: Then you and Charles moved to California.

RAY KAISER EAMES: We moved to California in 1941.

RUTH BOWMAN: Lived in Westwood . . . ?

RAY KAISER EAMES: In The Neutra apartments. It was lucky. When we met we said we had no place to stay. We had been in Hollywood, at the Highland Inn, and that's when Charles went to work at MGM as art director. It turned out that Dione's parents owned half of the apartments on Strathmore. And it was so marvelous, because we just didn't know where we wanted to be, and that was terribly fortunate, I think, for us that there was a vacancy. It had always been difficult. So, after having been here for a few weeks, we were able to move into the Neutra apartments, the Strathmore Apartments, and we stayed there for eight years. Really heavenly.

RUTH BOWMAN: And that's when you built your house?

RAY KAISER EAMES: Then we went right from there to the house, in - - I think it was Christmas '48, I'm not absolutely sure -- Christmas '48 or Christmas '49.

RUTH BOWMAN: I'm sure there's some architectural magazine that can confirm it.

RAY KAISER EAMES: And that's the only place we've been. We stayed there.

RUTH BOWMAN: We talked last time a little bit about work that you have done here and the way in which the various kinds of work developed. First the photography and then the filmmaking, the whole thing about communications.

RAY KAISER EAMES: That was, of course, before we were here. Yes, the Dunnes, Philip and Amanda Dunne, were friends that went to South America to do a film ["The Gaucho"]. So they had this equipment, a projector and editing equipment for 16mm. And we stored it. That's when we said we had nothing to show, so we made the film. That was all a joke . . . but Charles had always been interested in it, I think I said that before, even at Cranbook, and at Cranbook he and his friends were interested in photography. There was no course and no equipment available, so they set up a secret darkroom in the closet of one of the studios and made prints just for themselves, and put up an exhibition which showed the Cranbook people that it was possible and that it was needed. So after that they had access to the equipment that was available. They made beautiful pictures -- I think Ralph Rapson and Dan Baldwin and Harry Weese and -- Jack Spaethe, I think, all the architects were the ones who were especially interested in the use of photography as a record of their experience. And then also Charles did some -- I know he made a film, I'm absolutely sure of it. I don't remember seeing it, of around Cranbook, a sort of document.

RUTH BOWMAN: You said you were going to get in touch with Cranbook and see if they have it.

RAY KAISER EAMES: I must, I must. I was there recently, and that's when I found that wonderful photograph of Charles. So, filmmaking -- he was always interested in documenting things, and using photographs rather than pages of explanations. He had a very strong belief of being able to see something rather than having to describe it, so we've always used photographs for that. I think it was one of the first uses of photography as a model, shooting a model of the idea for the Organic show -- that was the furniture exhibition that we were talking about earlier, at the Museum of Modern Art. The "Organic Competition," where he and Eero won two first prizes, one each in two categories, and that was the first molded plywood, which was then supposed to be put into production. That's when we found that it needed a great deal of work. We had to do it just one by one; they couldn't develop a system, and that was interrupted by the War. Materials were not available, and that's when we started to work on the splint as a way of contributing to the War effort. And doing the production of that we were able to develop techniques that could then be applied to the furniture, which after the War we brought to a point which was then shown at the Museum of Modern Art.

RAY KAISER EAMES: The "Good Design" exhibition.

RAY KAISER EAMES: No, that was long before the "Good Design." It was the first supposedly one-man show of furniture, which was at the museum in '46, January, I think it was. "Good Design" came in '50, I think, 1950. The first one was in Chicago. It was the first coordinated effort between the Museum of Modern Art in New York and the Merchandise Mart in Chicago, which was unheard of, you know. These were usually most separate institutions.

RUTH BOWMAN: When did Herman Miller come into this?

RAY KAISER EAMES: Herman Miller came in, having seen his show. It's been documented many other ways, I know. Ralph Caplan's written about it. George Nelson brought the de Prees, who were the head of the Herman Miller company, to the show in New York. He had recently been appointed director of design. And he said that they should be doing something, you know, making this furniture. And they thought that was a good idea. Other people had been talking -- Hans and Shu Knoll talked about it. But Charles was, I think, drawn to the de Prees because he thought they were very straightforward, honest business people, as opposed to the Knoll idea of "image" and "international design." Naturally, Shu was a very good friend. She was practically an adopted daughter of the Saarinens, of Eliel and Loya Saarinen. She [Florence Schust] was an orphan, and they took care of her there, so she sort of grew up at Cranbook too, which has made a bond over the years.

RUTH BOWMAN: Both philosophical, and almost like family.

RAY KAISER EAMES: Oh, yes. I think they had always wanted Eero to marry her, because they felt very close to her. She was a darling, a neat person.

RUTH BOWMAN: And this relationship has continued over forty years with Herman Miller?

RAY KAISER EAMES: Yes, absolutely.

RUTH BOWMAN: And the production laboratory has always been here?

RAY KAISER EAMES: "Production laboratory" -- that's a different way of saying . . . . I don't think of it that way.

RUTH BOWMAN: How do you think of it?

RAY KAISER EAMES: Studio, office -- we call it "shop," the place where we work has been here, and the early production was here. Part of this building . . . it was unbelievable when you think back about it, having the actual production here, as it was during the War, actually making the splints and making the furniture, making all the experiments. Then it becoming Herman Miller and having half of the building be production and the rest of it our own, making films, walking over cables. The people who produced the things, you know, were all local people, many of whom had worked . . . most of them, as a matter of fact, who had worked on the splints during the War. They were made up of housewives and all mixtures of people, various carpenters and really, just sweet people that we'd known for many years.

RUTH BOWMAN: And you call this place "the shop."

RAY KAISER EAMES: We used to call it that -- "design office," "studio," "shop."

RUTH BOWMAN: "901."

RAY KAISER EAMES: "901," right.

RUTH BOWMAN: In the period of the Fifties, what was the major activity that went on here after the furniture really got rolling?

RAY KAISER EAMES: Well, it was always experiments in furniture, furniture continuing to develop, and . . . I can't remember, I have to think about the Fifties. There was an exhibition, the first "Good Design" show during the Fifties. During the Fifties I think the major thing was the "Sample Lesson." The Sample Lesson ("A Rough Sketch of a Sample Lesson for a Hypothetical Course") was '52-53, and out of that came the development and communications films. "Communications Primer" was one of the first ones. Then I think it was through that that IBM became interested. Naturally, John Neuhart and Marilyn know a great deal about this. People thought the Sample Lesson was a film, but it was just pieces patched together. After that, we then made it into a film which exists. And the toys were in the Fifties, too.

RUTH BOWMAN: When did you meet Alexander Girard?

RAY KAISER EAMES: We met him . . . it was in about the mid-Forties; he was in Detroit -- no, Grosse Pointe, outside Detroit. He was an architect/designer. He was in New York, and then he and Susan moved to Grosse Pointe and he had a small shop there of good design. I mean, that was before it was called "Good Design" -- just good things, and he did architecture. He did houses for people and he made little toys himself, and he was asked to design this office for this company that made radios -- Motorola, I think. And because of the work that we were doing, people said, you should see these people. You know, they thought there might be some use for our plywood. When Charles walked in, he said, "Wait a moment, somebody knows something here," because the look of the place was very impressive to him, in its neat, quiet, organized way. And so then he met Alexander Girard and they found these bonds immediately, and he went to visit them, and Sandro then showed him the furniture that he had designed. They [the Girards] didn't know that Eero, of course, was from Bloomfield Hills and he had heard of him. And we found that they all had such interwoven lives, had studied and thought about architecture often, each one in a different way, Charles in America -- St. Louis; Girard in Italy, but then having gone to the AA in London; Eero in Finland, who then came here and went to Yale, and they all knew things about the Bauhaus. I can't remember what they called the early . . . before the Bauhaus -- not Deco, it was before Deco . . . Wienerverkstaed.

RUTH BOWMAN: You mean the period of the Art Nouveau?

RAY KAISER EAMES: That's right. They had all been influenced by Art Nouveau, but had not known each other all that time -- they'd traveled and sketched and made toys and knew games and they read books -- all these similar things at the same time, in different places. So we brought Eero out there -- and all of us became good friends.

RUTH BOWMAN: And did joint projects.

RAY KAISER EAMES: Yes.

RUTH BOWMAN: Tell me a little bit about the games. Is that in connection with education, or just fun?

RAY KAISER EAMES: Both. I mean, Charles never made any distinction between fun and education and play. Never any distinction. He was always interested in -- I've been interested in my way also . . . the toy became the first thing. We talked about hiding under the table as children and having a world to play in. The cloth over the table became such a world -- we all knew that. And the idea of structure -- what holds up -- anything that holds up has to do with structure. We developed this, and someone -- I don't remember how we met these toy people. Yes, I do. It was a terrific catalyst. John Michael grew up in Chicago and knew a great many people, and his family was involved in transportation, and he was not interested particularly, but he was involved. Somehow or other we got to know each other. Then he said, "Oh, I know a man who is interested in manufacturing things and you should get together." And that's how we developed "The Toy." The first structure was very much like the house development: to make a structure -- create a large form with large volume, with a series of materials that could be then contained in a small box. That was "The Toy." And after that, the idea of the cards became another way. Charles had always played with cards. Everyone had built a house of cards by balancing . . . and the idea of slotting them made another way of building a structure that could stand. And the fact that there were x number of . . . you know, the idea of using something that exists, the cards have been printed forever and they have that number of cards. So to use that known base to do something else was interesting. Again, we just put together papers and collections of things that were just around anyway, just to make as varied a collection of surfaces as we could. Oh, I'm afraid it just doesn't tell the pleasure of it!

