

RAUSCHENBERG ORAL HISTORY PROJECT

The Reminiscences of

Julie Martin

Columbia Center for Oral History

Columbia University

2013

PREFACE

The following oral history is the result of a recorded interview with Julie Martin conducted by Brent Edwards on August 5 and August 14, 2013. This interview is part of the Rauschenberg Oral History Project.

The reader is asked to bear in mind that s/he is reading a transcript of the spoken word, rather than written prose.

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Transcriber: 3PM

Session #1

Interviewee: Julie Martin

Location: Berkeley Heights, NJ

Interviewer: Brent Edwards

Date: August 5, 2013

Q: My name is Brent Edwards and I'm here on August 5th with Julie Martin. I'm really thrilled to be out here on a beautiful day in New Jersey. We're going to talk a little bit about her career and about her relationship with [Johan Wilhelm] Billy Klüver and Robert Rauschenberg. So thank you, again, for being able to sit down and talk to me about this history. I wanted first to ask you about your own career and your own history—

Martin: Not career. Life.

Q: Okay. Life.

Martin: I prefer history or life. Career is a word that's come about in recent times. People may have talked about careers back then but certainly not as much.

Q: We'll call it a life.

Martin: Okay.

Q: Or blur the lines.

Martin: Life and work. Sorry. It's one of my hobbyhorses.

Q: Hobbyhorses. Sometimes hobbyhorses become a career—

[Laughter]

Q: —without you intending.

Martin: Well, that's true too.

Q: I know that you had studied philosophy and then Russian studies.

Martin: Right. I went to undergraduate Radcliffe [College, Cambridge, Massachusetts] and studied philosophy. I did my thesis on [Karl] Marx and [Ludwig] Feuerbach and the theory of alienation. But I was getting more and more interested in the Soviet Union and I took a couple of courses on Russia and the Soviet Union at Harvard [University, Cambridge, Massachusetts]. I can't remember what they are right at this moment, though I do remember auditing the famous course that was usually taught by Merle Fainsod but that year was being taught by Zbigniew Brzezinski, who later came to the Russian Institute at Columbia [University, New York]. So I decided to go to graduate school for Russian studies. Rather than stay at Harvard, I decided to go to Columbia, to the Russian Institute. In those days, it was pretty easy to get fellowships. The

government was giving out fellowships to study the Soviet Union. So I think they paid me to go, or at least the tuition. As I remember.

Q: Paid you to go to graduate school?

Martin: To graduate school.

Q: Did they give you a stipend?

Martin: Stipend or fellowship. So I was in New York and doing that. Then after the first year, I applied for and was accepted to be a guide on a USIA [United States Information Agency] exhibition going to the Soviet Union. In 1959 there had been the first large American exhibition in Moscow, which presented aspects of American life to the Russian public—from art to fashion to industry and consumer goods. This was where [Vice President Richard M.] Nixon and [Soviet Premier Nikita S.] Khrushchev had a famous debate in the model American kitchen. Then there was an agreement to continue this kind of cultural exchange with a smaller exhibition that would travel to other cities in the Soviet Union. The first of these was called *Plastics USA* [1961], which was organized around all things manufactured by the plastics industry for use in industry, the home, recreation, et cetera. And there was a section called *Plastics in Art*, which allowed the exhibition organizers to get some abstract art into the Soviet Union. So it was, of course, somewhat propagandistic.

I was already interested in art. My parents collected locally a little bit and I was already interested in art. I thought this would be a great section to be in. Even though my Russian was not that good, they decided to hire me, I guess, to show that not all the guides on the exhibition were spies. If your Russian isn't so good, maybe you're not a trained agent—

Oh, I forgot! The summer before I started graduate school, I went on an Experiment in International Living trip to the Soviet Union. The usual program of Experiment in International Living, based in Putney, Vermont, was you stay in a house with a family and then a whole group travels in the country, each with the kid in the family they stayed with. Well, of course, you couldn't do that in the Soviet Union. But we were a group and we did travel around and we stayed for a month at a youth camp on the Black Sea in Sochi. So I did that, so I had this experience being in the Soviet Union.

Q: And this would have been '59?

Martin: No, let me think. I graduated college in 1960. So it would have been the summer of '60. Then I went to Columbia for one year. Then the next summer, 1961, I went to the Soviet Union as a guide on the USIA exhibition *Plastics USA*. I worked in the section *Plastics in Art*. That was mostly the summer. And I decided to go back to Columbia rather than go to Washington [D.C.] and join the government working on the Soviet Union. So I went back to Columbia.

Q: And so you were kind of traveling with the artists who were going for the exhibition?

Martin: No. No, there were no artists attached to the exhibition. It was just artworks.

Q: Oh, okay. It was just an exhibition.

Martin: I remember we had works by [László] Moholy-Nagy and Karl Zerbe and Alexander Archipenko. No, it was the art itself, much of it abstract and non-objective, very unlike the Socialist Realism that reigned in the Soviet Union. I remember going to visit Archipenko in his studio in New York—he was still alive at the time—and interviewing him so I could talk better about his work in that exhibit. Then we were supposed to talk about the art. There was another section that was about the use of plastics in the home, in the kitchen. So you show the magnificent American kitchen. Then there was *Plastics in Industry*, [*Plastics*] *in Recreation*, [*Plastics*] *in the Office*, et cetera. So it was a whole kind of propagandistic thing. Then *Plastics in Art* was one section.

Q: So you were talking to potential viewers.

Martin: To viewers. I was supposed to talk and answer questions. The idea, I'm sure, was to talk about freedom of expression in the U.S., freedom to make abstract art, et cetera. But the main question they asked was why did I wear my watch on my right arm? Because in the Soviet Union—it was the old system—you were made to be right-handed. So everybody wore their watch on the left arm. So many people noticed. “Why are you wearing your watch on your right arm?” Moscow was a very sophisticated audience. There were debates among the viewers about the art and there were defenders of the abstract art on view. The exhibition traveled to Moscow,

Kiev, and Tbilisi. And in Kiev and Tbilisi the reaction of visitors was more conservative. It was like, “Oh, that’s not art.”

Then that fall I came back to Columbia. But I got more interested in living in New York than going to Columbia so it took me five years to get my master’s [degree] and what they called a certificate from the Russian Institute. Well, it was a two-year program. I have to say that. But I didn’t finish it until, I guess, fall ’65, when finally they didn’t let you stay at Columbia for fifty dollars a semester. Up until then, as a graduate student, you could just register. If you finished your courses, you could just register and for fifty dollars or something you could stay on. Then all of a sudden, there were charges. You had to pay for at least three points and maybe for a whole semester. I can’t remember. So I finished my thesis very quickly [laughs] and got out.

Q: What did you do your thesis on?

Martin: My thesis was more a philosophy thesis than a political science one. The subject was economism, China and Russia and the theory of economism. You know, always in Marxist theory there’s this dichotomy between the socialist revolution that is coming inevitably as the capitalist economy develops and the workers become more and more impoverished and finally rise up— make the revolution—and establish the new socialist order versus the idea that the workers must fight and struggle to overthrow [the] capitalist political system and build the new socialist economic and political order. [Vladimir] Lenin very strongly came down on the second side. In his famous political tract, *What Is to Be Done?* [1902], some of his socialist party colleagues who disagreed with him argued that he turned Marxism on its head. He saw Russia

was still almost a feudal country and said, “No, we can’t wait for some vague historical inevitability. We have to take political power and use the political power to build the socialist economic order under it.” So there’s always this tension in Marxist theory and practice.

[Joseph] Stalin died in 1953 and by 1956, Khrushchev was beginning to criticize the excessive repressive policies of Stalin and to become more “let’s build the economy now” and put some more emphasis on giving the people more consumer goods and economic incentives. Mao [Zedong] and Chinese Communist Party had just seized power in 1949 and were at the ideological stage of using their newly won political power to shape the society. So the fights between the Russians and the Chinese, ideologically, were the use of political power to build the economy and make the social changes, or focus less on political power (and repression) but build the economy as the path toward a socialist society. So that’s what I wrote about.

Q: Well that’s right after the Cuban revolution too. I mean, that’s an exciting time.

Martin: Oh my god! I saw [Fidel] Castro. I think that’s the reason I went on to study the Soviet Union. That and reading [Fyodor] Dostoevsky and being curious about the Russian soul. I don’t really know how hearing Castro led to going to Columbia. But just something about it.

Q: In New York?

Martin: No, he came to Harvard in ’59. He came to Harvard. He spoke from a podium outside the sports arena or gymnasium, I seem to remember. It was so inspiring. It was amazing. I mean,

the hope of the Cuban revolution was amazing. He spoke to a huge crowd of students. No, it was extraordinary, this idea of freedom. I don't even know what he said but I remember it was incredibly inspiring. He hadn't been forced by U.S. sanctions to turn to the Soviet Union yet. There was the idea that there was this possibility that this could be a new democratic revolution and a new hope. This was part of the beginning of the sixties idealism.

Q: Was that connected to you in terms of your work or your thinking about the possibility of revolution to art, or the role of the artist?

Martin: No. Not at all. For me at that time art was art: [Jackson] Pollock, [Pablo] Picasso. I do remember seeing, at the Busch-Reisinger Museum at Harvard, Käthe Kollwitz—who was political in a sense—but I responded more to the drawing and the sentiment. I think I liked her the way you like [Pyotr Ilyich] Tchaikovsky when you first start listening to classical music, before moving on to [Johann Sebastian] Bach.

Q: Because I think of that time as also a time of debates about that question, whether you're talking about the cultural revolution.

Martin: I was not in the art world at all. I mean, I went to see art. Mainly, I was going to see art. In Boston, the Isabella Stewart Gardner Museum, or the Fogg and Busch-Reisinger museums at Harvard. And like many of my fellow Radcliffe students, I audited Fine Arts 101 but I'm afraid it took place after lunch and I often dozed off in the middle of the Renaissance. Also my parents had been members of the Museum of Modern Art [MoMA, New York] and got many of the

catalogues, which were distributed to members in those days, and I remember my parents and I went to see the Pollock exhibition when it took up the whole museum, and in '57 we saw the Pollock show there. I saw art but I was not in the art world. Sort of never have been, actually, come to think about it.

[Laughter]

Q: Still not.

Martin: Or those kinds of ideology. I've never had any art history courses.

Q: I meant to ask. Was your family in New York? Where were you brought up?

Martin: No, Nashville.

Q: In Nashville.

Martin: I was born in Nashville and my family stayed there.

Q: So you meant—the Pollock exhibit—you just went on your own?

Martin: No, no. My parents came to visit New York once or twice a year. Yes, they liked to.

They came to New York. I remember one time we also went to—it was a big Picasso exhibition

where he was in every floor of the Museum of Modern Art and then several galleries around New York. They collected a lot of art locally and our house was filled with paintings and drawings of new young local artists. They did buy some Picasso prints and ceramics over the years. Particularly after I left they were more active that way. But again, none of those debates.

Q: It wasn't crucial in terms of your development?

Martin: No.

Q: You were prolonging your graduate studies to stay in New York.

Martin: No, I never thought of it that way. In some weird ways you follow what your parents did and my mother went to New York after she graduated from Vanderbilt [University, Nashville] and so in some way I had the idea that I would live in New York. I never planned to leave New York, but mainly it was very cheap to live there. After the one- to one-and-a-half years of courses, Columbia was very cheap. I had an apartment at 130 Morningside Drive, \$130 per month with four bedrooms and three roommates. So there was no question of leaving New York. I had a boyfriend named Robert Fagan. He'd gone to Princeton [University, New Jersey] and got kicked out for not going to chapel.

[Laughter]

Martin: Can you believe? In those days that could happen. He was living in New York and was sort of an independent art historian. I mean, he studied on his own. He's a poet and art historian. He was an incredibly exciting, intellectual person. He was the boyfriend of one of my housemates at Radcliffe and we had all met him on some visits. But at Thanksgiving of our senior year in college he had contracted one of the last really bad cases of polio. She stayed with him during his first months in the hospital when he was completely paralyzed. But he survived and began to improve. When I met him again in New York in the fall of 1960 he was in a wheelchair, but that didn't stop him from going to every art gallery and museum, theater performance, or concert that he wanted to see. So I really got my art education from him. I really learned a lot about art from him. In particular the sense that there's no difference between old art and new art. That it's a continuum and that you don't react against new art because it's new. You accept it and you see the same qualities in it that you see in the older art.