RUTH BOWMAN: Well, the pleasure of it is certainly something that, if you tell the story as you are, it comes through, Ray, it really does. The idea of the sequence of the way these things developed is important. You've worked as a consultant, or as part of the committees that have worked on education programs, haven't you, in Washington?

RAY KAISER EAMES: Yes, I have. Charles gave a tremendous amount of time to the National Endowment, because he thought that that was a worthy organization and should be developed. He wanted to add to its development, add to its scope by having the money that was available do more, by developing an idea which could then be turned over to someone else, rather than just handing it out to fixed organizations. He always said, "You know, the symphony and the ballet are such good museums" -- had such good structure, anyway. Now there are several other educational groups, but there was one called -- was it "Art in Education?"

RUTH BOWMAN: The National Committee for Art in Education.

RAY KAISER EAMES: Anyway, I was involved in that for two years, I guess. And out of it came a book.

RUTH BOWMAN: This is the group that started at the Museum of Modern Art, or was this another group?

RAY KAISER EAMES: No, this was another . . . much more recent, quite recently.

RUTH BOWMAN: In Washington? Oh, you mean "Coming to our Senses." David Rockefeller's group.

RAY KAISER EAMES: "Coming to Our Senses." We looked into not just art, because that seemed narrow, but education itself. We felt that there should be ingredients in our education that will enrich it, and that had to do with the quality of the teaching and the teachers themselves. It's hard to know how . . . there are so many people involved in it. Did you read that?

RUTH BOWMAN: Yes, I did.

RAY KAISER EAMES: Anyway, that continues in some form or other. I'm still advising about that. I've also been involved in Doreen Nelson's project, which we both felt strongly about as a very good base for education.

RUTH BOWMAN: "Architecture in the Public Schools?"

RAY KAISER EAMES: Yes, it has to do with architecture. It was originally called -- we referred to it as "Kid City," and she calls it "City Building" or something like that. Do you know that?

RUTH BOWMAN: She took architecture and planning into the public schools here in Los Angeles.

RAY KAISER EAMES: That's right. But it's a base for children to hang everything they know on. It seemed like . . .

RUTH BOWMAN: . . . building the whole curriculum, really, including math and science?

RAY KAISER EAMES: Everything -- writing and communicating to each other, because it was necessary. On that project it seems that more was called upon, so that children had something to . . . that made it necessary to use everything, and not just as an idea, but a necessity. And if they had to make a list, it had to be legible to someone else. If they had to describe something, as part of the project, they had to write it so it could be understood. They had to keep track of what they had done toward the project and they had to relate to each other, because they all had a part in the project. So they immediately became little adults in that sense. I don't really like to say that -- I don't really like to say "little adults," but they became people, not little brats.

RUTH BOWMAN: And this was in elementary school?

RAY KAISER EAMES: Yes, elementary school.

RUTH BOWMAN: And you visited the project?

RAY KAISER EAMES: When we visited there was one right nearby. It had been the same school where we had shot the washing of the schoolyard, very dear to us, and saw it operating. We were absolutely delighted with the results, the way it was going. We helped them make a film about it, and the boys helped especially, and naturally Charles took pictures and we worked on that and got people to work on it. Also, John Borsten and one of the boys here -- Eric -- no, I don't think he was involved in that -- Eric Saarinen, Eero's son, also became interested in photography and came out here and we saw him. He's done very well, I believe.

RUTH BOWMAN: I remember when his mother gave him his first camera. So he worked here. That's interesting. In this whole education approach of the studio/workshop here, everything seems to be constructed to reaching large numbers of people. In 1960 you were given the Edgar Kaufman Award, you and Charles.

RAY KAISER EAMES: You know what, I put this on because I was reminded. I wore that for the receiving of the award. That goes back -- when was it, 1960?

RUTH BOWMAN: I think it was 1960. That was a singular honor.

RAY KAISER EAMES: It was the first one.

RUTH BOWMAN: It's a velvet ribbon with an orange and a fuchsia tip on it.

RAY KAISER EAMES: Yes, it was supposed to have color on the tips. It wasn't for that. I remember it being chosen at the time, so when I look at it again on various occasions, it recalls that to me.

RUTH BOWMAN: What did you do with the prize money?

RAY KAISER EAMES: Oh, it was put into work immediately -- not anything especially, just put into development of the work. It wasn't held as one thing. It's always been that way. Whatever has been earned has been plowed back into the work, development of film, for instance, or something we wanted to do that couldn't be done, could only be done as a private project. And there've been films -- "Communications Primer" was done that way.

RUTH BOWMAN: It wasn't commissioned?

RAY KAISER EAMES: What was commissioned was a report, and George Nelson was involved and we were involved and we called on Girard to help, and the money that was given for the report was put into the film plus much, much, much more. We just felt that was necessary to do.

RUTH BOWMAN: I would have taken the prize money and had a holiday.

RAY KAISER EAMES: It's a part of everything that was done. If that was 1960 . . . I wish I could say it was for X, but it isn't. Before that, let's see, we made these films.

RUTH BOWMAN: I have a list of a lot of your films.

RAY KAISER EAMES: The "Solar Machine." "Information Machine" was made for IBM, but none of these things Charles would . . . . You see, we would get money from the furniture and it was always put back into developing. Nothing was ever just put away for safekeeping; it was put into developing other things. For example, when we made "Day of the Dead" -- and that was marvelous. You know that "Day of the Dead?" We had it narrated . . . this was done supposedly for the Folk Art Museum in Santa Fe, New Mexico.

RUTH BOWMAN: Yvonne Lange?

RAY KAISER EAMES: No, it was long before her time. She was not there then. It was because of people that Girard knew, and he was so interested and we were so interested in the objects, and thought it would be great to try to make a film about these because, you know, they change rapidly. Again, the same old idea of holding something while it was there, like the museum film. It was not paid for, either, you know -- the Museum of Modern Art -- it was just our own doing, trying to persuade them of the idea that those things should be done. That was the one on India. And Edgar, Edgar did some narration on that. We persuaded him; he felt he couldn't do it, but I think he did such a great job that when we did the "Day of the Dead." We had it narrated and it just sounded so opposite to what we thought it should be. He was visiting, and just before he left we sat down and said, "Please do," and he did it, which is in the film and I think it's so good. He just read it -- we had written it -- I love the way he narrated it.

RUTH BOWMAN: It says, "Almost every film won an award."

RAY KAISER EAMES: It says that?

RUTH BOWMAN: Oh, it says that the Museum of Modern Art says, "Every year, it seems, there were awards of some kind. In 1958, the 'Information Machine' won an award in Edinborough."

RAY KAISER EAMES: There've been long lists of awards, certainly.

RUTH BOWMAN: And "Toccata for Toy Trains" won an award. All sorts of industrial design awards.

RAY KAISER EAMES: Many, many on the "Powers of Ten," of course.

RUTH BOWMAN: Both versions?

RAY KAISER EAMES: I think so.

RUTH BOWMAN: You had at least two very long relationships with universities, one at MIT and another at U.C.L.A. Are there others that . . . ?

RAY KAISER EAMES: I don't know about long -- Harvard, MIT, and Berkeley -- Berkeley was long before U.C.L.A.

We went when Bill Wurster came out from MIT to head the architecture department. He asked us to redo the . . . first, he asked us to take over the graduate school, and Charles said, no, that was way too late. Architects are already formed, and he thought it was more interesting to deal with the fresh, untainted students. Bill said, fine, and we went and took over the first course. It was called "Design 1," which was a beginning class for architects. Instead of going up -- we couldn't go up for the year, we went up intermittently once a month to work there for three days. That was most difficult, because we were continuing here, and it seemed like we just came back and it was time to go up again. It was interesting, and I think there are some remnants of it, but it's been over the years -- it's changed quite a bit, I think.

RUTH BOWMAN: Why Professor of Poetry?

RAY KAISER EAMES: Oh, it was "Chair of Poetry." That was at Harvard, the Charles Elliot Norton Lectures, and you'd have to ask them. It was called the "Chair of Poetry," and was given to writers, musicians, and painters, I think -- I don't remember. I've got . . . it's a long list of people.

RUTH BOWMAN: But Renaissance man, maybe. In these various honors and in your travels around the world, did you have any particular area that you, yourself alone, were working on? In other words, was there some particular interest of yours that you would always check on in, say, Moscow, Tokyo, and the various places?

RAY KAISER EAMES: No, I don't think so.

RUTH BOWMAN You had never taken on any special investigations of your own of things that you wanted to know about in particular, areas of research that you were interested in?

RAY KAISER EAMES: I can't think of any . . . I can't think what that means. Each one was a special thing. Moscow, we had to make the film, we were there and we had to see that it worked. While we were there there was a tremendous problem of the exhibition hall not being ready because of the mistake in the formula of the concrete -- it turned it to dust before the exhibition was opened and it had to be redone, and the whole exhibition part of the exchange program had to be done in very little time, so we all . . . anyone there who could help at all plunged in and we had to just, you know, help make it ready.

RUTH BOWMAN: After seeing you rush out in New York to buy special carpeting for "Franklin and Jefferson," I think I do have an idea of what you did that was special.

RAY KAISER EAMES: That's just depending . . . what has to be done. I've always done what has to be done. I can't think of anything. For the Berkeley project we had to put slides together, we had to find music that would work with it -- we had to find words, we had to make programs, we had to devise projects. You know, we'd say, wouldn't this be good if it was, and once you've decided it was a good idea, it had to be implemented.

RUTH BOWMAN: You were always intrinsic on the team, and that took all of your energy.

RAY KAISER EAMES: Completely. In India, for the "Nehru," you know -- we were asked to do the Nehru exhibit for the Indian government a year after he died. So we thought it would be a good idea to have it done there and use the institute which Nehru had founded -- I don't know if you know about that. Everything hangs on something else. The National Institute of Design was the result of a report that we made, having spent time there. The main question was, how to keep the country, in terms of design, from disintegrating; that was a worry that Nehru himself had, and Indira was also interested in, because they could see things dissolving and disintegrating from the pure way that it had developed over the centuries. You know, with the confrontation with the Western world, those qualities could so easily be lost. So we made a report and suggested an institute that would be called upon to help the government on the particular problems so that they would be studying in order to produce best what was needed. They would think what was needed and the government would see what was needed and call upon them and they would be able to respond. In that way they would be having terribly good instruction, and putting the instruction to use, knowing that the aim would be to make something that would reach the people in the simplest way and in the way that would make it feasible for the government. One of the best examples, we said, was that the light situation is bad in India. Natural light is beautiful, but it's unknown and hadn't been thought of. So it was just thought of, not as something to export, but what its . . . what is needed in its simplest form, if that were studied at the Institute and developed so that -- to the degree that it was solved, it would be interesting to anybody. But to think of it as their own problem rather than what another country could use, was used as a base. Anyway, the National Institute of Design was developed. We used that as a base and started to make the exhibition, and because work was going on here, it had to be divided and I went off. We had made preliminary plans, knowing that the exhibition would be first in New York, at Union Carbide. We had the dimensions we were going to work on. Then we got there and found that the space had been changed, so we had to do it all over again there. Charles, here -- I, there. And it all had to be re-thought and worked out. You couldn't delay, because there was just so much time for the work to be done in. But I can't say that that was done by myself. My interest has always been "whatever has to be done," and whatever is done -- we would naturally not take something that was not interesting.

RUTH BOWMAN: It's always been that way, hasn't it?

RAY KAISER EAMES: It's always been that way. We've never taken any job that we didn't think was worth doing, so our interest had to be in it in some form.

RUTH BOWMAN: So that whenever you had a project, you also simultaneously worked on it and put something aside for other things that you wanted to do independently?

RAY KAISER EAMES: No.

RUTH BOWMAN: Or it just sort of fed into your research.

RAY KAISER EAMES: Certainly so. But we never put anything aside to do anything.

RUTH BOWMAN: It just was integrated always. But it was simultaneous, frequently.

RAY KAISER EAMES: Certainly, depending on its . . . for instance, the toy train movie was our own and we couldn't involve . . . we knew it was very costly, we just didn't involve anyone; we worked on it at the house. We realized if we brought it to the office everyone would be interested and want to help and the cost would go up, so we kept it there, or worked on it weekends and nighttime, little by little by little. It took a long, long time to do. But that was the only way it was possible.

RUTH BOWMAN: What about the music? How did you and Charles work on the music? How did that get into your lives?

RAY KAISER EAMES: That was wonderful, because we needed . . . when we first started we used recorded music, just because it was an interesting project. When we realized we had to have a score, we called on . . . later it turned out to be Elmer Bernstein, because we'd called on Franz Waxman -- Billy Wilder suggested him -- he had been a friend for a long time, a dear, dear friend whom Charles and I admired so much.

RUTH BOWMAN: There's a photograph of Charles and Billy Wilder in one of the books.

RAY KAISER EAMES: Is there? Anyway, Franz Waxman was a musician and composer who worked in the movies. We called and he was tied up and suggested a young man who worked with him and who he thought was most interesting, and it turned out to be Elmer Bernstein. So we called on him, and that has been a great relationship ever since. Elmer is quite extraordinary. In the early days when he was starting, he became one of the three composers who were allowed to conduct their work for the movies, and that's because it's so costly. The movie budgets could not support the methods of the normal composer, because he was always interested in having the very "best," and usually could not be aware of the time, could not keep track of the time, only concentrating on the way he thought it should sound, and that's not possible for a budget. Elmer was able to keep track of both. He has many skills, among which are mathematics, and he understands the problem of time versus product. He works with that completely.

RUTH BOWMAN: You must understand time and product, too, because you've had hundreds of people in this studio, and you've had a management going simultaneously with . . . .

RAY KAISER EAMES: Again, it's not my . . . Charles had a miraculous . . . he was extraordinary in all aspects of his life. I've never known anyone who could approach his ability to deal on all levels equally well.

RUTH BOWMAN: But the time management factor here must have been extraordinarily complicated.

RAY KAISER EAMES: It all comes under the effort for the end product. But with Elmer we were able to work in that same way. And he always joked about the way we would make these charts; we developed the charts for the music to make it come out, you know. People would ask which comes first. Well, sometimes one, sometimes the other, whatever -- it was always being familiar with the material and the form and the end result.

RUTH BOWMAN: That would mean that you and Charles would be musical and that Elmer would be visual in order to do that.

RAY KAISER EAMES: You have to be that way. And he understood when we've always said we didn't want what's called "Mickey Mouse' music, meaning, fitting to each movement. The music had to stand on its own, have its own structure. And so we would break down the structure of the film in whatever way we could and have these funny diagrams, and Charles would add what we called "excitement curves," and this would be calm and it would develop and it would be higher, then it would decrease, and either end strong or end quietly. So we'd have these lines on the charts, which Elmer understood perfectly.

RUTH BOWMAN: What was the largest number of people that you ever had working here, approximately?

RAY KAISER EAMES: I suppose -- not counting the part where Herman Miller was developing or the production of the splints in wartime . . . . I just don't know the figures. I sort of think the most complicated was the time of the film for Seattle and for the New York World's Fair -- '64-'65.

RUTH BOWMAN: Right. Seattle was 1962. So that was a pretty close schedule.

RAY KAISER EAMES: Seattle had just opened when it was -- no, it had not opened when the World's Fair problem came up. They were overlapping. But in Seattle we did a complicated animation section in the film project -- multi-screen animation -- which took large numbers to work on, you know, just technically. Just in production, it took many people. So it was the combination of that particular thing plus the number of people. And for the World's Fair there was the big film and all the graphics for the whole pavilion, the architectural work on the pavilion. There were individual puppet shows. There was the architecture exhibit which we worked on with Kevin [Roche] and John Dinkeloo. The many facets of that probably took the largest number of people working here.

RUTH BOWMAN: Oh, I remember "Think" and the puppet show. No one ever told you what to supply for these events, did they? It was always your idea of what was appropriate for that particular time.

RAY KAISER EAMES: For Seattle, the problem was given. It was the introduction. There were six different science pavilions. They wanted an introduction to that. That was the problem, and it was clear enough. To feel that somebody was coming in and to give -- it was really to give a background to the individual exhibits.

RUTH BOWMAN: Well, Seattle has continued in a way . . . what you started in Seattle, that's still there.

RAY KAISER EAMES: Oh, yes, it's called the Eames Theatre. And they've since put in equipment for the Imax, I guess it's called -- the wide projection.

RUTH BOWMAN: If I were to say, Ray, that the Eames studio has changed the way Americans see and the way we think about education, do you know what I mean by that?

RAY KAISER EAMES: I don't know. I have to think that it's Charles; I can only think it's Charles.

RUTH BOWMAN: Well, it seems to me that the team aspect of it is important, too.

RAY KAISER EAMES: A great deal, I think, is done that way. I think Charles himself would have done something. I think much more was made possible because I've been absolutely devoted to -- there's not been -- I have not argued with anything, any thought. I've approved of everything that has been done. It's easy to say. I only feel that in the last, in the doing of the second "Powers of Ten," I felt the effort was far greater than the -- well, I was going to say the value -- I don't think that's true, but I would have liked someone else to have done that -- put in the tremendous effort that it took -- for the difference . . .

RUTH BOWMAN: . . . to redo it?

RAY KAISER EAMES: . . . to redo it. I think it was more than it should have been for Charles, that's what I feel. Just because nobody else would do it, he did it, and it was a tremendous effort.

RUTH BOWMAN: And both films had to be redone.

RAY KAISER EAMES: Well, I would like it to be redone. I don't mean redone. I would like to have a record of the difference between -- from the first time, ten years ago -- to the second. But I would have been more pleased to have someone else take that job. Because I think it was terribly draining. The effort that that took could have gone into something else. We've always talked about doing the toy trains. All these years we had been wanting to do the comparable thing, which was the boat movie. Elmer's talked about it . . .

RUTH BOWMAN: When I first came here there were all these boats . . . .