But I really didn't know anything much about contemporary art. I remember going to [Leo] Castelli Gallery [New York] with Robert. There was one of—I always tell this story—one of Roy Lichtenstein's recent paintings. It was one of his versions of cubist Picasso. And I said, "Oh, when was that Picasso painted?" And Leo said, "That Lichtenstein was painted last week." Okay. You realize you had something to learn. But I looked at a lot of art then with Robert.

I also met Robert ["Bob"] Whitman through Robert Fagan. Actually, as early as 1960. Robert had grown up in Englewood, New Jersey. He hadn't known Whitman. But one of his brothers, Peter Fagan, had been a friend of Bob Whitman and another guy there named Hugh Mitchell. Hugh was studying writing at NYU [New York University] and was part of the crew helping

Whitman put on the theater piece, *American Moon* [1960]. Hugh Mitchell invited Robert and me to the performance and we went. That was the first theater piece or performance I'd ever seen. I had no idea what was going on, but I vividly remember some of the images and the experience of sitting in one of the tunnels facing the main space and seeing Bob and Simone [Forti] rolling over each other and then hopping, lying down around the space, the sounds from above, the clear plastic shape that filled the center space.

Q: Really, the first performance in general?

Martin: No, the first artists' performance, which everyone calls Happenings. But Whitman, [Red] Grooms, [Jim] Dine, [Claes] Oldenburg always called their works some form of theater: Grooms, plays; Whitman, theater pieces; Dine, artists' theater; Oldenburg called his series Ray Gun Theater [1962], et cetera. Again, this is one of my hobbyhorses: to rescue this work from the label Happenings.

I knew conventional off-Broadway theater, somewhat—Theater de Lys, the Living Theater productions. I'd followed theater. I'd gone to a lot of theater productions at Harvard. One of the things about Harvard—maybe it's still true—but in those days, the student productions were really good and really varied. Plus, in Boston there was some stuff going on that I went to.

Q: Where was the Whitman production of *American Moon*?

Martin: I didn't know. I think it was the Reuben Gallery [New York]? It's documented. I can't remember. [Note: It was at the Reuben Gallery.] But it was a space that they took over and he built those tunnels. The next piece after Whitman's was Jim Dine's *Car Crash* [1960], which I didn't go to. I remember having the postcard for *Car Crash* on the wall in the hall of my apartment. But I wasn't really in that world, but just beginning to be interested and to go to things through Whitman, primarily. Robert and I stayed friends with Simone and Bob and saw them from time to time. Whitman was married to Simone Forti at the time. I saw Whitman's piece *Flower* in 1963.

But I never saw Oldenburg's series of performances at his Ray Gun Theater in early 1962, nor did I see the dance work going on at Judson [Memorial] Church [New York]. Judson Dance Theater was pretty separate from the performances at the Reuben Gallery, although there was some overlap, with Trisha Brown appearing in Whitman's pieces, *Mouth* [1961] and *Flower*. Bob Rauschenberg was, of course, more involved in the dance [performances](#) at Judson Church. I remember Billy telling me that he tried to get Bob to go to one of the performances that were in the East Village—maybe Claes Oldenburg's—but they turned back before getting there. However, Bob R. and Bob Whitman were friends during this period and it all came together, I think, with Steve Paxton and Alan [R.] Solomon producing the series First New York Theater Rally, in the spring of 1965, where Bob R. did *Spring Training* [1965] and *Pelican* [1963] and Bob Whitman did *Night Time Sky* [1965] and the dancers like Paxton, Alex Hay, Deborah Hay, Trisha Brown presented works.

I wasn't doing very much—going to Columbia and not getting my degree and seeing a lot of art with Robert. After the blackout of November 1965, I began to live full-time at his place in Washington Square Village [New York].

Q: Were you working in that period after you finished your degree?

Martin: I wanted to work in television. I mean, I graduated—or at least finished—at Columbia in the fall/winter of '65. I don't quite remember what I did right after that. Probably looked for work. It was very cheap to live in New York and I had some money saved from the USIA exhibition time (there was nothing to spend money on in the Soviet Union at that time) and maybe the fellowship money and some help from parents.

Just to get my chronology complete—even though it jumps ahead a little bit—we can do the details later. During the summer of 1966, I was working weekends for Bob Whitman, who was presenting two theater pieces at Circle in the Square Theatre [New York]. And that continued through [9 Evenings](#)[: Theatre & Engineering, 1966] until I went to Ottawa for a few months to work on a history of the Russian Revolution. 1967 was the fifty-year anniversary of the Russian Revolution. Somehow I got hired to do research in Canada. I worked for a man named Moses Znaimer, who has gone on to start a local TV station, City TV, and Canada's version of MTV and has become quite a media mogul. He'd gone to the Russian Institute at Harvard. Somehow, I think through my friend Connie Beezer, the administrative assistant at the Russian Institute at Columbia, I heard about his project, contacted him and was hired to do research for this multi-part series on the Russian Revolution and the Soviet Union, called *Revolution Plus Fifty*. I

moved to Ottawa for that time period, the winter of 1966 into spring 1967. I remember that the last program in the series was to be an interview with Marshall McLuhan about possible futures for the Soviet Union that I regretfully had to miss, as I came back to New York to work on a show at CBS, a locally produced cultural program series called *Eye on New York*. The show I worked on was about the new art and was called “The Walls Come Tumbling Down” [1967]. The executive producer was Merrill Brockway, who went on to PBS to be the great long-time director of the series *Dance in America*. The show did segments on Tony Smith, Marta Minujín, who was working with E.A.T. [Experiments in Art & Technology] engineer Per Biorn to make an interactive sculpture—a telephone booth called the *Minuphone* [1967]—and a segment on Rauschenberg when he was working on the *Revolvers* [1967].



Brice Marden and Rauschenberg assembling Rauschenberg's *Revolvers* in the chapel of his Lafayette Street studio, New York, 1967. Still from “The Walls Come Tumbling Down,” *Eye on Art*, July 2, 1967. Television broadcast, 60 minutes. Produced by Merrill Brockway for WCBS, New York

We filmed an interview with Bob and filmed the day when the *Revolvers* were delivered from the fabricator, Treitel-Gratz, and he and Brice Marden, who was his assistant at the time, assembled and saw them in action for the first time. This must have been March or April 1967.

Then that summer I worked for Christophe de Menil on her performance series, Midsummer. And in the fall I worked several weeks for Channel Thirteen in New York, again doing research for a program on the history of the Russian Revolution. That brings me up to the time I went to work at E.A.T.

Also, I have to say that at that time there were so many Bobs or Roberts around that we had to find ways to distinguish them: Bob Fagan, Bob Whitman, Bob Rauschenberg, [Robert] Bob Breer. I think I got to saying, “Robert” for Fagan, “Bob R.” for Rauschenberg, and “Whitman” and “Breer” for the other two.

Q: Were you at 9 Evenings? Because I was thinking you must have been.

Martin: Yes, I was. But for how I got there I need to go back in time to winter 1965. Bob Whitman did *Prune Flat* in December of '65 at a benefit for Jonas Mekas's Film-Makers' Cinematheque. It was on Forty-first Street in some basement theater. He remembers it was the Wurlitzer Building with a theater space in the basement on West Forty-first. Whitman says that it was John Brockman, who was trying to do fundraising for Jonas Mekas and the fledgling Film-Makers' Cinematheque. He went to Whitman and said, “Claes and Bob Rauschenberg are doing it. Will you join?” Then he went to Rauschenberg and said, “Whitman and Oldenburg are doing something.”

[Laughter]

Martin: He sort of got them all to say yes.

Q: By saying the others were involved.

Martin: Yes. When Steve Paxton organized the First New York Theater Rally in the spring of 1965 all three participated. Bob R. did *Spring Training*; Whitman did *Night Time Sky*; and Oldenburg did *Washes* [1965]. So it was probably logical for Brockman to ask the three to participate in a benefit performance night. Most of this is documented so somebody else won't have trouble finding the details. Whitman did this incredible piece, *Prune Flat*. Rauschenberg did *Map Room II* [1965]. Oldenburg did *Moveyhouse* [1965].

Q: The Rauschenberg is the piece with Steve Paxton, right?

Martin: Steve Paxton was in this one too. This one had Steve and Alex and Deborah Hay. I remember that Deborah did some amazing slow poses on an antique-y couch that was on stage. In another section she was wearing something like a chicken-wire cage around her body that had pigeons in it.



Deborah Hay in Rauschenberg's *Map Room II*, New Cinema Festival I, Film-Makers' Cinematheque, Forty-first Street Theater, New York, 1965. Robert Rauschenberg papers. Robert Rauschenberg Foundation Archives, New York. Photo: Peter Moore © Barbara Moore/Licensed by VAGA, NY

Q: Oh, yes. A kind of cage.

Martin: A cage that had pigeons.

Q: And doves.

Martin: Doves, right.

Q: And she was moving very slowly.

Martin: Then Rauschenberg and—maybe Steve was in this—but I remember Alex Hay and they were walking on tires. Then they walked into and onto mattress springs that made sounds as they rolled onto it.

Q: Yes, that's Steve Paxton. There's a famous photo of him. He almost looks like a centaur in these tires.



Steve Paxton in Rauschenberg's *Map Room II*, New Cinema Festival I, Film-Makers' Cinematheque, Forty-first Street Theater, New York, 1965. Robert Rauschenberg papers. Robert Rauschenberg Foundation Archives, New York. Photo: Peter Moore © Barbara Moore/Licensed by VAGA, NY

Martin: Right, Bob and Alex worked with tires in *Pelican*. Steve and Alex were in *Map Room II*. This was the piece where Bob stepped into—or, better, onto—shoes made by Arman [born Armand Fernandez], which were shoes embedded in clear acrylic blocks glued together to make kind of high platform shoes. Then he reached down and picked up these two neon tubes that started glowing as he held them in his hands, activated by what the catalogue says were “contact sensors.” He walked across the stage holding these glowing neon tubes. I think it was an extraordinarily beautiful piece. I remember him saying that he had to grab the neon tubes firmly or he could get an electric shock.



Rauschenberg in his *Map Room II*, New Cinema Festival I, Film-Makers' Cinematheque, Forty-first Street Theater, New York, 1965. Robert Rauschenberg papers. Robert Rauschenberg Foundation Archives, New York. Photo: Peter Moore © Barbara Moore/Licensed by VAGA, NY

I do remember something that happened at the party after the performances at the Forty-first Street Theater in December that year. I suppose as part of the benefit there was a party for the artists, performers, and audience. It was in a room next to the theater. I remember Claes and [Patricia] Patty [Mucha, née Muschinski] doing a series of improvised tableaux on the stage, opening and closing the curtain, each time revealing a different pose. Then at one point Bob R. had Simone in a cloth bag and he was carrying her on his shoulder walking around the party and she was singing inside the sack. And it was this exact thing that he added to the second performance of his 9 Evenings piece, *Open Score* [1966]. He had her in a cloth sack and picked her up and carried her to different parts of the [69th Regiment] Armory floor and put her down for a time before picking her up and moving her to another part of the space and all the time she was singing a Tuscan love song. It was gorgeous.

Whitman did *Prune Flat* there [Forty-first Street Theater]. It is one of his classic pieces. It was a film piece, where a film of images fills the back wall of the stage and two performers [Simone

Forti and Lucinda Childs] come on stage moving and slowly sometimes interacting with the images on the wall. Then the third performer [Mimi Stark] comes out and stands and a second film is projected on her of her and her clothes as they change colors or style instantaneously. She follows the actions in the film as she walks across the stage, smokes a cigarette, undresses, and the film continues to be projected on her. It's about what film can do. You couldn't do that if you couldn't do film. Then he has things happening in the film and then they happen on stage. For instance, there is the film of an empty street on Wall Street and the two performers walk around the corner and across the street. Then a bit later the same two performers wearing the same coats walk across the stage. At the end of the piece, action on stage follows a film of it—a bright light bulb goes on high above the two performers' heads, is pulled down by Lucinda, and Simone throws water from a glass at it and it breaks. Simone was amazing—if the water didn't break the bulb she would just reach out and hit it with the glass to break it. It's an extraordinary piece.

Q: You went to this show or you were involved?

Martin: I went to this show. I had finished my thesis at Columbia in the fall of 1965 and thus had graduated there that semester. I was just hanging around doing nothing, or looking for a job.

Whitman repeated *Prune Flat* at the Martinique Theatre, a theater in the Martinique Hotel near Thirty-fourth Street in the spring and then Paul Libin, the owner of Circle in the Square Theatre, offered Whitman the theater for the whole summer of 1966. Whitman put on two pieces every weekend, two days a weekend, Friday and Saturday: *Prune Flat* and a piece called *Untitled*.

I was what would pass for a stage manager or assistant. I ran the projectors for *Prune Flat*, which meant I had to block off—rather than project—sections of the back film. So the film going on the girl would be clear and wouldn't get mixed up with the film going on the back. That was my job. Also I swept up the broken glass from the broken light bulb to clear the stage for the second piece. For the piece, *Untitled*, Steve Paxton was in it and he wore a white suit. The last image was different puffs of colored smoke coming out of different parts of the suit. Bob had tubes running from backstage to different holes cut in the suit jacket. My job was to pack the tubes in the suit with colored powder. I would put a bit of Kleenex in the tube to hold the powder at the end, push it down the tube a little and then pour the powder into the end of the tube. You can't imagine how much white shoe polish I used on the suit when I would spill the powder trying to get it into the tube. Also I had to clean it every week.

Q: How did the powder come out?

Martin: It just—poof!

Q: Some kind of mechanism?

Martin: No, no. Bob would be backstage going [makes blowing sound].

Q: Oh, he would blow.

Martin: He would blow into each tube. This would dislodge the little piece of Kleenex and the powder would come out in a cloud of color. This is what I did. As I said, we performed the two pieces each weekend.

That was the same summer that Christophe de Menil did Midsummer in August, where she invited artists to perform at different places near her home in the Hamptons [New York]. I remember she invited Twyla Tharp and dancers and showed Tony Conrad's recently completed film, *The Flicker* [1965]. Bob Whitman did a piece called *Two Holes of Water* [1966]. I worked on that. I helped him with that. He asked me to find 16-millimeter films for him. One image he specifically asked for was penguins. My great triumph was to find a film on penguins that he wanted. A lot of documentaries made for schools were being de-accessioned for some reason. There was a place on Fifty-seventh Street where you could buy 16-millimeter films for not very much.

Q: Yes, what were you doing on Long Island [New York]?

Martin: It took place in a swamp on Two Holes of Water Road [Easthampton, New York], which gave Bob the title. And at the bottom of a hill off this road were two holes of water. One of the first things, as the audience members walked from the road down the hill, he had paper bags each with sand and a candle in it, lining the pathway. People walked down and then at the "entrance" of the area, where the performance would take place, they walked between two screens. Steve Paxton and I were over to the left of the screens in a swampy muddy piece of land and I had a video camera and he had a light. He was lighting his feet and he was walking in this swampy

terrain and the video image of his feet was projected on the screens and I was videotaping it and the people saw that image. The audience sat facing the body of water and Bob had film images and things going on in the woods beyond the pond, people in a boat on the pond. Bob had other film images and things going on with the water, with the water for this and more activity that had to do with the outdoors and the sound that went with the outdoors. The engineers who were working on 9 Evenings helped him with some of the technical aspects of the video, sound, and film projection—how to get power into this fairly remote swampy area.

I was still working with him when he did the piece again and called it *Two Holes of Water-2* [1966] at the New York Film Festival in September. He adapted the original piece to the new space he was working in, as he did when he did it in 9 Evenings. The second performance was held in the basement of the Lincoln Center library [New York Public Library for the Performing Arts] where there's a little bitty theater. Maybe it's not there anymore but it was a tiny theater. I think it was mainly for films and the space on stage was almost non-existent. Bob used elements and images from the performance on Long Island. As I remember, it began with images of people coming into the theater projected on the walls of the theater. The other images appeared and I remember that it was an amazing experience, the timing and the images. Everything was working together. But that evening there was one of those torrential rainstorms in New York. The water was flooding into this theater, which was below ground and water was rising. When it got near the electricity, Bob had to stop the piece. I remember being completely disappointed that the piece, which was so moving, had to be stopped. We were flooded out. Then he did the same piece for 9 Evenings, calling it *Two Holes of Water-3* [1966].

Q: Is that why he called it 3?

Martin: Right. Because it was the third performance.

Q: It was all in the same year?

Martin: Not only the same year but all performed from August through October. Yes. Amazing.

Q: The first one was out in the Hamptons.

Martin: In the Hamptons. The second was at the New York Film Festival, maybe in late September.

Q: Then the third was in 9 Evenings.

Martin: Yes, 9 Evenings. It became a completely different piece. When Bob [Whitman] looked at the armory space, he got the idea to use the cars. The military was still parking vehicles on the armory floor. You see them parked outside the armory on Lexington Avenue in some of the photos of the opening night. He had seven cars, each carrying either film or television projectors, drive out onto the armory floor and park facing the back wall that was covered with white paper. On the balcony, television cameras shot live performances: two girls moving slowly in front of a curved mirror, a girl typing, a small fiber optic camera inside a coat pocket. Whitman fed images

of these live performances and off-air television images to the television projectors in the cars. He also cued the drivers to turn on the films of nature subjects like the eagles and the penguins.

Q: Can I ask you to back up and tell me a little more about starting to work with him? You met him through a pretty tangential connection, right?

Martin: In those days, not really. I remember Bob and Simone would come to dinner at Robert's. We just kind of stayed friends. I was sort of around. I wasn't doing anything. I was interested. Nobody hired anybody in those days.

Q: That was what I was wondering. Did he actually say, "I want to hire you as a research assistant or a production assistant"?

Martin: No, nothing that formal. I'm sure he asked me to do things or I offered to help. But I don't know whether he was getting paid. I don't remember getting paid for it. [Laughs] Well, at that point in my life I had a family. I had my mother and father who would help out. Or maybe I still had some money.

Q: Maybe I can ask you to go back and to talk about that initial period working with Robert Whitman and just give me a sense of what it was like to work with him? What was he like? What's his personality like? And what were his working methods like? So you're introduced to this world.

Martin: Very straightforward, very direct. Once he had a piece going, [he was] very clear about what he wanted. But, very much, you had the responsibility for doing it. Whitman always flirted with disaster. He was always pushing himself further. If something went wrong, it was like he accepted it. Not happy about it but—and I think Bob [Rauschenberg] was the same way, about always pushing oneself, having new ideas, never repeating.

Okay. Happenings. They weren't Happenings. I have to talk—this is another hobbyhorse. But the point is, it started with a group of young artists being interested in doing performance. Whitman, actually, had gone to Columbia to be a playwright. I mean, he'd been in Rutgers [University, New Brunswick, New Jersey] to be a playwright. Then he took a year at Columbia, which he dropped out of. His interest was really in a kind of theater. Then he got, through the people he knew at Rutgers, like Lucas Samaras, a fellow student, and [Allan] Kaprow, who was his professor for some courses. He started making art or became as interested in making art. Through Kaprow he was in one of the last Hansa Gallery shows in New York in January of 1959. Also, he was in *New Media—New Forms* at the Martha Jackson Gallery [New York] in June 1960. [Note: The exhibition is also referred to as *New Forms—New Media*.] There were two influential Martha Jackson shows in 1960 and 1961. He was in at least one of them. Kaprow of course had published his now famous article on “The Legacy of Jackson Pollock” [1958], and how from Pollock's overall paintings, art was moving off the canvas into what were called “environments” in those days—probably called installations today—and he talked about performances.

Q: So why do you distinguish between Kaprow and Whitman and his friends. Why do you say what Whitman was doing wasn't a Happening?

Martin: Kaprow did a performance called *18 Happenings in 6 Parts* [1959], right?

Q: Right.

Martin: It was the first performance at the Reuben Gallery in the fall of '59. People began calling Anita Reuben [née Rubin], who owned the gallery, and her husband at the time, Max Baker, who was handling publicity, and asking, "When's the next happening?" Max Baker liked the word and they began to use the word for all of the performances the artists were doing from then on. Red Grooms did, I believe, "plays"; Whitman always talked about "theater performances" or "theater pieces"; Oldenburg called his performance series Ray Gun Theater; and Jim Dine also talked about "painter's theater." Their works always had a script or score and was always a distinction between the audience and the performers, even if the action sometimes surrounded the audience, as in Whitman's *Flower* when some actions took place behind the rows of audience seats, or in *Night Time Sky*, where the audience sat in a large white cloth dome and events took place in alcoves above their heads and films were projected on the dome walls. Or in Oldenburg's Ray Gun Theater, the audience was lined up along the walls in a very long narrow space. Kaprow went on to do pieces where he involved the audience. For instance he carried people into the large waiting room at Grand Central Station [New York; *Calling*, 1965]. If you want to use the word Happenings, there is a tradition and a trajectory that Kaprow started and

pursued very different from the others. These other artists really were talking about theater and a new form of theater. So that's why I don't call them Happenings.

Billy has talked about working with Claes—that Claes would write a script, and this was Ray Gun Theater when he did the series, then people would rehearse during the week and perform it on the weekends. And then next week there'd be a new script. Dine's was more psychological, about himself a lot. But Whitman always said you could redo his pieces. He talks about scripts or scores with the idea of performing them in the future. His was a form of non-narrative, image-based theater. This is why I say the difference. Now, unfortunately, [Mildred L.] Milly Glimcher gave in and called her book *Happenings*[: *New York, 1958–1963*, 2012]. I like to make the distinction and I think the artists feel pretty strongly about it.

Q: You think that Whitman himself makes that distinction?

Martin: Oh, yes. He hates the word Happenings.

Q: It does sound like there is a distinction.

Martin: There really is. Somebody who's written about it and actually has brought it kind of up-to-date is Julia [E.] Robinson. It's in a catalogue that she did, the last show she did. It was either in MACBA [Museu d'Art Contemporani de Barcelona] in Barcelona or [Museo Nacional Centro de Arte] Reina Sofia [Madrid], a show called *New Realisms*[: *1957–1962, Object Strategies Between Readymade and Spectacle*, 2010; Madrid]. It was about that period, '61 and '63. She

gets it about Whitman's roots coming out of the theater. He's the only one who really has persisted in making theater pieces. I mean, Claes did a new piece once in Venice in the eighties or nineties but essentially he worked in sculpture. Dine concentrated on painting and was the first of the group to move uptown, having been taken on by Martha Jackson Gallery.

[Laughter]

Martin: Then Bob Rauschenberg got more involved in doing performances. He, of course, had been working with Merce Cunningham since 1954 doing lights and costumes, and from 1962, with the dancers at the Judson Church, also doing lights. The story is that when Alice Denney, encouraged by Billy, organized a Pop art show, *The Popular Image*, in spring 1963 for the Washington Gallery of Modern Art in Washington, D.C., she included a concert of dances by members of the Judson Dance Theater, and in the announcement for the series, the Pop [Art] Festival, she had listed Bob [Rauschenberg] as choreographer. So he rose to the challenge and made *Pelican*, performed with Per Olof Ultvedt and himself on roller skates wearing those very large parachute "wings" on their backs and Cunningham dancer, Carolyn Brown, in point shoes at a roller rink in Washington, D.C. He continued doing performances during '63 and '64, especially working with Steve Paxton and Alex and Deborah Hay. During Merce Cunningham's world tour, the four of them did performances in some of the places the company went—at the Sogetsu [Art Center] theater in Tokyo and at Moderna Museet in Stockholm, where Pontus Hultén organized what he called Five New York Evenings, and where Bob R. did *Elgin Tie* [1964], where a cow was one of the performers.