RAY KAISER EAMES: . . . any time we saw anything, any little scrap of anything -- oh, wouldn't that be marvelous for the boat movie. We must have that for the boat movie -- we must be sure to use it. One of the things we've talked about was the opening shell -- we tried to find them recently -- you know, one of those Japanese shells with the paper flowers in it -- we've always talked about that. It was touched upon in the early movie and we wanted it for part of the boat movie. And that whole thing, to me, the effort that the second thing took, made it impossible to do the boat movie.

RUTH BOWMAN: Do you have a lot of research put aside for that?

RAY KAISER EAMES: Well, objects. I don't know what research is, but we just have many, many objects that should be in it. I've said it and it bothered me so when I saw it in print, but I'll say it again, I can't see it happening. It takes more than one person. Today, it would take some crackpot who would want just to be able

to do something.

RUTH BOWMAN: Someone who knows a great deal about quality.

RAY KAISER EAMES: It doesn't turn out to be that at all -- it has to be somebody who just can't stand not having it done. I need to know technical things that I don't know. Charles knew about shooting, which I don't know about at all, but it was just second nature to him. You know, the physical shooting was just an extension of himself, and you can't do that by the clock.

RUTH BOWMAN: So that's what you mean by "crackpot."

RAY KAISER EAMES: Crackpot -- someone who just feels it's absolutely necessary -- who has the ability and feels it's necessary to do. But there just isn't anyone. Maybe in many years there will be someone else who will come along and want to do it. But there are very few people who . . . .

RUTH BOWMAN: But you have projects that you are working on now.

RAY KAISER EAMES: Oh, yes. Projects.

RUTH BOWMAN: And you're comfortable with that?

RAY KAISER EAMES: I don't know what that means.

RUTH BOWMAN: I mean you're doing them.

RAY KAISER EAMES: I'm not comfortable at all, not at all, not at all.

RUTH BOWMAN: Well, that seems logical.

RAY KAISER EAMES: I wish I knew what would mean something to later people.

RUTH BOWMAN: We're sitting here with volumes of chronologies. As you say, all of this has been published, including the prizes, and the Museum of Modern Art has kept great track of Charles's career, and your name is attached to almost everything. And yet, your role cannot be seen separately is what you said to me. That you were there and you were a part of it and you were always working.

RAY KAISER EAMES: Right. I wish I could. I don't know how to separate anything. My eye falls on every object here. If you went through every object here, what could you say? "Photography in the City," that enormous, wonderful project, and the film that came from it -- did you ever see the exhibit in Washington, D.C.? Oh, it was just so beautiful, and everything about it, you know. Each layout, each idea.

RUTH BOWMAN: And you worked on everything, every detail. You kept track of the photographs. I was here one day when you were keeping track of photographs.

RAY KAISER EAMES: Oh, I doubt, I Doubt it. It had to be other people.

RUTH BOWMAN: When it came to hiring the people who worked here, who really did that? You both did it together?

RAY KAISER EAMES: I suppose so. I think we spoke of it briefly the other day, but I just don't know how that was done. I know how it didn't happen. If someone wanted just to be here, they'd say, "I want to just come and sweep the floor or something," and Charles would always say, "Can you really sweep the floor? Very few people know how." That just separated it, as someone who could contribute as opposed to wanting to be in an atmosphere -- and it's usually a fake atmosphere -- you know, their idea -- "Oh, how wonderful it would be to be here. You all have so much fun." And that would just drive us all up the wall, because it's day-by-day, minute-by-minute and you don't call what happens fun.

RUTH BOWMAN: But for people who had worked as hard as you and Charles had worked, there was an awful lot of smiling around here.

RAY KAISER EAMES: That's true, but you can't say, "Oh, how joyous it all is," because that's not part of it. We did, actually, but the work just had to be done.

RUTH BOWMAN: I liked the part where you said that you took only those things that you really wanted to do.

RAY KAISER EAMES: That's right.

RUTH BOWMAN: And there never were any times where there was nothing to do?

RAY KAISER EAMES: No, I can't find any holes here.

RUTH BOWMAN: And economically it always went smoothly as well, or were there times when it was difficult?

RAY KAISER EAMES: Well, it seems to me it was always difficult. It was always difficult because people at the office would do something over and over, and the costs would run up, and people would say, "Oh, but that's the way Charles wants it," you know, "he wants it to be perfect." He never wanted it to be perfect and ignore costs, just to hope to be within it, but the idea would be translated to "it didn't matter," as long as it was perfect. That was the only thing that mattered. So it's always been a struggle, always.

RUTH BOWMAN: "The Computer Perspective" has probably meant as much to the technical and lay mind as any exhibition.

RAY KAISER EAMES: That's interesting. That was done for the 590 -- they have the great wall. It seemed like a good thing to look at. Old Thomas Watson had always been interested in this collection of instruments. They had some originals there, and he thought that was a wonderful thing, and he always talked about having a museum. So we felt that it was there and should be and one should see the progression and development of this, especially as it was sort of contained neatly in these years. It really came to a point when it was just a technical development.

RUTH BOWMAN: Conceptually it was very old. It even leaked upstairs. There were pieces of it up on the upper floors at IBM. Do you know, Ray, whether it's going to be in the new IBM building in New York?

RAY KAISER EAMES: I don't know; it's intended to be.

RUTH BOWMAN: Did they save all the parts?

RAY KAISER EAMES: Yes, they have everything and it was intended to be, but because of the changes in architecture, I'm expecting it to be, and if it isn't in one time, it certainly will be in another. It's all together.

RUTH BOWMAN: When was the fist time you did a time line, do you remember, with the images?

RAY KAISER EAMES: I'm just . . . naturally the first thing that I think of is "Mathematica." I'm just trying to think of anything before that. That was 1960. I don't know if there was anything before. You know, it's helped us to think that way, but I think probably it was the 1960 "Mathematica."

RUTH BOWMAN: People in the design field talk about the Eames style of exhibition, and some of . . . .

RAY KAISER EAMES: I've absolutely no idea what they mean!

RUTH BOWMAN: This is what I what you to respond about, anyway, particularly in the Oakland Museum, where some of the inventions were developments that came out of here, in the way of installations -- separating ideas from specific details from objects themselves and then reintegrating text panels and so forth.

RAY KAISER EAMES: Naturally, Gordon Ashby did that, and he worked here.

RUTH BOWMAN: Right. Are there any people who have worked here who have gone on that you feel particularly marvelous about? You know, when you see their work you feel that it's in the spirit and the letter of what you and Charles had worked on?

RAY KAISER EAMES: I can't say it that way because I don't know that much about it, but I feel that I'm naturally proud of all the people who have gone on to have their own work. I'd have to look at long lists, but Bob Staples has done that, Deborah Sussman has done that, Gordon has done that, and all the people in between -- I just don't know -- I can't think of them -- Dick and certainly John Neuhart, I think, and Marilyn. You know, from early, early on, John has followed the work. It's amazing that he knows as much and remembers as many things that happened. And Glenn Fleck certainly has done a great deal. And who else . . . ?

RUTH BOWMAN: In the making of film are there any such people too?

RAY KAISER EAMES: Charles Guggenheim. Do you know Charles Guggenheim? He was so nice. He didn't work here; he's been around a great deal and we've always felt he was like a protege. He's done a remarkable job in what he's done. I believe that we contributed to it, because he is a very young man and felt that quality of what Charles would say. Watched and studied movies and checked when he was in the middle of problems. It had been done little by little by little. He did some beautiful things for St. Louis. Did you ever see it?

RUTH BOWMAN: For the art museum?

RAY KAISER EAMES: Well, before that for the city, in documenting problems, the slum area, and different things . . .

RUTH BOWMAN: The downtown development . . . ?

RAY KAISER EAMES: . . . beautiful, beautiful things. It was a long time ago.

RUTH BOWMAN: That led to the film he made on the National Gallery.

RUTH BOWMAN: Yes, he did that, and then he documented the Arch, and again, to me, what counted was his sticking to it and finding a way of really checking the development so it did progress. It was a long, drawn-out thing, but he did it.

RUTH BOWMAN: What I'm hearing is that it's not just the skills that you're talking about, it's an attitude about the work at hand.

RAY KAISER EAMES: I think so, absolutely. And a response to . . . oh, I think there are so many other people -- I think about this boy -- Darrel Comybeare was here and went back to his home in Australia. I'm absolutely sure he's influencing and teaching students -- I'm sure there are teachers who have been touched by this. Oh yes, there's a boy in Africa -- the architect Lars Hansen was here for several years. I know he's touching -- because he's such a nice fellow. Little Deborah, this girl who was here -- you know, she has a point of view now about . . . just about the work itself. I haven't mentioned Jehane Burns, who has been such a close co-worker.

RUTH BOWMAN: She worked very strongly on the "Franklin and Jefferson."

RAY KAISER EAMES: Oh yes, and Janine Oppewall who was here; it changed her work completely but I know it's influenced by and strengthened by it.

RUTH BOWMAN: In solving problems . . . you know, it's so hard to ask questions, and I don't mean to ask for generalizations. It seems to me -- to get back to that maybe ridiculous-sounding point I made before about the Eames "approach" -- it's more than seeing and perceiving. It is problem-solving, or it is getting from one place to the next, that you've always done your work about. It's action-oriented in some ways. That is, you want something to happen to people.