Rauschenberg creating *Gold Standard* (1964) during *Twenty Questions to Bob Rauschenberg* performance, Sogetsu Art Center, Tokyo, November 28, 1964. Photo: Courtesy of the Solomon R. Guggenheim Museum, New York



Rauschenberg performing his *Elgin Tie*, Five New York Evenings, Moderna Museet, Stockholm, September 13, 1964. Robert Rauschenberg papers. Robert Rauschenberg Foundation Archives, New York. Photo: Stig T. Karlsson

Bob R.'s interest in performances developed differently from Whitman and the others. It came out of dance. The first one, *Pelican*, was billed as a dance and first done as part of a Judson Theater concert out of town, in Washington, D.C. He did some other works as part of the Judson concerts later in 1963 and then during his travels with Merce Cunningham. But as he worked more with performance, his later ones increasingly were progressions of overlapping, changing, distinct images or actions, like *Spring Training* for the First New York Theater Rally in spring 1965, or *Map Room II* for the benefit evening at the Cinematheque in December of the same year.

For Rauschenberg, it was very much the milieu and him being part of it, working with people he knew—primarily Steve, Alex, and Deborah. He did some of those early pieces several times, especially *Pelican*. But in the 1990s when interest revived in performances of the sixties and people asked to redo works, for example his 9 Evenings piece, *Open Score*, he said he didn't want to do the pieces again. They were of the time. I think it's too bad but he said, "They're of the time." It's sort of like a painting. You can't make a painting again thirty years later.

Q: Was Whitman's method collaborative? Well, *Prune Flat*, you were just the projector—

Martin: He had already done the piece.

Q: —but for *Two Holes of Water*, you were saying you had found the film. Did he say, "Go out and find something," and just go with whatever you brought him?

Martin: In this instance he asked for nature films and in particular he wanted penguins. Some things he shot himself. He shot film of people having tea underwater. It was in the pool at the Sculls' [Robert C. and Ethel Scull] house on Long Island. He projected that film on the floor in 9 Evenings. He also shot footage for *Two Holes of Water* in which he used a mirror set up so he had the images of the front and back of a girl superimposed on each other. For *Untitled*, he himself had found a film of a spleen operation, part of which he projected with the accompanying soundtrack. It was extraordinary. Since I heard it so many times, those words in the narration still resound: "downward through the pericardial membrane." But Bob did ask for

film of penguins, like he had some idea there. He didn't say which penguin film. If I hadn't found penguins, he would have used something else, I'm sure. He had people he liked to work with who he asked to be in his pieces—Simone, Trisha, Susanne de Maria, Mimi Stark. But often it was people who were around. My roommate Jackie Leavitt was the typist in the 9 Evenings piece. He didn't necessarily pick people with special qualities.

Billy says that Claes did—that Claes would sometimes pick people who filled some kind of role he had in mind. Billy and his then girlfriend, Letty Eisenhower, were in one of the first pieces at the Ray Gun Theater and had specific interactions that reflected their relationship in real life. Claes had his group of players who were in a lot of his Ray Gun Theater pieces: his wife Patty, Lucas Samaras, and Gloria Graves. But more than Whitman or Dine he would somehow suit the role to the person. Whitman had people who would work with him. He feels the work developed through the performances. He would say, "Do it a very direct way, no theatrical flourishes." A lot of the activity was task-based. "Go over and turn on the light, do this." But of course he worked with Simone who was a consummate performer. In *Prune Flat*, she was joined by Lucinda.

Q: Childs?

Martin: Simone and Lucinda Childs. And the third performer was Mimi Stark, who worked a lot with Bob in those days. So, with Whitman, it was very straightforward. There was no—what do you call it—expertise? When a ballerina has what?

Q: Training.

Martin: Training or expertise. Or there's another word. Oh, I don't know. That wasn't part of it. It was certain motions, certain things to do, and you kind of just did them. He would rehearse but he wouldn't rehearse the night before and be all, "I have to have it perfect." There was no sense of it had to be perfect. It was like, "This is a script. This is what you do now. We'll do it."

Q: Do you remember feeling that you were collaborating at a level of making a piece together?

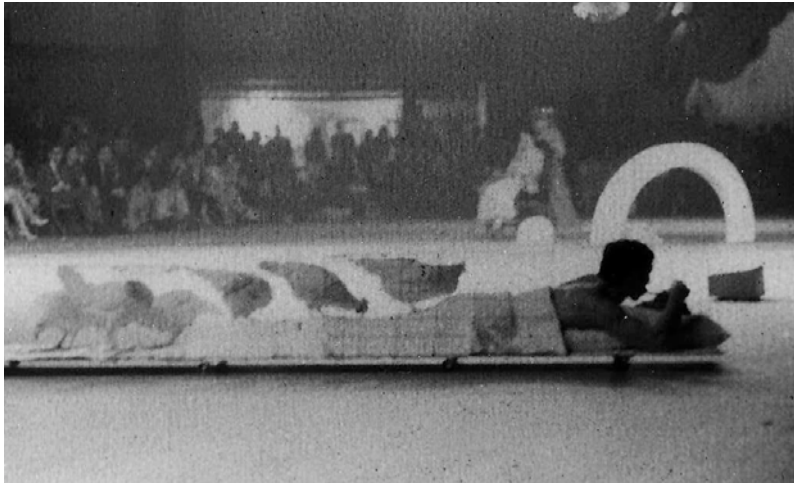
Martin: No, none of that. There wasn't a sense of that kind of collaboration for those performances. It was his piece. You're working on it. You may contribute suggestions on how to do physical things. Often a lot of the preparation is figuring out how to do things—achieve the image he has in his mind. When that is going on Bob accepts suggestions readily. But if someone's suggestion is not acceptable to him, he will just say, "That's another piece." But there's no sense of, "It's our piece together," or anything like that. Even Simone, who worked with him and obviously contributed—and her persona was very strong—but it was never any sense of, "Oh, it's Simone's piece too." In fact we were talking recently and saying that everything in Whitman's pieces were part of the development of the image or images. The objects and the performers had the same functions—object as performer and performer as object to move or be projected on.

The same was true of Bob R.'s performance pieces too. He had very worked-out ideas and actions of what he wanted and the performers worked according to his ideas. Of course, often

these instructions left room for the performer to feel comfortable in the role and work out how best to do it. For example, in *Linoleum* [1966], Steve Paxton was lying down on a long board on wheels with a chicken-wire dome over it with chickens in the space with him and he was eating fried chicken. He wheeled his structure around the space. Bob himself had one activity to set down, one at a time, several “floats”—small white geometric-shaped sculptures by Robert Breer—that moved very, very slowly on the floor. He would draw a chalk line around one of the sculptures and then it would move away. A bit later in the piece, Bob would draw another chalk line around the float in its new position. I remember another performer, maybe Deborah or Alex, made a line on the floor using cooked spaghetti from a bowl in the lap of the woman sitting in an ornate chair—Simone Forti in the Washington production. Very strong images but no theatrical flourishes. Of course, everyone worked together to make the performances work and each contributed in his or her own way but there was clear authorship. It’s the nature of theater and of choreography, don’t you think?

The idea of collaboration between artists and engineers came later and was articulated at the time of E.A.T. In fact, I remember—just talking about collaboration—I remember when I started working with Billy and with E.A.T., all of a sudden, they talked about “collaboration” and I found that word was very strange because the only way I had heard the word being used was in reference to World War II. And collaboration in that context was a negative word. I remember it took a while for me to get used to that word in that new context. It was Billy and Bob R. who used and developed the idea of one-to-one collaboration between artists and engineers. Bob R. in particular—Billy says that. He remembered that his first ideas about engineers working with artists was that the engineer would furnish the artists with a new palette. He used that metaphor.

A palette for the artist. The new possibilities. He saw the engineer as offering the artist new possibilities.



Steve Paxton in Rauschenberg's *Linoleum*, NOW Festival, National Arena roller-skating rink, Washington, D.C., April 26, 1966. Robert Rauschenberg papers. Robert Rauschenberg Foundation Archives, New York. Photo: Steve Schapiro



Rauschenberg, Simone Forti, and Steve Paxton in Rauschenberg's *Linoleum* (1966), Spring Gallery 68, Bert Stern's studio, 342 East Sixty-third Street, New York, May 28, 1968. Robert Rauschenberg papers. Robert Rauschenberg Foundation Archives, New York. Photo: Shunk-Kender

Q: That term was Rauschenberg's or Klüver's term? Palette?

Martin: That was Klüver's.

Q: Whose term was palette?

Martin: Billy's. He saw technology as offering a new palette. This is from somebody from outside the art world. Another element in Billy's thinking from the beginning was the idea of the individual could influence the larger systems he was contributing to, the idea of the individual taking responsibility for his work. He wrote about this in 1960 in a piece he published in Alfred Leslie's *Hasty Papers* [1960], a "Fragment on Man and the System." In his early collaborations with [Jean] Tinguely and Bob R., he saw in particular that the artist takes full responsibility for his work, and by working with engineers, it would encourage the engineer to take responsibility for the systems he was working on. Billy soon came to feel that it was the engineer who needed to work with the artist. That the engineer could benefit in his professional capacity through working with the artist. Not in the way of discovering new equipment or technical ideas but in using his knowledge in a new situation and enriching his own way of working. The engineer could offer the artist a new palette but the artists could offer the engineer a new sense of possibilities in his work as well. Billy said it was Bob [Rauschenberg] who articulated this idea of collaboration in the sense of individuals working one-to-one. Billy developed it and articulated it but he has always said that it started with Bob—Bob always talked about collaborating with his materials even earlier—before there were other people involved in the mix. This whole idea of a collaboration of equals very much came out of Bob. Or let's say Billy's working with Bob.

Although, he saw in his work—and he's written about that. Do you know his piece, *The Garden Party* [1960]?

[Note: Published in *The Machine as Seen at the End of the Mechanical Age*. Exh. cat. New York: Museum of Modern Art, 1968. Originally published in *Zero* (Düsseldorf), no. 3 (1961).]

Q: I don't think so.

Martin: I should probably give that to you. That was his reportage on his collaboration with Tinguely—working with Jean on the machine that destroyed itself—that he wrote one or two days after the event.

Q: *Homage to New York* [1960]?

Martin: *Homage to New York*. Right. And after that experience Billy wanted to keep working with artists very much. So he would say to artists whom he was getting to know, “Do you have an idea that needs an engineer?” Jasper [Johns], for example, came up with the idea of using a neon letter in a painting and not having the painting attached to the wall by wires. He asked for portable neon. In the different collaborations that Billy had before E.A.T.—and it was also true with E.A.T.—the impetus came from the artist. It didn't mean the work didn't change once the artist and engineer were working together, but the impetus—the basic idea—came from the artist. For example, Andy Warhol asked for a floating light bulb. When battery technology made it that the bulb would have to be as big as a house to float, Andy looked at the heat-sealable material Billy had found for him and asked for clouds. While Billy and his colleagues at Bell Laboratories were trying to figure out how to heat-seal rounded shapes and not have them fall over, Andy simply folded the material over and made his rectangular *Silver Clouds* [1966].

Q: That was my impression, that the artist presented a wish list. Then the engineer would approach it as a kind of problem-solving, “How can I make someone float in the air?”

Martin: Exactly. That’s why Billy always emphasized the collaboration between artists and engineers, not scientists. He felt that engineers were problem-solvers—hands-on kind of people—and this was what was needed in working with artists. He was never a fan of “art and science” but more “art and engineering.”

Q: How can I make a neon letter without wires?

Martin: Exactly. But if it would come about that certain things wouldn’t work, then the engineer might say, “It doesn’t exactly work this way but how about this?” Then the idea was that it would be a dialogue. The engineer wouldn’t contribute art, god forbid. But he would contribute a solution that might change the look or make the piece work slightly differently.

Q: Let me ask you a little bit more about your own life. Then I did want to ask you some of your sense of Billy’s history—his history going a little further back—of collaboration. But to stick with your story for a minute, would the first time you would have seen Rauschenberg in person, or seen a work by Rauschenberg, have been at that benefit for Jonas Mekas in December of ’65 when you went to see the Whitman and the Oldenburg and the Rauschenberg piece? Would that have been your first encounter with Rauschenberg?

Martin: I saw Rauschenberg's show [*Robert Rauschenberg*] at the Jewish Museum [New York] in the spring of 1963. I remember seeing that. And seeing the large painting, *Barge* [1962–63]. Incredible. It was along the wall in a room that was wood-paneled. It's not the same anymore but you know, there was a white room and then you went into sort of the space next door. Then the *Barge* was just incredible. I remember seeing that so I knew who Bob was. But, I certainly didn't know about the performances he was beginning to do, *Pelican*, the stuff in Sweden, *Elgin Tie*, or anything like that.

Q: The one with the cow? Yes.

Martin: Yes, with the cow. The next things I did see were in 1965, *Spring Training* at the First New York Theater Rally and *Map Room II* in December. He did *Pelican* again in Washington in 1966, for what Alice Denney called the NOW Festival. I was there for that and he did perform it at the First New York Theater Rally in spring 1965 with Alex Hay as the other man.

Q: *Oracle* [1962–65] is the first of his collaborative pieces. But you hadn't seen *Oracle*?

Martin: No. I don't know if I saw it at Leo [Castelli]'s or not. It's possible because at that point, Robert and I would be following things and Castelli was one of the people you followed. But I can't say that I had.

Oh, I know! '65, the First New York Theater Rally. So I saw *Spring Training* and *Pelican* because Robert and I were going to all of those performances, primarily because of Whitman. I

wasn't working with Whitman yet but Robert and I went to all his performances. That was the spring of '65. May, I think.

Q: It was before you started working with Whitman?

Martin: Yes.

Q: But you had seen it?

Martin: Yes.

Q: Is *Spring Training* the one where he has dry ice? Is it that piece?

Martin: Yes, I think so.

Q: He has the bucket.

Martin: I think. I remember the girls walking around with crackers. Or Bob taking the turtles out of a large container and setting them loose to move around the space. The turtles with—

Q: The turtles with the flashlights.

Martin: Flashlights on turtles is *Spring Training*.



Rauschenberg performing his *Spring Training*, ONCE Again Festival, Maynard Street Parking Structure, University of Michigan, Ann Arbor, September 18, 1965. Robert Rauschenberg papers. Robert Rauschenberg Foundation Archives, New York. Photo: Peter Moore © Barbara Moore/Licensed by VAGA, NY



Lucinda Childs and Rauschenberg with turtles in Rauschenberg's *Spring Training*, ONCE Again Festival, Maynard Street Parking Structure, University of Michigan, Ann Arbor, September 18, 1965. Robert Rauschenberg papers. Robert Rauschenberg Foundation Archives, New York. Photo: Peter Moore © Barbara Moore/Licensed by VAGA, NY

Q: But you didn't really get to know him personally, in any case, until the summer of '66, probably.

Martin: Not even then, really. I was pretty much working with Whitman. I was sort of peripheral in 9 Evenings. I mean, working with Whitman. Then, once people moved into the armory, then everybody got—what do you call it—drafted to do everything. I was soldering tiny plugs onto audio wires.

Q: You mean, in the preparations for those evenings, everybody was doing whatever needed to be done?

Martin: Yes, exactly. We moved into the armory on October 8 and the first performance was October 13. I remember helping Pontus with the catalogue—maybe proofreading or going to the printer—because somehow, then, they discovered that I could spell. I always say, “Because I could spell”—that’s why they asked me to be editor of the newsletter because artists are terrible spellers.

Q: Would that have been the moment when you met Billy? In the preparations for 9 Evenings?

Martin: No, not during 9 Evenings. No, it was the next summer. That was the summer of ’67 because they came out to the Hamptons in the summer of ’67. Yes, the next year. And Olga [Adorno] was really, really pregnant. Then Kristian [Klüver] was born that September. So I think that’s when I kind of met Billy. The next summer I worked again for Christophe, the summer of 1967.

Q: So Maja [Klüver] was born—no?

Martin: Maja was born in May 1965. She was born the day *Oracle* was premiered. Billy went from the hospital to the opening.

Q: Isn't Kristian older?

Martin: No, younger. Two years younger.

Q: I see.

Martin: Then Kristian was born in September '67. The summer of 1967 I was working for Christophe, organizing a second Midsummer series. She invited Bob Whitman to do another piece, called *Shirt*. I don't remember too much about it. It took place in the woods of the artist Constantino Nivola, who was a friend of Christophe's. Terry [M.] Riley and Trisha Brown also did pieces that summer in a tent set up next to Nivola's studio. Toward the end of those performances, Billy—and maybe Bob R. was with him, must have been—came out to Christophe's and I remember sitting on the beach and talking about E.A.T. and what to do. I wasn't working for them yet. Then I came back to the city from working on Midsummer. I worked for Channel Thirteen—again I put my Russian Institute knowledge to use and worked on the Russian Revolution. I was doing research for a few weeks. Soon after this, sometime during the fall of 1967, Billy and [Frederick D.] Fred [Waldhauer] asked me to come to work at E.A.T. as editor of the newsletter. The first issue of the *E.A.T. News* where I was listed as editor was published November 1, 1967. Certainly from then on, I worked for E.A.T.

Q: I know the newsletter started right at the beginning of 1967.

Martin: Right. Billy and Bob R. used the newsletter to get the news out about E.A.T., to articulate the ideas and goals for the organization and start telling artists what would be available to them from the 9 Evenings equipment or technical help they could get. Also the newsletter announced events and activities aimed at recruiting engineers.

Q: And E.A.T. was founded in September of 1966. Do you remember your impressions of that moment and the buildup to 9 Evenings? There was the moment when it was supposed to be in Sweden.

Martin: No, I wasn't part of that at all. I was working weekends for Whitman. I wasn't part of any of that. I know the history now because I've started studying it. But I didn't know it at all at the time. I may have gone to the technical rehearsal, which was in the gymnasium of the Berkeley School in Berkeley Heights [New Jersey] where Billy was living and just down the road from Bell Labs in Murray Hill [New Jersey]. I'm not sure I was there. I've seen so many photos of the day that I feel as if I was there. But maybe not.

Q: Do you remember that press conference and the buildup to the armory show?

Martin: There was a press conference for the 9 Evenings held in the chapel at Bob [Rauschenberg]'s place [Lafayette Street studio, New York]. It was for the artists and engineers

working on the 9 Evenings to talk with the press sometime in September in 1966. I was not really part of the artists and engineers group. I was working with Whitman. But then afterwards, I helped Simone write her piece for *Artforum*. That came out in February of '67. [Note: Simone Forti, then Simone Whitman, "Theater and Engineering: An Experiment, 1. Notes by a Participant."]

Q: That sounds right.

Martin: In that time period, I worked with Simone to put her notes together and help her structure her article. I began to know a little bit about the preparations for 9 Evenings from working with her. I didn't work with Billy on his article, which accompanied hers.

Q: So many of these names are so monumental at this point. With hindsight it means something different to say Simone Forti in that period. Here's another young person who's trying to figure out who they are and what they're doing as an artist and what they're doing in their life. I'm just trying to get a sense of whether you felt in the moment, "Wow, this is a really interesting idea where we have these engineers and artists coming together and I'm in the middle of something—at least really cool and exciting."

Martin: No, during the 9 Evenings there wasn't time for that kind of thinking. There was the need to get things done. Everybody was working all the time. Artists, engineers, friends. Getting everything to work. It was a bit insane, looking back on it, that they planned to have two different artists each night so there had to be new setups during intermission. The engineers had

planned for that to some extent by developing the TEEM [Theatrical Electronic Environmental Module], a modular control system that the different performances could plug into. But there were the physical setups as well. Of course, there was the excitement that the collaborations between artists and engineers was working. The works were being shown to a larger audience than they had ever been before—more than fifteen hundred people each night. But the demands of the performances overrode everything else.

For me, the intellectual excitement came later when it was more the idea that this was something really worth doing. No, I remember somehow, at one point, maybe being out in Berkeley Heights, talking with Billy—maybe when he was talking about my coming to work for him. I remember specifically the idea that the collaboration between artists and engineers not only benefits the artists but also could benefit the engineers and the development of technology. And wow, I remember thinking that idea was amazing. That same sense of something intellectually thrilling—like hearing Castro, right? Always seduced by ideas. And I remember coming back to my apartment on Thompson Street and telling, very specifically, my boyfriend at the time who was an actor, Danny Goldman, how exciting these ideas were and how appealing the possibilities of these ideas were. There definitely was a moral dimension and idealistic dimension to these ideas.

Q: Well, a little charisma too.

Martin: Yes, exactly. Nothing wrong with charisma. But I remember that. I'm not sure exactly where in there. It was certainly after 9 Evenings and maybe even before I came to work for E.A.T. But just somehow, the idea hit me that, "Wow, this is worth doing."

Q: You remember Billy articulating that idea?

Martin: Billy articulating it to me. Billy's idea about saving engineering was one he had had for a long time. He articulated it in some early things he wrote. He had wanted the individual engineer to be more aware of what he/she was doing and to see they could affect the systems they were working on. And then he saw the artist as this vehicle for stimulating change. I think that Bob understood it too and it was important. But I think his interest came from the art side and increasing the possibilities for art and art changing the world. That art would change the world. I think commitment to the engineer as an equal was in it.

One of the things he'd wanted to do early on—as a young person, he was a film nut. He saw films in Stockholm. I think he went regularly to every film that came to Stockholm in the forties—what could come into Sweden during the war and after. He kept a notebook where he entered every film he saw: the title, the director, his rating, and his comments. He was president of the university Student Film Society and was getting from the American Embassy, during the war, Hollywood and avant-garde American films—you know, Maya Deren and the Whitney brothers [James Whitney and John Whitney, Sr.]—to Sweden to show. When he came here, he continued that interest in film. He said he immigrated to the United States because he wanted to

see what it looked like, having seen it in the movies. He always had this insatiable curiosity about what things looked like.

When he was at the Kungliga Tekniska högskolan [Royal Institute of Technology, Stockholm] and studying electrical engineering, for his senior thesis he made a film—an animated film—*Motion of Electrons in Electric and Magnetic Fields* [1951]. He and his friend, Nils Hugo Geber, who became a film historian and theorist, used Disney-type cells to show the little electrons moving along a vacuum tube and then being deflected in various patterns by the electrical and then magnetic fields. His professor was Hannes Alfvén, who had won the Nobel Prize for physics. He accepted Billy's film. Many years later, Billy was very proud because Alfvén wrote a science fiction book, *The Tale of the Big Computer* [1968], in English. He wrote it under a pseudonym. Then when it came out in Sweden, he sent Billy a copy of the book with the dedication, "Thank you for your film." So it was unique.

Q: Is it mentioned in the book?

Martin: Not in the book, no.

Q: So Olof Johannesson is the pseudonym.

Martin: Right. It was about the breakdown of the great computer running the whole society. So Billy was very interested in educational films. When he first came to this country in 1954, he tried to sell the idea of producing educational films on a college level. He had made an English

translation of the *Motion of Electrons* film to show in the U.S. and tried to get his idea produced. He went to Encyclopedia Britannica, who was the major maker of educational films, and they said, “No, no. We do grade school and high school films. It will never work on the higher level.” I think he went to Hollywood and talked to people there too.

He had this interest in working with education, with technology. As he began to work as an engineer, he increasingly realized the limitations in many of his fellow engineers’ thinking and wanted to break them. He says at some point—I don’t remember where he’s written it—he began to see the artist as a vehicle, this kind of revolutionary vehicle. That the artist, in working with the engineer, could change the engineer’s idea about what he or she was doing. I think that idea he had was very strong with him. I think Bob liked it and picked up on it. But I think Bob was very much still in the art world.

Q: Saving engineering—you mean that for him, engineering was solely functional? It was kind of perfunctory?

Martin: I think Bob [Rauschenberg] understood the danger of artists and engineers being so separate from each other—as he said, groups unrealistically developing in isolation from each other—and he was never an artist who stuck only to paint and canvas. He was always reaching out into the world around him and, in his collaborations with Billy, he could see the possibilities the technical world offered but also how far away it was from the art world.

These things are never really spelled out but I think the technical community and technology was more monolithic in those days. The individual didn't have access to the system. The wording that he and Bob used was about making technology more accessible to the individual and for the individual's enjoyment—individual enrichment and pleasure.

Here are the aims they collaborated in writing for the 1967 press conference: “Maintain a constructive climate for the recognition of the new technology and the arts by a civilized collaboration between groups unrealistically developing in isolation. Eliminate the separation of the individual from technological change and expand and enrich technology to give the individual variety, pleasure, and avenues for exploration and involvement in contemporary life. Encourage industrial initiative in generating original forethought, instead of a compromise in aftermath, and precipitate a mutual agreement in order to avoid the waste of a cultural revolution.” [Note: Published in *E.A.T. News* (New York) 1, no. 3 (Nov. 1, 1967), p. 5.]