RAY KAISER EAMES: I suppose so. Charles used to talk about replacing vitamins -- but not for themselves. There have been richnesses in the life of the things that he knew and things that I knew. Charles finds them missing, just in circumstances today. For instance, there isn't the sense of responsibility demanded of children as it was in his time and my time. He had known life on a farm, where it was absolutely necessary that certain things be done. You have to find out how to do them and not be drowned in them but handle them. And if it isn't demanded, he feels those qualities have to be restored some way, and I think that's an underlying thing that he had, that he kept searching for.

RUTH BOWMAN: And the kinds of stories that were told, or the kinds of games that were played, or the . . . even just the joy of observation -- were -- it's hard to say -- were oriented to change or demand on the perceiver or the viewer, or to demand participation.

RAY KAISER EAMES: I've lost you.

RUTH BOWMAN: For instance, in "Mathematica" where there are so many random things that someone can do: you walk into that space, then what happens . . . ?

RAY KAISER EAMES: Yes. The whole purpose of that show was, as Charles would say, "Lifting the corner of the tent" to let people know the pleasure and the joy that mathematicians had in their work. So when you see the workings of any of those things -- the soap bubble -- it reflects the terrific joy that was originally felt in the discovery of that model, or in the use of models, the use of thinking, and the result of observation and relationships in observation, and relationships of knowing what someone did and someone didn't do. The chart shows how different people were influenced by different things, things happening because of other things, as a result of other things happening, things in the past happening, things coming together at the right time -- all those layers of happenings.

RAY KAISER EAMES: Did you ever go and just stand and watch people in "Mathematica?"

RUTH BOWMAN: Oh, yes, I have . . . with pleasure. It was great, great to see -- I think one of the nicest things to see was children pulling older people, pointing out things to older people, and the other way was to have older people pointing out things to children. Children pointing to each other, people starting to leave and going back to read something else. I remember being in the Los Angeles one just before a group of young children were being brought in. The teacher stopped and said, "Now children, I don't want you to read anything" -- exactly the

opposite of what was intended.

RUTH BOWMAN: "You must not read the label" is what . . . ?

RAY KAISER EAMES: She obviously wanted to go in and out and not spend time, so she didn't want the children to read -- exactly the opposite. You know, if they can be intrigued to read anything, it seems like a great accomplishment. So she was already setting the limits.

RUTH BOWMAN: One of the things I forgot to ask you, and I think it's important. Whatever happened to all your paintings that you did when you worked with Hofmann?

RAY KAISER EAMES: Most of them are lost. I had some in storage, and I didn't do that much painting all those years. I drew a great deal and I have some. But many of them were lost in storage.

RUTH BOWMAN: Did you ever show any of them?

RAY KAISER EAMES: No, there was one I came upon. I might have given it to the museum.

RUTH BOWMAN: Which museum?

RAY KAISER EAMES: The Metropolitan asked for something for . . . you know, of us students . . . .

RUTH BOWMAN: Of Hofmann . . . ?

RAY KAISER EAMES: I don't know. They wanted something that he had drawn on.

RUTH BOWMAN: What was the most important thing you think you got from Hofmann?

RAY KAISER EAMES: It's very difficult for me to say, because he was an extraordinary man, you know; just knowing him was wonderful. He was absolutely -- did you ever know him?

RUTH BOWMAN: Only in his last years, from the time of his Museum of Modern Art big show.

RAY KAISER EAMES: I have no idea of what it would be like to just suddenly come upon him, because, you know, over the years he was such a great friend and such a wonderful person to be with. I can remember, we went to the movies and saw Chaplin in "Modern Times." I've never laughed more. He laughed so, we were just in stitches from it all. No one could enjoy anything more than he, but as far as his teaching, I think it was structure and relationships, and color as structure, and afterward I read theories that just make my skin crawl, they frighten me so, it's "fixing things," saying what he meant. What he meant just had nothing to do with, to me, fixing things in little boxes. That is the opposite to what he said. He didn't close anything, he opened everything and made it possible to see wholly, I think, as we do see. We don't see a line, we see a line and both sides of the line. It took his large view to make it possible for all of us to see and feel and know more. I don't know other teachers, I don't know of anyone who was as able to relate the experience of life to a canvas, to a format.

RUTH BOWMAN: He lectured to you, while you were drawing, about generalities, or he had specific things to say?

RAY KAISER EAMES: No, he criticized each. I don't know how he did it later.

RUTH BOWMAN: But when you were there . . . ?

RAY KAISER EAMES: When I was there we drew and he would come to each person and criticize in relation to that person, you know. He talked about plasticity. If someone was beginning he never destroyed what that person had, he only enlarged it, but never cut down. If someone made a little tiny drawing on a big sheet of paper, he would never say, you know, that's not right -- never anything about right or wrong at all -- how to just increase what one felt. Each person would follow the criticisms and then evenings, or sometimes, every once in a while, whenever it was, he would have a whole lecture, give an hour or half hour -- I don't know how long it would be -- and there were many people who took notes. Do you know Lillian Olinsky, now Kiesler? She must have lots of notes. She took them carefully. I have a few, but they're so sketchy because I couldn't write -- but most everyone cleans them up, and in the cleaning up the meaning disappears, as far as I'm concerned. Saying what he really meant to say -- he had ways of saying things, just the word he would use, whether it was correct English or not, gave much more meaning, to me, than another word, because it would . . . .

RUTH BOWMAN: You're saying that all his words had to do with specific visual experiences rather than generalities, what was happening in the room?

RAY KAISER EAMES: No, no, I don't. I mean the choice of his words had meaning, and if it was not correct

English, or it had a German ending to it or something, it would be changed by other people, and the sentences would be made to come out as sentences. And it lost meaning, because that isn't what he said. Oftentimes, as I've read various things that have been written about what he said, it has seemed to me that they're not what he said. I would love to find more direct notes.

RUTH BOWMAN: We are doing a wrap-up tape at the Eames Studio.

RAY KAISER EAMES: It's the studio of Charles and Ray Eames.

RUTH BOWMAN: You can correct that. We were talking before about the fact that you were reluctant to focus on the process of working -- talking about philosophy of working.

RAY KAISER EAMES: Philosophy is probably more accurate, because I think I started to say that Charles was able to say things in a way that I would wish I could, and they mean so much to me that it seems ridiculous to attempt to say the same thing that has already been said so beautifully. When I think of points of view, I think it's contained in the work. Do you know the diagram that was in the "Connections" show, in the little booklet? That had so much to do with attitude, I think, certainly of mine, but that Charles did it and it's there, and it's the overlapping of interests. Did we talk about that?

RUTH BOWMAN: The overlapping of circles?

RAY KAISER EAMES: Yes, clients' interests, society's interests, personal interests -- and there's one point where they all intersect, and it's at that point where one can work freely, because it's to everyone's benefit. Otherwise, it's pulling away from someone.

RUTH BOWMAN: So that you . . . ?

RAY KAISER EAMES: So, if the problem is considered in that light, there's one way to work where it's of benefit for all, rather than . . . . I hate it, but he might like it, or outguessing -- it removes all the outguessing, which I think is the great horror of all times -- to think what somebody might like, you know. Charles used to say, "We're more like each other than . . . we're like trees or animals -- there is a point where we are all alike," and it was true -- chairs, or exhibitions or film or daily life.

RUTH BOWMAN: So that talking about how it is or why it is is really redundant for you.

RAY KAISER EAMES: Exactly. Each word is apt to mislead, I think.

RUTH BOWMAN: And that's why you really don't like interviews.

RAY KAISER EAMES: I don't like to talk about it. I'd rather do something than talk about it.

RUTH BOWMAN: Well, can we talk a little bit about what you're doing now, though?

RAY KAISER EAMES: I read something so marvelous about that in Philip Dunne's book just the other night. It was about Buneul, finding an old film of Bunuel's and looking at it with him -- I guess it was the "Chien d'Andalou," and there were reviews about the meaning of the dragging, the animal being pulled by the church, and everyone was saying "how significant" and all, and Phil said to Bunuel, "Did you mean that? When you did it, what was your point?" and he said, "No, I thought it was an amusing scene." And I then thought that was a great example of how things come about. I know when we were making "Parade," the movie, we just wanted to show close up these toys that we loved so, and we just hung them on the idea of a parade so you could see many things passing by. By looking at each one, you could see how they were constructed, whatever the material was -- this was before "Toccata for Toy Trains" -- and we put it together just as a parade, and there it was. And later on we read all sorts of things, criticisms, and it was actually banned in one showing in Kansas for being a "red," meaning Communist, film. We could not possibly imagine what they were talking about. Then we looked at it again and we found things -- someone had later written -- Indians with heads off going by banks and capitalism and the red balloon went up -- all these things. We hadn't even noticed that there was a head missing on one of these little cast figures. There was a row of them, and we just weren't paying that much attention. Mainly it was to get it by at the right speed in front of the camera, and the lights and all that. These things are so misinterpreted -- it would have been better to just let them be.

RUTH BOWMAN: So you really are concerned about being misread or misinterpreted?

RAY KAISER EAMES: Not so much, I'm not concerned about it. I don't like to talk about those things. Everyone's going to misinterpret something sometime, so . . . .