Those three incomprehensible goals of E.A.T. that they wrote. I'm being facetious. They were not incomprehensible but they certainly had Bob's wonderful, complex language. Billy later said that Bob essentially wrote the first and third of the aims and he wrote the second one. I recently noticed that they don't say anything about making art. The aims really were about both bringing different communities—the art community, the technical community, and the industrial community—in the society to work together. And also about empowering the individual. That the development of technology could empower the individual and improve each individual's life. That was the idea that they agreed on. Billy saw the artist as the supreme individual in the sense of not just making art—that wasn't interesting—but being the person who took responsibility for

his or her own work. With the artist, there was never any kind of apologies like, “Oh, if I had more time, the art would have been better.”

Q: Can I read you a quote? This is the Japanese 2003 catalogue on E.A.T. [*E.A.T.—The Story of Experiments in Art and Technology*]. Billy has this prefatory essay and what you just said reminds me of—I think this is what you mean. Maybe this is what you’re thinking of. This is Billy: “At the time, I was doing a lot of thinking about the development of the new technology and our ability to affect it in ways more positive for the individual. In an article I wrote in 1959, ‘Fragment on Man and the System,’ I argued that individual engineers and scientists have total responsibility for the technology he or she is creating in the direction technology takes. Engineers and scientists have to be aware that technology is not on one unchangeable path. Its direction can be constantly changed and it can go in all directions. But the engineer or scientist goes through years of formal training in the language and practice of science. He can make a discovery or break through that and expand scientific knowledge but his contribution still remains within a mutually agreed scientific system. Art, on the other hand, is outside any such system. An artist’s ideas are capable of transcending or radically expanding the boundaries of Western thought. For me, the act of [Marcel] Duchamp choosing the snow shovel is the best example of one person’s ability to shatter classic boundaries in art and thinking.”

That sounds like that’s almost what you were talking about.

Martin: Yes, absolutely. Absolutely.

Q: For him, that's part of the attraction of the collaboration, where you put the engineering next to or in conversation with the art. It allows the scientist or the engineer to hook into that outside system.

Martin: Or to understand that the way the artist works could prompt the engineer to question or expand his own system. Ask different questions of it. See different possibilities in it. I don't think Billy ever thought that the artist and the engineer working together was going to make any kind of scientific discovery. He always said, "You're kind of working on a lower level." You may be at the forefront of engineering technology and ingenuity but you're not at the forefront of knowledge. But the possibility of asking different questions of what you're doing was the idea of the value of the collaboration the engineer could have with an artist. The engineer could make decisions or devise things and use his skills in ways he hadn't considered before. Fred Waldhauer is one of the engineers who most—besides Billy—most got it.

He saw some of the same confining limitations of the developing technology that Billy saw and always said, you can't get out of the technological world but you can make it better. It was Fred who coined what I've always thought was one of the best descriptions of the artist's role in this: "In designing and building the future, we are all amateurs, but the artist may be the best amateur." To go back, Fred had been a great fan of jazz during his days at Cornell [University, Ithaca, New York], traveling to New York City to go to the clubs. He in his own work at Bell Labs worked on the advanced T1 digital switching system. In the seventies he took time off and wrote a very technical study of feedback, which was of course one of the electronic phenomena that engaged David [E.] Tudor in his performance and composition. He was very close to

David—built the Proportional Control System for him for 9 Evenings—and worked with him in developing the sound system for the Pepsi Pavilion [Expo '70, Osaka, Japan, 1970]. And in the 1980s he developed the first digital hearing aid. His mother was going deaf so he had some idea of the problems. He tells that one day he was driving in his very rattley Toyota and listening to music on the radio and he realized that just making things louder didn't help. You still couldn't hear the music. With his knowledge of digital technology at Bell Labs, he devised the first programmable hearing aid that would raise only the frequencies that the person was deficient in. He individualized the hearing aid.

Q: He was one of the other founders of E.A.T.

Martin: E.A.T., right. So that's sort of an example. I think the irony that, since certain facets of the technology have gone that way of breaking down monolithic technological systems—and with the cell phone, with the personal computer, the internet—the individual has gotten access to movie-making, music-making, et cetera, and communication. We have access to vast new sources of information. Some of the ideas stated in the early aims of E.A.T. have come to fruition. Technological development has brought a new set of problems facing the individual. God forbid your utopia comes true. Look where we are.

Q: Yes, look where it's taken us.

Martin: Exactly. But that was the idea. Certainly things have changed for the artist in relation to his or her access to new materials. In those days, an artist who wanted to work with plastics—the

industry would say, “We can give you a truckload but you can’t have one or two pieces of anything.” They were shut out from access to what Billy could see were developments in materials, developments in communication technology, this kind of thing. That was the idea—that the artist could get in through this human connection with an engineer, working with an engineer who had the knowledge. There was no reason for the artist to acquire this knowledge or training. This was the domain of the engineer who had spent his life learning his profession. They were artists, after all.

Q: Right. The payoff for the engineer, then—I’m just re-reiterating what you were saying—would be really expanding and shifting and making you question your own thinking about your process.

Martin: What you’re doing.

Q: Not necessarily the expectation that the work I’m doing with Rauschenberg or Whitman, or whatever particular artist, is going to invent some new, earth-shattering technology in itself.

Martin: Right.

Q: Were there things that they invented for an art collaboration that then had payoff in the world of commercial—?

Martin: Not that I know of. One of the things I think about—well, there was one phosphor that they used in Steve Paxton's piece in *9 Evenings* that an engineer wrote up later in a technical journal. It would change color with heat on the skin. It could be used to detect the path of laser beams operating above the visible spectrum. Certainly this development of FM transmitters. Billy and his colleagues at Bell Labs first started it with Yvonne Rainer, when they built this little FM transmitter that transmitted the sound of her breathing as she danced.

Q: *At My Body's House* [1963]?

Martin: Right. That may have been the first wireless FM transmitter. Then the engineers developed a wireless FM transmitting system for *9 Evenings*. They designed and built wireless amplifiers, transmitters, coders and decoders, et cetera—a whole stage system that ran on batteries. They called it the TEEM system. But nobody thought about patenting or commercially developing it. Then wireless technology for the stage developed in the trade. So now what? You can have stage production with fifteen or twenty different wireless mics on stage. The engineers working on *9 Evenings* developed the equipment out of this need of the artists to do those certain pieces. But it wasn't seen, necessarily, as something you would go ahead and pursue because that wasn't what they were working on day to day. The engineers designed special equipment for the *9 Evenings* but it was very much their response to the needs of the artists in performance. For example, Fred Waldhauer's Proportional Control System that allowed him to move sound from speaker to speaker for David Tudor's piece.

Q: Right. Well, they didn't know how to commercialize it then.

Martin: More they weren't interested. You were at Bell Labs. People weren't entrepreneurs at that time. Also all the patents at Bell Labs were available to be licensed by others at that time. It was one of the conditions of the government support of AT&T as a monopoly.

Q: Bell Labs is the other part of the story that is fascinating to me. He talks about it a little bit here and there—the question of why did Bell Labs let these engineers—at one point, talking about 9 Evenings in one of the essays he co-wrote with you, he says something like, “The dozens of engineers who worked on this piece put in something like eight thousand hours working.”

Martin: Bell Labs counted things in man-hours so it was something like eight thousand man-hours of engineering. Right.

Q: Or these multiple pieces. It makes you start wondering, well, what was Bell thinking, letting these people work that many hours on performance pieces?

Martin: Well, number one, all the engineers worked on their own time. It was all on their own time—nights and weekends—and later when we moved into the armory, in the days before the performances, the engineers took vacation time.

Q: It was all vacation time?

Martin: Yes, people took vacation time. Bell Labs didn't officially support the project.

Q: They weren't giving you time.

Martin: They weren't. But, that said, the culture at Bell Labs was certainly that the level of members of technical staff, like Billy—the researchers—came and went as they wanted and could choose to work on things that they wanted. There was a great amount of latitude and freedom and the researchers could give their TAs, or technical assistants, jobs to do. Later, Billy, in the 1990s, asked John [R.] Pierce, who was his supervisor and head of the department, “You saw that this was taking time away. Why did you let it happen?” And Pierce said, “Well, it was such a positive experience for these guys that to have stopped it would be a very negative thing.” The negative fallout would be—so there was kind of enlightened leadership at the Labs. Although they didn't officially sponsor the 9 Evenings, John Pierce and others at that level understood that this was a positive experience.

Q: My sense—so tell me, correct me if I'm wrong—is that Billy's first formal collaboration with an artist was the *Homage to New York*—

Martin: Yes, that's correct.

Q: —the construction he built, the self-destroying installation he built with Jean Tinguely. Then it was through that—because Rauschenberg came into that and built the little mascot—

Martin: [*The*] *Money Thrower* [*for Tinguely's H.T.N.Y., 1960*].



Robert Rauschenberg
*The Money Thrower for
Tinguely's H.T.N.Y.*, 1960
Electric heater with
gunpowder, metal springs,
twine, and silver dollars
6 3/4 x 22 1/2 x 4 inches
(17.1 x 57.2 x 10.2 cm)
Moderna Museet,
Stockholm
Donation 2005 from Pontus
Hultén

Q: *Money Thrower*—that he met Rauschenberg and started working with Rauschenberg. Do you have a sense of how Billy met Tinguely? How did he first start getting involved in the art world?

Martin: He says that he may have met Tinguely in Paris. Billy graduated from Kungliga Tekniska högskolan in Stockholm and then he spent a year as a technical assistant, *stagiaire*, with Thomson-Houston [Electric Company] in Paris. 1952–53 he spent in Paris. Pontus may have come to Paris during that period. Tinguely was part of the group at the Denise René gallery [Paris]. I think Pontus knew Tinguely or got to know Tinguely. Billy says he met Tinguely and Pontus introduced him in Paris as the “man who made anti-television sets.” It might not have been that year but, somehow—because Pontus worked to do the show, *Le Mouvement*, in ’55 with Denise René. Also it was during this time that Pontus invited Tinguely to Sweden. It was Pontus who wrote Billy in late 1959 and said, “Tinguely’s coming to New York. He has a project. Could you help him?”

Q: I got that. Well, that's what I was wondering. And Billy knew Pontus from Sweden?

Martin: From Sweden. Pontus was part of the Student Film Society at Stockholm University.

Q: I see. So it all goes back to film.

Martin: To the Student Film Society. Billy, as he said, walked across town from the engineering school to the humanities faculty to join the Student Film Society. Pontus and also the artist, Öyvind [A. C.] Fahlström, were members. The Film Society was one of the non-communist, radical, or progressive groups in Stockholm at the time—the films they showed and the programs they did. That's how Pontus and Billy met.

Q: That initial instruction from Pontus's letter was just, well, "He's in New York. He may need help. Go ask him what he needs."

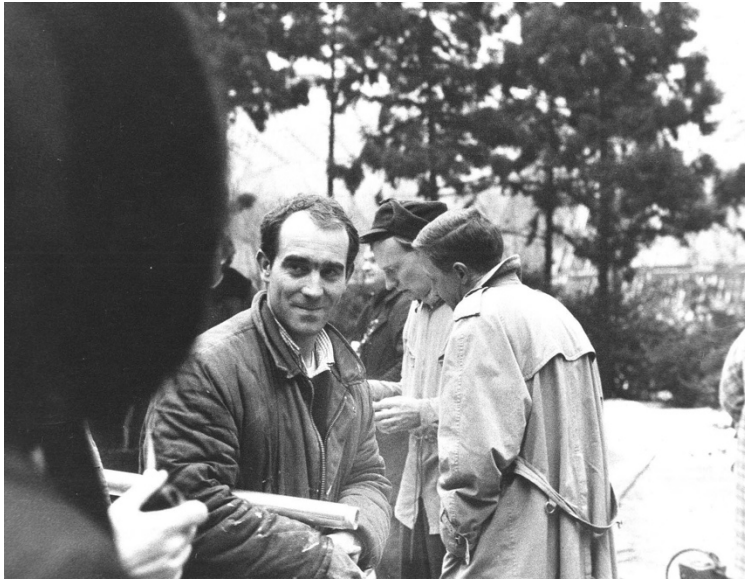
Martin: Exactly. Exactly. Billy met Jean at the Staempfli show. Jean had a show at Staempfli Gallery [New York], of his *Méta-matic* drawing machines. Pontus came to New York in September of '59. He didn't really know anybody. I know he knew [Samuel L.] Sam Francis and so he met Sam Francis and Sam Francis was living in the same building and on the same floor as Alfred Leslie. Leslie was just finishing up making the film *Pull My Daisy* [1959]. So they all met each other. Billy talks about walking through Washington Square Park and seeing a poster for *18 Happenings in 6 Parts* and saying, "What's this ridiculous thing?" He and Pontus never went. But recently I found a list of people who had tickets to Kaprow's piece and Pontus is on the list.

Now whether he went or not, who knows? So it's one of these strange things. Whether Billy met Bob at the Staempfli Gallery, whether Bob was at the opening—it's highly likely—but who knows? I never asked Billy how he met Bob. I could shoot myself. Recently, I realized I never said, "When did you meet Bob?" I'm assuming that it was at this time. Somehow Bob knew Jean and, again, I wasn't quite sure how.

But recently, Melissa Rachleff Burtt, who is researching a show on artists-run galleries for NYU Grey [Art] Gallery and is looking at a series of interviews Billy and I did in 1990–91 for a projected book on art and artists, 1945–1965. [Note: Book never completed; several of the interviews will be published in Burtt's forthcoming exhibition catalogue, *Inventing Downtown: Artist-Run Galleries in New York City, 1952–1965*, 2017.] She found an interview Billy and I made with Dore Ashton in 1990–91, where she said that Tinguely asked to meet Bob and that Dore took him to Bob's studio. Dore was then a curator at MoMA and had arranged for Tinguely to make the self-destructive sculpture in the garden of MoMA. So Tinguely met Bob then, and Bob came to visit them when they were working in the garden and probably met Billy at this time.

Q: The way he narrates it in the pieces I've seen is that Rauschenberg was in the habit of dropping in to see how their work on the *Homage to New York*, which they were building in the garden of MoMA, [was progressing]. My impression from the way he wrote it was that Rauschenberg knew Tinguely and so came by to see their work on this thing and then met the guy who was the engineer who was helping him.

Martin: Right. There's a David Gahr photo of Bob and Billy talking. They're in the background and Jean's in the foreground and you sort of see them talking. So, exactly.



Jean Tinguely, Billy Klüver, and Rauschenberg at the installation of Tinguely's *Homage to New York* in the garden of the Museum of Modern Art, New York, March 17, 1960. Photo: David Gahr

Q: That's my impression from the way he writes it.

Martin: Exactly. I think so.

Q: And because they do write—there's also the collaborative memory piece—they write a lot about their early work together. I feel like if there had been an origin story—that we met in the gallery, or we met in a coffee shop—that they would have told it in one of those pieces.

[Note: Klüver and Rauschenberg, "Art in Motion—A Combined Memory." *Konsthistorisk tidskrift/Journal of Art History* (Stockholm) 76, nos. 1–2 (2007). Originally published as "Art en mouvement: Souvenirs conjugués/Kunst in beweging: Een gekombineerde herinnering." In *Le*

Moderna Museet de Stockholm à Bruxelles/Het Moderna Museet Van Stockholm te Brussel. Exh. cat. Brussels: Palais des Beaux-Arts, 1981.]

Martin: Right, right.

Q: And the way he narrates it, it makes it sound like it's just a happenstance. He's sitting there working with Tinguely and Rauschenberg comes in.

Martin: Exactly. That's what I've decided probably happened.

Q: You don't always remember the first time you meet people.

Martin: No, it's true. But the point is that I never asked. Makes you crazy sometimes—the things you never asked.

Q: Well, there always are those.

Martin: Right. Exactly. That's why you do oral history.

Q: And that's why we're doing oral history. Should we continue along this stream, or should we start talking about E.A.T.?

Martin: I'm trying to think. Billy's contribution to Tinguely's piece was the timing pieces. Billy said Jean had said that it really changed his work. He started doing bigger pieces and not necessarily technical pieces. That was a contribution—that it could be done automatically, not just mechanically. But that you could have events triggered over time was probably Billy's contribution to the collaboration. Although he was active in getting the requested bicycle wheels—taking Tinguely to the Newark [New Jersey] dump and buying other equipment and chemicals that Jean requested.

Q: And Rauschenberg, he had already been interested in this element, which is why he was primed for the collaboration. But the *Money Thrower* had a timing element to it.

Martin: It seems it was integrated into the machine as one of the events triggered by the timer circuits that closed. So a circuit closed and I guess there was a resistor that heated up. Maybe Billy told him to put a resistor in there. Because the resistor would overheat and spark. Or it was a spark. I asked Per Biorn about this and he said that a simple overheating resistor, like the ones they used on some of the other elements of *Homage*, would not have been hot enough to set off the gunpowder. He would have had to have a resistor hooked to some kind of heating coil that would heat up and glow and that would be enough to set off the gunpowder.

Q: He had some kind of heat element that made the gunpowder go off.

Martin: Maybe it could be a heating element. So when the timer flipped the switch, it turned something on that made the gunpowder explode and blew the—

Q: —the silver dollars up in the air.

Martin: Well, it blew the coils apart. As they went apart, the silver dollars went flying.

Q: But you think it was actually physically connected to the Tinguely piece.

Martin: Yes.

Q: That wasn't clear to me.

Martin: Because there's a plug. Where would it plug into? It had to plug into something. Oh, I never asked him about that, did I? Hmm.

Q: Sorry.

Martin: No, no. Christine Frohnert, who's the wife of Thomas Buehler, who's been a curator for Bob since the eighties—a physical curator, installing things [note: at the time of the interview Buehler was Collections Manager]—she and her business partner are conservators of technical works. They've just done a study, or are working on a study, of *Homage to New York* and they've followed the photos and the reports. But this is a very interesting thing to ask them. Are the engineers still alive? Harold Hodges is still alive.

Q: Is he still alive? That would be interesting.

Martin: He's been blind for many years. But, you know, this narrowing of his sight has been going on for a long time. But he stays active on the internet, with voice recognition and the computer reading web pages to him.

Q: Oh, yes. Well, that's going back a long way but he might remember.

Martin: Yes. It's an idea. Harold. He's a very nice man.

Q: I imagined if it was—just logically, if it's a mascot, if it's a pet, then it might be on a leash.

[Laughter]

Q: It makes perfect sense for it to be connected to *Homage*.

Martin: But how? Did they have a strip? Did they have different outlets? How the hell did they do it? How did the timer circuits work? They probably had something with multiple plug-ins because it had to have nine events. How interesting. Nobody's ever thought about that—wiring the timer.

Q: This is why we're doing oral history. Maybe we'll, down the road, get an answer.

Martin: Absolutely. Absolutely.

Q: Well, but that would almost mean that would be not an overtly entered into but a de facto collaboration. That would be Billy and Bob actually working together.

Martin: Absolutely. It would make sense that maybe Bob talked about doing something. Billy said, “Well, if you do it, it needs to plug in. And you’ll be one of the events.”

Q: Okay. Well, this is a mystery. We’ll have to do some more research.

Martin: Wow, a total mystery. Absolutely. Absolutely.

Q: I had thought that it wasn’t connected and he had just arranged the heating element in a way that he knew that after seven minutes, it was going to get to whatever the temperature it would have been that would have set off the gun.

Martin: That’s interesting. But no, if you look at the picture of it, actually, there’s a cord.

Q: There is? I don’t remember that.

Martin: Here’s a photo of it in the big retrospective catalogue [*Robert Rauschenberg: A Retrospective*. Exh. cat. New York: Solomon R. Guggenheim Museum, 1997]. See, there’s a

cord. And it's painted white. There is a cord. Billy says something about, "Bob waited around all day to have his *Money Thrower* connected."

Q: You think it plugged into the machine, not just into a power source?

Martin: Interesting idea.

Q: I thought it looked like it just plugged into the wall. Then that would heat up, turn on whatever the heating element was. I don't know.

Martin: Billy does write that the *Money Thrower* went off in a big flash. It's really interesting the questions you don't ask.

[END OF SESSION]

Transcriber: 3PM

Session #2

Interviewee: Julie Martin

Location: Berkeley Heights, NJ

Interviewer: Brent H. Edwards

Date: August 5, 2013

[CONTINUED FROM SESSION #1]

Q: Let's go back to the founding of E.A.T. and your involvement. Were you aware when it was founded after 9 Evenings?

Martin: No. Actually, it was founded during the preparations for 9 Evenings, before the performances.

Q: Oh, right. It was September.

Martin: Actually, you might want to look at an article I wrote for the Foundation for Contemporary Arts' [note: formerly Foundation for Contemporary Performance Arts] fifty-year catalogue—sorry. I'm starting to quote myself.

Q: Go right ahead.

Martin: You might want to get a copy of that catalogue.

Q: I think I have it.

Martin: You have the catalogue?

Q: Is it the [*Artists for Artists:*] *Fifty Years [of the Foundation for Contemporary Arts, 2013]*?

Martin: Yes, fifty-year. It seems like E.A.T. was founded once the group decided to do the performances in New York. It was for tax-exempt purposes, really, to allow people to contribute money and get a tax deduction. It was founded September 26, 1966, before the 9 Evenings, to function as a tax-exempt organization for donations to the 9 Evenings. But of course, it takes a long time to get a tax-exempt certificate from the IRS [Internal Revenue Service] so the Foundation for Contemporary Performance Arts continued to be what we now call a fiscal sponsor.

Q: Right. But that was part of the reason behind the founding of E.A.T.?

Martin: Right. It was to make an organization that could accept tax-exempt donations.

Q: Even before the event, there was not just [thinking] in terms of funding the event but thinking longer term. A lot of the talking at that point was about the equipment: “We built all this equipment for these artists and it should be shared.” This idea of working with engineers—this was such a great idea, it also should be shared. That we want to create a network because that’s the other purpose that seemed obvious to me. How are engineers going to get in touch with

artists? Here's an organization that's going to actually get people in contact. Even before 9 Evenings, they were thinking that way.

Martin: Exactly. The idea was: "This really is a success and artists and engineers can work together. Let's make it available to other artists." Initially it had to do a lot with the equipment. If you look at some of the early newsletters, they're talking about using the equipment that's available. There was also this overriding idea about artists and engineers working together.

Q: You were away. This was when you went to Canada.

Martin: I went to Canada sometime after 9 Evenings. As I've said, I was mostly working with Bob Whitman during the months before the 9 Evenings and wouldn't have known about the planning, fundraising, et cetera. I remember I worked with Simone on turning her diary and notes kept during the preparations for the 9 Evenings into an article for *Artforum*, "Theatre and Engineering: An Experiment, [1.] Notes by a Participant." It accompanied an article by Billy, "[Theater and Engineering: An Experiment, 2.] Notes by an Engineer." They were both published in the February 1967 issue so we must have worked on the article in November or early December at the latest. It must have been after that that I went to Canada and came back in the spring of '67. I worked for CBS in the spring and then worked for Christophe de Menil on the second summer of her Midsummer performance series. It was during this summer that Billy and Olga came out to the performances and I remember a meeting on the beach to talk about E.A.T. I don't know whether Bob R. was there or not.

Then that fall, I worked for Channel Thirteen on a show about the Russian Revolution. I remember I came in fresh from working on Long Island. Those were the years of short skirts. I think there were remarks at Channel Thirteen, “Who is this woman that’s wearing these short, short skirts?”

[Laughter]

Martin: I didn’t quite fit in but I was helping with research on their program on the fiftieth anniversary of the Russian Revolution. Then the same fall I got involved with E.A.T. That’s a good chronology—a personal chronology. Then in October, I was asked to be one of the hostesses for the E.A.T. press conference at Bob Rauschenberg’s house. That summer Billy and Bob had been introduced to Theodore [W. “Ted”] Kheel by the collector John Powers and Ted began to work with E.A.T. He brought cooperation with organized labor into the mix and suggested a large formal press conference to announce E.A.T.’s collaborations with the technical, industrial, and labor communities. I was around enough to be part of the press conference. Bob silkscreened images of clouds in blue on these paper dresses that the women wore for the festivities. There was an exhibition of works incorporating technology on several floors—*Oracle*, some neon works, and the press conference in the chapel, with representatives from businesses, Herman [D.] Kenin from the [American Federation of] Musicians union, Senator Jacob [K.] Javits, John Pierce from Bell Labs, et cetera, gave talks.