RUTH BOWMAN: You obviously are getting on with some work, and I just wondered if you wanted to say anything about the work you are doing now.

RAY KAISER EAMES: I feel it's very unimportant compared to the work that has been done by our office. But I don't consider it unimportant myself, because naturally I want to do it as best as I possibly can. But in taping it, it seems unimportant. There were many things left hanging. We talked about an exhibition for IBM for many years. It was going to be in a museum in New York. Having done the "Mathematica" exhibit which opened here in 1960, I think it was a marvelous thing for IBM to sponsor. They didn't give any direction at all, they just thought it would be a good thing to do, to give as much information about mathematics and mathematicians as possible as a background for young students, and hopefully it would also be interesting to people who knew a great deal. And they said, fine, because they thought it was a worthy thing, good for everyone. But for New York -- we realized there wasn't a science museum as such -- there's Natural History. There hadn't been one in New York, and we thought that would be a good place. By that time we knew the building was going to be torn down and they were going to build another one. We had a choice of having the ground floor or the second floor or basement; Charles finally thought the basement would be the best thing because then it could be worked on with just its own self in mind -- not thinking about changing seasons or being affected by people walking by. And I thought that sounded very good. The people coming to it would come from their own interest -- even though we'd done many windows and exhibitions on the ground floor for the old 590. We had spent a great deal of time on it. So when it happened, they asked if our group -- the people here who were interested in it -- could carry it on. We said we would, at least to the point of getting something together. Whether we could produce it, I wasn't sure at all. I said we would work on it to a point, which we did. We brought it to a point where it had what we thought would be a good idea. The content was worked on, and then we just turned it over, because it was all new people involved in the running of the building. They didn't have the background for this, not the same ideas that we'd had for so long. But we did have a base for it. We had an early film called "The Museum," which gave a very good base, a good point of view. So many things we did were done that way. We made a film that someone could look at, rerun, and get an idea and go on from there, rather than talking about it or presenting a paper.

RUTH BOWMAN: This was a film that you made for IBM on the museum.

RAY KAISER EAMES: On the idea of the museum. And it's still marvelous, I think. So anyway, we did that and presented it, But by this time we felt we couldn't operate with everything new, the new people in the East, and the problems of communicating back and forth, the time, budget, all those things were just difficult. We felt that we could do things separately. Part of the exhibition was going to contain a traveling show which also had a great deal of work done here, which we then turned over to the group -- many of the people had worked here -- John and Marilyn Neuhart and Dick Donges and one of the boys who had been here for some time -- which works very well, because they're now working on it and I'm supervising and looking out for the things that I feel are important, and just checking my information with theirs. And that's working very well. I don't like to say "supervising," but I am representing IBM and the long connection that we've had with a group in New York, who are working with this space in mind. It's not going to be as we had it, because there's no one who feels the same way about it. And they haven't the knowledge, you know, the long years of working on it, so they'll have a different idea. But I just will be looking out for the overall concerns. We've always thought of ourselves as IBM, you know, working on anything. There's another job that we're also working on, because we all thought it was interesting, of presenting the idea of economics to the public. It's the first time it's really been attempted, and we all feel that it is a worthwhile endeavor, because it's very difficult. We knew nothing about it. We didn't know it and anyone I talked to didn't know either. We felt that if the sponsors felt that it was a good thing to do, after having not felt that it was a good thing to do -- they have mostly been wanting not to get into it, but now for the first time it's an exhibition that invites the public off the street to see an exhibition on this subject, so that the problem is to present it in a way that will be understandable.

RUTH BOWMAN: Where will this be?

RAY KAISER EAMES: In San Francisco. The building that hasn't been built yet. We are working on that -- again working with a group not in the building, but as representing the people who want it.

RUTH BOWMAN: And then you have a third project.

RAY KAISER EAMES: There is a traveling show for IBM.

RUTH BOWMAN: On what subject?

RAY KAISER EAMES: Invention.

RUTH BOWMAN: Invention. That's a concept.

RAY KAISER EAMES: It's been touched upon, I think, by many people, but we hope to make it one subject.

RUTH BOWMAN: Will it be very large?

RAY KAISER EAMES: Not too large, no. It has to be able to fit into . . . there are not too many large places. I just

don't know the size now.

RUTH BOWMAN: Will it have an audio-visual part to it?

RAY KAISER EAMES: Surely.

RUTH BOWMAN: Part of how you communicate.

RAY KAISER EAMES: So that's that, the big exhibit, and San Francisco which is for the Federal Reserve, and the thing has been promised -- we've promised many things -- I've had to put things aside. I'm also now trying to put . . . we've had one big commitment, I think -- I had to say these things because they might not come off.

RUTH BOWMAN: You said that now, you said they might not come off?

RAY KAISER EAMES: We've had a series of slide shows that are so beautiful, and Charles never wanted to put them on -- have I talked about this?

RUTH BOWMAN: You started to talk about it.

RAY KAISER EAMES: He never wanted to put them on film because the quality goes down so rapidly. But I feel there should be a record of the way they were, so I am going to try to do that. What comes out of it -- we're going to try one that's the simplest one, just because the images are all similar, shot under the same conditions. And if that works, we'll try another one. And again, one of the people who worked closely with him is involved with that. I'm supposed to call . . . .

RUTH BOWMAN: But the concept of documentation of the work of the studio is something that you really are . . . ?

RAY KAISER EAMES: Well, I have to on different levels. We have to have records -- we have to devise a way of finding images, because those will eventually go to the Library of Congress, and they'll just be lost if there's no way of getting at them.

RUTH BOWMAN: . . . and figuring out how they were used in their original use . . . ?

RAY KAISER EAMES: Yes. And they've been talking about books and books, and I don't want to get into that now. Eventually there will have to be some way, but right now it's mainly the problem of locating, the library problem. John and Marilyn Neuhart have been very good about that -- and they've done some of it -- but they're also occupied and they don't have that much time. It takes someone who knows a great deal to even touch them. Because you can get them out of place and they're lost forever, and all that. The big thing is these slide shows, because it would be wonderful if they could be available as they are now, and not take special equipment. It's very difficult -- we've shown them a few times at great expense and great labor to get them to be seen in another locale.

RUTH BOWMAN: That's a very time-consuming project.

RAY KAISER EAMES: It is. And then we're also working on a book of "Powers of Ten" with the Morrisons, who've always been interested in that, because in the film we had very tight restrictions about not stopping in time or in line. It was important, Charles felt. It was absolutely important to keep the line and keep the speed of acceleration exactly even, but it's not necessary in the book, you know. You can make little excursions in a book where you can't in a film.

RUTH BOWMAN: It's Morrison's voice on the second version?

RAY KAISER EAMES: That's right, Philip Morrison. A great, wonderful man -- and his wife Phyllis is a marvelous mathematician. So that's being worked on. Things are being re-shot so they can be reproduced. They were shot directly on the film, which can't be used -- it's much too grainy. So that has to all be re-shot and worked on. But that will be out eventually. Scientific American has been wanting to do that for a long time.

RUTH BOWMAN: One of the things that I've noticed, Ray, and this includes me, is that when someone wants to talk to you, although you're always too busy, you always make time. I met a young woman from Long Beach who is doing a master's thesis, and you opened your door to her and let her see a film that she wanted to see and talked with her. I just wonder how much of your time is taken with these wandering "scholars."

RAY KAISER EAMES: Quite a bit; quite a bit. I try to because I think it's important, but I can't do it forever, can't do it always. I sometimes have to stop, have to cut off.

RUTH BOWMAN: One of the things that I did want to do, before we close this taping, is to talk a little bit about

things that I know about that we forgot to talk about, and one of them was that you made a reference to your interest in the dance.

RAY KAISER EAMES: Yes, that goes back for a long, long time. As a child I studied -- oh, I'm so fortunate -- I naturally feel they're very closely related -- movement and -- it sounds stupid, everyone thinks so, I'm sure. But my introduction was early, it was a very, very good teacher. Did we not talk about it?

RUTH BOWMAN: No.

RAY KAISER EAMES: Leila Maple. Oh, this marvelous woman had been a member of the Russian Ballet, long, long, long ago, so her training was pure, and she turned it over to the children in the same pure state.

RUTH BOWMAN: In California?

RAY KAISER EAMES: In California, in Sacramento. A marvelous woman, who was beautiful and strong and gentle and strict -- all the great things in a teacher, you know, and so I felt that was a most fortunate happening. Then, at school, -- oh, at that time also, again, I felt fortunate that doctors at that time said children should not be on their toes, so that was eliminated, you know. Naturally, my parents had been interested in ballet. I know when Pavlova came to the West Coast they had arranged for -- I wasn't there, but my brother was there as a baby and my mother watched from the wings -- she would come out and kiss my brother and she would come back, and my mother said that she realized afterwards that she would take off her slippers and throw them away after each performance. Her toe slippers were soft -- I hadn't known that -- and there were little holes at the end, at the bottom of each one, and there they were, you know -- not thought about, you know, saving them. Anyway, I was terribly fortunate at a very early age to have seen one performance of the great Pavlova. But anyway, after that, because a teacher in school had been a student of Doris Humphrey, and had studied briefly with Mary Wigman in Germany -- did you ever see her?

RUTH BOWMAN: No, although I saw Doris Humphrey.

RAY KAISER EAMES: Oh, Wigman was so extraordinary as a dancer, just extraordinary! So it was wonderful to have that experience, because also at the school they gave yearly performances of Greek drama, using dance.

RUTH BOWMAN: This was a college?

RAY KAISER EAMES: It was a school -- it later became a junior college, but it wasn't called that then. It was called Bennett School.

RUTH BOWMAN: And Doris Humphrey was on the faculty?

RAY KAISER EAMES: No, a student of Doris Humphrey's. Her name was Carmen Rooker, but she knew all these people. The people at school were interested in -- well, in all sorts of things -- music and drama and dance, among other things. They had people visiting all the time. Mary Wigman would come and visit and loved the stage they had built, which had a wonderful resounding floor, so that was -- it had to be that close to something. And later on, after that, I went to -- I studied briefly with Hanya Holme who was a disciple/student and later representative of Wigman. And then also because of these two things I was interested in [Martha] Graham -- I think the combination of the two things -- I knew there was a link someplace -- like the overlapping lines of that diagram. Graham had certain restrictions, and Hanya Holme had, and I knew there was something in between, so I was very interested and worked with Graham. I never thought of actually performing -- I was studying to gain knowledge of movement and body and space, which is related to painting, which is related to Hofmann which is related to music and architecture, actually. Which I feel was a preparation, in my way, for later work in terms of architectural design. They all seemed interwoven. You asked me about the person who told me about Cranbrook. But also, I think the underlying element, early on, was Leila Maple. Besides the influence of my parents, and of teachers at school that had been impressive at an early age, was the sense of discipline and devotion -- being able to accomplish something. Because certainly she had it, certainly everyone I've thought of that -- Hofmann certainly had it -- Graham certainly had it, Hanya Holme, Wigman, and all the people at school had it as well. There were two people at school -- it was quite an extraordinary group of people; there was a musician -- I seemed to have talked about this -- Horace Middleton, an Irishman, who was beginning to be known in England as a conductor but had some ear damage which -- this is too complicated -- it changed tones, if you can imagine it. But naturally, his love of music continued, though he could not control the orchestra, it was too excruciating. But he was head of the music department. He treated us young girls as intelligent music students, and he was so marvelous. Writers, a dramatist who was part of the -- that early group in England . . . .

RUTH BOWMAN: Bloomsbury?

RAY KAISER EAMES: No, before that -- I can't think of it -- the Fabians -- they became part of the school, because May Friend Bennett was interested in children having a good education and they loved being there and his wife

was a great actress. Edith Wynn Matheson was her name; she was old then, of course. That was to all our benefit. Things were not separated, that is something else, you know, in our lives. Charles would not separate these things, and it was natural for me not to separate them, you know, change these avenues -- now you study history, now you study dance, now you study music, or now you study pottery or whatever it is -- it all seemed to be one thing. And that was true in a sense at Cranbrook. Cranbook at that time had the same quality. Just because you painted didn't mean you were not interested in weaving.

RUTH BOWMAN: So the things that you and Charles gathered in your work, say, objects, in this studio and that you have at home, are not really obsessive collecting, they're just part of all that, too.

RAY KAISER EAMES: Surely. Nearly everything was an example of something, you know, just because . . . like the Kachina dolls. Early, early on we thought they were such great examples of the discipline within the people, where it seemed . . . instead of people saying wildly, I will just create something, you know, with the Kachina dolls they had to follow rules. They had to have certain colors; they had to have certain eyes, certain noses, ears, certain feathers, and within the piece of wood that could be found. We felt there was great room for any creative process and any energy that anyone wanted to put into it, but within the restrictions and, if they were not within them, they failed. Because, when you see these wonderful objects, especially the old ones, where it was very closely followed, they became wonderful examples of this reflection and also they stood for a wonderful, broad point of view of the religion, where these were never considered sacred objects. And the people who performed the dances (which we later were able to see) were so marvelous -- you know, their attitude was sacred in that they were representing aspects of God, but they themselves were just assuming that for the dissemination of the information. And I love that distinction. So when you see Kachina dolls, really, they're all examples, as were the toys. And when we saw some little crummy thing, it just was such a good example of that -- which is all said in the toy film in the very beginning. It is just sometimes cut out, it breaks my heart, because it was such a simple little statement. And I can't think of anything that wasn't, for some reason -- hopefully -- I've collected the boats, which are paper boats, cast iron and cloth, and tusk and leather -- you know, made of all different things -- each, hopefully, to make a film about toy boats so that people could see them again up close. Some time ago you asked about Poly Orchis Haplus, which is a wonderful little segment -- it was never really put together as a film -- I don't even know if it has a title -- but it was a shooting of this little sea creature, which is really terribly tiny, but it fills the screen, because we just wanted everyone to see the structure of this great sort of jellyfish, see it moving and its whole complicated structures. It was so transparent, you could see it very clearly.

RUTH BOWMAN: At some point when I came here many years ago I saw a slide show on the circus, and I wondered if you would just tell a little bit about why the circus.

RAY KAISER EAMES: Well, it's always just another example of something that we both felt strongly about. Again, I hesitate to say this, because Charles has written someplace, I'm sure -- I don't know where -- maybe in the Norton Lectures, if they ever get printed -- which is another thing we absolutely must do -- Jehane Burns and I promised ourselves that we would get at this, because they've been promised a long time ago and it's very difficult to attack, very, very difficult.

RUTH BOWMAN: Because of the illustrations?

RAY KAISER EAMES: Not so much the illustrations, you know, but because they were spoken as Charles would speak -- he didn't speak as if he were reading, and there would be all sorts of hesitations and fumbling for words because he wanted them to mean what he wanted them to mean. So I don't want to translate that, and I don't want -- I think we talked about Hofmann's lectures having been misrepresented -- the idea of their being made into good English . . . .

RUTH BOWMAN: But you have feelings about the circus?

RAY KAISER EAMES: Yes, and I say I think this must exist in Charles's words about the circus, but the idea of a disciplined structure that just has to work, and people think about wildly running away to the circus and having a good time, such a jolly time. As people used to say, oh, it must be such fun working here everyday, and that's something that's unthinkable because at the time you don't think of it as being fun. It would be marvelous to be able to do, but you don't say, "Oh, how jolly," because they're very difficult things always to face, to do. But the same way with the circus. It was such a tight organization with very strong restrictions because it had to work moving from place to place to place, so that was a fascination long, long held, and we would go -- we'd naturally -- I'd been taken to the circus as a child many times. My father would sometimes take me while my brother would be taken to the theater because he was older. The idea of how they managed to put on such a performance night after night, day after day, the tent, in those days, the tent up and down, which was, really, a remarkable task. But the people's responsibilities within the organization were very fixed and become very necessary or it can't exist. But we would go and loved going. At that time, when we first came out here and we began going, we met a wonderful man, Bill Ballantine, who was a writer and had become a clown. Did you ever

hear of Bill Ballantine? He's written quite a bit about the circus. But he became a clown in order to travel and work with this organization, and he later became head of Clown College, which was formed because they realized people were not learning what makes a clown, how they operate. So we've been very good friends for many years, and we would go with him, you know, and we'd eat with him, eat in the tent when he was here, and be able to walk around the -- that's why there are some marvelous pictures of -- it's called Clown Alley -- where the people lived in such an organized way.

RUTH BOWMAN: So you often thought about the circus as study, design, and discipline.

RAY KAISER EAMES: Yes, and also . . . you'd see those terrific coils of rope -- we'd stay there in the afternoon, between the afternoon performance and the evening performance and watch this happening over the time. Having, when something's finished -- this is in the tent, these enormous tents, the coils of rope and each . . . it looked like there was a heap of ropes, but each one had to be in a certain place because there was no time to think. They have to do exactly what they can do, otherwise it would take so long in between shows; while one thing was happening, something else was being prepared, and that has to be in the right place. The people's lives are at the mercy of organization -- if the rope is tangled, you know -- you can't say, "whoops," because someone's life is at stake. And another wonderful thing was the practice; the children practice during that time too and are trained by the parents and by friends, and it's a marvelous happening, with this wonderful quiet sound of just their voices in concentration. It's really terrific. We'd always joke that we would run away -- you know, when everything fell apart, we would run away to join the circus.

RUTH BOWMAN: Well, some aspects of your work, now that I have this new view of what a circus is like, with all those different things happening simultaneously here.

RAY KAISER EAMES: You saw the slide show? Oh, it's so beautiful. Again, you see, I want so much for that to be able to be seen, even thought it will be little postage stamps in size, because it's just technically too difficult otherwise.

RUTH BOWMAN: I saw it in 1973 when I came for tea one day. You and Charles had me to tea. I brought a friend.

RAY KAISER EAMES: Then you must remember the coils of rope, and the wires and the . . . oh, I can remember images that we took. And something else is remarkable. Some of those slides go back to 1945, I guess, and they're perfect. You know, people's slides have disintegrated, lost all color, and these have remained perfect.

RUTH BOWMAN: Did you process everything here?

RAY KAISER EAMES: No, it was Kodak. In those days we had very good film and very good processing. We kept them carefully, but not in any terribly sophisticated way.

RUTH BOWMAN: I noticed that you have video discs in your studio. Have you done any work on that?

RAY KAISER EAMES: Yes, we have made some attempts at programs for people who are working on it, because that's one of the most difficult things to use properly. We have great convictions about that, and it's being worked on. Hopefully, there'll be some examples in the new 590, because I think it's a good way to learn about it. I don't think it's enough to just put on a film, to just sit there and watch. It has other capabilities.

RUTH BOWMAN: To search and retrieve . . . ?

RAY KAISER EAMES: Exactly, and linking is one of the most interesting aspects, which is still experimental.

RUTH BOWMAN: The use of two discs?

RAY KAISER EAMES: No, not necessarily two discs, but within, you know, to be able to follow a path. It's complicated, but it's being worked on.

RUTH BOWMAN: And you're following all of these . . . ?

RAY KAISER EAMES: Oh, Charles loved -- you know the last film that was made, the Cezanne film -- I talked about that, I'm sure, didn't I?

RUTH BOWMAN: A little bit . . . and about the use of a computer because you couldn't keep the lights on.

RAY KAISER EAMES: We couldn't do it any other way, and it's just so -- did you see it?

RUTH BOWMAN: No.

RAY KAISER EAMES: Oh, it's beautiful. The film itself has not been released, because there's a question about

credit clearances. It should be any day now.

RUTH BOWMAN: Has the filming been documented, the way in which he went about making the film?

RAY KAISER EAMES: Not at all. It's too bad that it hasn't. There are many things like that. We used to say, should we have a film about the film, but there isn't any.

RUTH BOWMAN: But the technical things that Charles did to achieve . . . ?

RAY KAISER EAMES: There isn't any.

RUTH BOWMAN: But people worked with him here?

RAY KAISER EAMES: Sure, here, right.

RUTH BOWMAN: When the film was being made . . . ?

RAY KAISER EAMES: Yes, there was no time for anyone to shoot around here. You know, you'd not know from one minute to the next. There are slides -- separate images, but not anything that would tell that.

RUTH BOWMAN: Is there a log?

RAY KAISER EAMES: No.

RUTH BOWMAN: So if I sat here, Ray Eames, for an hour a day from now until doomsday, I still wouldn't get all of that which the Archives wants me to get.

RAY KAISER EAMES: No, never, hopeless.

RUTH BOWMAN: It's not that it's hopeless, but you seem to be so busy doing.

RAY KAISER EAMES: No, but I mean there's no way to talk about such a thing. It should be documented, but it isn't. And also, a billion words could be talked about it, and without knowing Charles, there's no possible way to know this quality that he had of devotion and enjoyment and force, I think; the combination is such . . . . I didn't tell you the name of the fellow, Ben Baldwin, who is a friend. He's an architect who had worked at Princeton and studied with Hofmann, and had been at Cranbrook. He and Harry Weese were very good friends, and his sister, Kitty, married Harry Weese.

RUTH BOWMAN: I know her.

RAY KAISER EAMES: Do you know her? She's Ben's sister.

RUTH BOWMAN: A nice thing about this small world. Do you remember -- was he also the person who recommended that you go to Cooper Union?

RAY KAISER EAMES: No.

RUTH BOWMAN: Who was that?

RAY KAISER EAMES: My dear friend who might not be living at this moment -- Eleanor McClatchy.

RUTH BOWMAN: And you mentioned a woman who was a costume designer from England.

RAY KAISER EAMES: Yes, Margaret Harris ["Percy"].

RUTH BOWMAN: And the student who went to war . . . ?

RAY KAISER EAMES: Don Albinson. He was a student of Charles's at Cranbook, and then when we left he went back, after finishing school, and he worked with Eero for a short time. Then he went to war and served as a pilot. We were anxious about him, but he came safely through it all. Then he came out here after ward, and worked here for many years. He later moved back East with his family, and he's worked -- done a lot for Knoll and for Westinghouse -- you know, we've worked with Westinghouse for many years.

RUTH BOWMAN: We didn't talk very much about the various corporations you've worked with. It seemed not relevant in the first two sessions.

RAY KAISER EAMES: We were asked to do an exhibition -- there were five designers who were asked to participate in the exhibition at the Musee des Arts Decoratifs called "What is a Design?" That's where those

questions came from, the "Q & A" film. But we showed three clients: IBM, Herman Miller, and the U.S. Government, and built the exhibition around that. Those are the main ones. There've not been that many. Polaroid -- we worked for Polaroid.

RUTH BOWMAN: That SX70. That was marvelous.

RAY KAISER EAMES: Wasn't that marvelous? And then we did several others . . . .

RUTH BOWMAN: I'm sitting here, trying to think if there's anything else I can ask you. I hate to leave on this note, on any note, particularly because of your marvelous free-association way of narrating -- you'll see this transcript and you'll say . . . .

RAY KAISER EAMES: Oh, my God!

RAY KAISER EAMES: Because you have so much to say, and are so reluctant to say it.

RAY KAISER EAMES: It's difficult. As I say, I feel so badly about no one knowing my parents, who gave me so much, through their interest -- they were just always interested in everything, and really seemed to be without prejudice, which I think is such a great thing to have given one.

RUTH BOWMAN: Where did they come from?

RAY KAISER EAMES: My father's parents came from Germany, my father was born in this country, and my mother's parents, or her grandparents, I guess, came West on a covered wagon. I realize I didn't ask questions, I didn't know, and then they were gone and I had no one to ask. But they were here. They -- her family -- Burr Evans and they were here early on -- Mayflower time, and her father must have been an extraordinary man. He had been a teacher and decided to become a farmer and learn about the land. He was evidently very bad at it, but they lived in the country and had many children. I knew about country living from her. I didn't know much about that.

RUTH BOWMAN: So you have relatives?

RAY KAISER EAMES: No, they've all died.

RUTH BOWMAN: A small family.

RAY KAISER EAMES: No, it was a large family, but they all died. There were ten children.

RUTH BOWMAN: And Charles's family is also . . . ?

RAY KAISER EAMES: Charles's family -- he has a sister, who was here just recently. His sister, who lives now in Jackson, Mississippi, founded a school, moved away and then went back in order to work with her former students in terms of education . . . .

RUTH BOWMAN: What's her name?

RAY KAISER EAMES: Adele Eames Franks. Charles used to call her husband, Vincent Franks, "Preacher." That goes back to . . . .

RUTH BOWMAN: And then that's all the family there is?

RAY KAISER EAMES: I have a brother who is in Virginia now.

RUTH BOWMAN: Does he have children?

RAY KAISER EAMES: He has children. One of his grandsons has a birthday today -- I must call.

RUTH BOWMAN: That's a good note to end on -- birthdays. Ray, thank you very much. I'm not going to keep you any longer. It's been a very valuable and useful and inspiring interview.

RAY KAISER EAMES: I feel that there are all kinds of loose ends, but it will never be solved.

RUTH BOWMAN: Well, you didn't want to do it chronologically, so we've done it free-associatively.

RAY KAISER EAMES: How did you know about the dance interest?

RUTH BOWMAN: Several people have told me about it, and so I've wanted to ask you about it.

RAY KAISER EAMES: It's always been interesting to me.

RUTH BOWMAN: You don't necessarily talk about what's interesting to you, and so it's hard to get that information.

RAY KAISER EAMES: Well, there are so many things that are interesting, but I use them. Imagine having to face, in making a film -- you know, what's the difference between, if you studied dance -- you have to, you know -- about feeling from one thing to another -- they're connected, and this all has to do with all the same thing, to me. And music and accompaniment and how things work, you know, loud or soft, or developing or not developing, they're all the same -- as painting, sculpture, or anything else. It has to turn and be round and mean something as facing you.

RUTH BOWMAN: What I'm trying to think about now is the way in which -- the example of the way you've integrated everything in your life, how that can be transmitted to other people. How can they know that that's important?

RAY KAISER EAMES: I think if someone sees a film, they either like it or dislike it. If they like it, they can either think about it or not think about it. You know, I think people react that way. Or when people see the slide shows, you know -- I wish you could see that "Goods" -- I don't think you ever saw that. We're trying to put that together now. It's so wonderful, I know it will have meaning, and I think that when there's just some way and some place, if someone remembers . . . . Did you ever see the film "Black Top?" It was of water on the . . . .

RUTH BOWMAN: Yes.

RAY KAISER EAMES: Well, you know people remember that. Jehane saw that when she was a child, she and her father saw it by accident, and it changed their lives, practically. It did change Jehane's life, because when she came here -- it meant something possible, that a film could be dealing with an abstract image and could have meaning.

RUTH BOWMAN: As simple as just . . . ?

RAY KAISER EAMES: Just a simple thing, but done with the eye of Charles. And putting that together -- you know, we had absolutely no means, no money to buy equipment; we had to do whatever we could do, and did extraordinary things. He read -- we had to just be familiar enough with the sound to read these little squiggly lines of an optical track and fit the things to that. If you wanted it to be better than casual, somehow you had to do it that way. We had the equipment at the house and did it there. And we went over back and forth, back and forth on it, you know, just to find out what would work. People would say, "How could you stop painting?" -- that's how. It's a stock answer, but it's always a stock answer. You just feel you've never stopped painting, what difference does it make?

[END OF INTERVIEW]

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