I did take part in the press conference and I may have already been working for E.A.T. by that time. And then a few weeks later I was in one of Bob R.’s performances at the School of Visual

Arts [New York] called *Urban Round* [1967]. I think Les Levine did a piece there too and Simone Forti did *Slant Board* [1961]. For Bob's piece I remember that there were these wooden boards and you partnered with two other people and sometimes you stood with the board and sometimes you were carried on the board. I think you first stood in the audience area and read something from the paper backwards and when you were finished, you came down to the area with the boards. Maybe when you were not reading you got carried—I can't remember the instructions. I have seen a photo of the performance with a lot of people and boards in a small space and I recognize myself, with, as I say, longer hair and shorter skirts than today.



Rauschenberg and Julie Martin holding boards behind them in Rauschenberg's *Urban Round*, Fall Gallery Concerts, School of Visual Arts, New York, November 1967. Photo: Peter Moore © Barbara Moore/Licensed by VAGA, NY

Q: The press conference—was that at the building on Lafayette Street?

Martin: The building at 381 Lafayette Street.

Q: Oh, when you went to the press conference. Okay. Who were you still in touch with? And who ultimately asked you to work for E.A.T.?

Martin: Well, ultimately Billy and Fred. I remember meeting Billy and Fred, who asked if I would come work for them to be editor of the *E.A.T. News*. By that time, they had the loft at 9 East Sixteenth Street and Billy had put out a couple of issues of the newsletter, I'm pretty sure. The first one I worked on—where my name appears as editor—was volume 1, number 3, published on November 1, 1967. But I recently saw that in the previous newsletter that came out June 1, 1967, there is a note that that issue had been put together by Billy, Fred, and Bob R. and with the next issue I would take over as “regular editor.” So I must have been on board or planning to be on board during that summer.

In the spring of '67 I was working with Merrill Brockway at CBS and we did one of the segments of his documentary on Bob and on the *Revolvers*. In those days, you were sort of around. Something happened, you would help or you would maybe volunteer, or you know to go to something.

Q: The office was on Sixteenth Street, is that right?

Martin: Right. In a loft on the sixth floor, 9 East Sixteenth Street.

Q: How big was the E.A.T. office?

Martin: Huge. It was a 5,000-square-foot loft. In the front they built a little partitioned-off office. It was like the administrative office. Then they built a wall almost all the way across the back. Maybe not a third but a fourth of the way into the space. There was a largish opening in the wall. All the technical stuff was in the back with storage and workbenches and things.

Q: You mean the things that people had built for particular performances were stored there?

Martin: No. Just mainly equipment that had been built for 9 Evenings was stored there. Other artists were able to use this equipment. I know Carolee Schneemann used some of the equipment for her performance, *Snobs* [1967]. I remember Max Neuhaus also did something with the equipment.

Q: Did you have a kind of inventory? Did people come in and say, "I'm looking for a transistor"?

Martin: No, I don't think so. There was a conscious decision not to have an E.A.T. laboratory because Billy and Fred thought it could not serve the variety of artists' needs and it would become outdated very quickly. So the emphasis was on recruiting engineers working in industry and industrial laboratories to work with artists. Thus the artists would be in touch with people working with up-to-date technology in their field. The equipment that was at the E.A.T. loft was the equipment developed for 9 Evenings that was made available to any artist who wanted to use

it. Ralph Flynn was soon hired to be in charge of the equipment and to help with artists' requests. I did an interview with him recently so there might be some information there.

Q: He also worked there?

Martin: He had been at Bell Labs and then he came to E.A.T. He was a technical assistant at Bell Labs and then he came to E.A.T. as being in charge of the technical equipment. I'm not sure of his title. The titles we gave people, who knows? But he had worked closely with Fred Waldhauer and was familiar with the technical equipment at 9 Evenings and at E.A.T. he would help the artist with technical problems.

Q: How many people actually were working there when you started working?

Martin: Ralph. Susan Hartnett, who had worked for Bob and who was running the office as general administrative assistant. And me. I think that was it. Oh, no. Maybe a secretary. Maybe Rose Petrock was a secretary. Later she married Ralph. But that was it.

Q: And Billy. Was Billy actually working there?

Martin: No. The idea was both Billy and Bob would go back to what they were doing before. They were both on the board of directors. Billy and Fred came into the office a lot and worked on finding engineers to answer artists' requests. We began to have an open house on Sundays

where the artists and engineers would come and meet each other. Billy was very active but they hired somebody to be the head of E.A.T. But that didn't last very long.

Q: An engineer or an artist?

Martin: No, no. An administrator. Francis [A.] Mason who came from USIA in Washington. Then he went to Steuben Glass [Works] and was working for [Arthur A.] Houghton [Jr.]. He was an arts administrator. But he just wasn't quite rigorous enough for what Billy had in mind. I think that Billy's interest was in collaborating with artists. He really wasn't interested in going back to Bell Labs.

Q: Did he leave Bell Labs in this period?

Martin: He left in '68.

Q: So not long thereafter.

Martin: He went back and then they were moving his laboratory from Murray Hill to Holmdel [New Jersey]. His department moved to Holmdel, about an hour south of Murray Hill, so it would have meant moving his whole family to a new location—further from New York too. A whole commitment to a new situation.

Q: What was he doing after he left Bell?

Martin: He became president of E.A.T.

Q: Then he was coming in and actually working there. Okay. So there was an interim period.

Martin: Right, exactly.

Q: I see. Because I had imagined him coming into the office and then I wasn't sure whether he had.

Martin: Yes, he came in frequently from the beginning, but from 1968 on he was full-time there.

Q: Their idea at first—even before you got there they were having those Sunday gatherings, the meet-and-greet sort of gatherings.

Martin: Yes. That was one of the ideas—to get artists and engineers to meet and start talking together.

Q: Did you put together something like—I guess now you would say a database or a list of dancers, choreographers, painters, on the one hand, and engineers—

Martin: We had members, so we asked people to sign up.

Q: Did they have to pay dues?

Martin: No, there was no idea of paying for this service. It might have been a good idea from a fundraising point of view but Billy and Bob wanted E.A.T. to be open and reach as many artists as possible. You didn't want to have the artist pay for something. But there's something really funny in an early newsletter. In one of them Billy wrote, "If you want to join, please fill out the artist membership form. Names written on little slips of paper aren't useful."

[Laughter]

Martin: The idea was that people became members. They would sign up and the artists would become members. Engineers would sign up and become members as well. The engineers were encouraged to become members and on their membership form to give information on their technical field and their interest in working with artists. Then any member could, of course, ask any question they wanted. The effort in the beginning was to attract engineers. That the artists were interested was shown at the first E.A.T. meeting that they held on November 30th where they had a panel of artists and engineers who'd worked on 9 Evenings. They had made a general invitation to the art world and something like three hundred people showed up. You've probably seen that photo.

Q: Yes. It's in that book about E.A.T.

Martin: Right. The artists were ready. I mean, they had questions and projects. The first efforts of E.A.T. were to attract engineers. And also the idea of industrially-sponsored collaboration was an idea which we pursued—to have artists-in-residence or have industry take responsibility for supporting collaborations in their area. But most important was to attract engineers.

Q: How did you get engineers?

Martin: Well, open houses were one way. Billy gave talks at universities and colleges. We visited industrial laboratories like IBM and several places like that. We generated write-ups in technical magazines. We began a lecture series on various aspects of technology for artists and invited engineers and scientists from many different places to lecture. I think Billy loosely had in mind that E.A.T. could function like a professional engineering society, like the IEEE [Institute for Electric and Electronic Engineers] with a membership and chapters. He did try to have the IEEE organize a technical specialty subgroup, Engineering in Art, but they never did it.

One thing I have to add is that there was an immediate response to the idea of E.A.T. as an organization to help artist and engineers to work together from all over the United States and all over the world. It seemed to be an idea whose time had come. Billy and Bob got requests from friends in other places asking if they could open E.A.T. groups in their cities. They said yes immediately and, within two years, about twenty E.A.T. local groups were active, run by local artists and engineers and pretty much independent of us.

To go back to the pursuit of engineers, in the spring 1968 came a new opportunity to attract engineers. Pontus Hultén had been invited to make an exhibition at the Museum of Modern Art, *The Machine as Seen at the End of the Mechanical Age* [1968–69], that began with Leonardo [da Vinci] and went into the present. Pontus asked Billy and E.A.T. to find new works—contemporary works—that incorporated technology. Billy saw this as an opportunity to attract engineers. E.A.T. sponsored a competition in which the prize would go to the engineer for “the best contribution by an engineer to a work of art made in collaboration with an artist.” The competition was announced in the *New York Times* [November 12, 1967] and several of the technical journals. Part of the announcement was that Pontus would choose works for his *Machine* show from the works submitted. Also E.A.T. offered to match up artists and engineers to work on projects if they wanted to.

Q: It was very successful.

Martin: It attracted engineers and began to make publicity for this idea. By the summer of 1968, we received so many applications and works of art to the competition, more than 160 works, that once Pontus had chosen the few works he wanted for his show at MoMA, we decided to show all the submitted works at the same time. We approached the Brooklyn Museum and they had space available—this would never be possible today. Bob showed *Oracle* at MoMA. He didn’t have a work at Brooklyn but he came up with the title of the exhibition, *Some More Beginnings*[: *Experiments in Art and Technology* (E.A.T.), 1968–69], and helped Billy and me come up with the idea of a completely non-hierarchical catalogue. We printed it on a huge web press in Denville, New Jersey. In those days they made screened images called veloxes that were used on

the printing plate so we had two veloxes of each work made, one with the art-type information as a caption and the other grayed down with the technical information about the work superimposed on the image. Then Billy and I laid all these veloxes out on a long roll of paper at the printers and cut every 11 inches (the width of the page). Some artists were upset when the image of their piece was cut in half, but every work was treated the same and it was non-hierarchical.

Q: You were there when the competition was announced?

Martin: Yes, I was already working there.

Q: Financially, how was it funded? I assume that the staff is getting paid at this point?

Martin: Well, at this point.

Q: I hope.

Martin: We got a grant from the New York State Council on the Arts [NYSCA]. It was one of the first grants. John [B.] Hightower, who was Executive Director of NYSCA—who just died recently—was a fan. In those days, apparently it was really easy to apply for grants because we got one. We also got a grant from the Rockefeller Brothers Fund.

Q: That was right at the beginning. I think I saw something in the E.A.T. catalogue that was in that period. It would have gone much further than it would have today. It was on the order of eight thousand dollars or something like that. It was a relatively modest grant.

Martin: We were never really that [well-]funded. I remember that the Rockefeller Brothers Fund turned E.A.T. down for a second grant because we served all artists who came to us. They thought we should be more selective. Another fundraising thing we tried to do was industrial memberships, so we got some money from that.

Q: Does that mean that a company like Bell would pay a membership fee?

Martin: They would become a member for maybe a thousand dollars a year. I think we tried that. We also tried to have a membership campaign for individuals and the only person who responded and became a member was Dr. Frank Stanton from CBS. I remember that Billy did fundraising to specifically raise the money to pay the prize for the engineers in the E.A.T. competition. The Brooklyn show was put together with a lot of volunteer work from the artists and engineers involved. I think just at the time when things were getting rough, during the time of the Brooklyn show, the Pepsi project came along and they gave us some money to develop a proposal. Then the next two years were funded a lot by working on the Pepsi Pavilion. But we were doing a lot of other projects and activities besides.

Q: That's one thing I was wondering. That was also in the book about the Pompidou Center in Paris. I was just looking at that and it was reminding me that E.A.T. was asked to design this

screen that was going to go on the outside of the Pompidou Center. It made me wonder—the Pepsi Pavilion too—whether E.A.T. was not just a kind of clearinghouse, putting X in contact with Y—artists and engineers in touch—but was actually an organization looking for work. That makes it sound like E.A.T. was getting a commission to develop a screen.

Martin: The feasibility study for the outdoor screen for Centre Pompidou was much later—1975–76. And, like several of the E.A.T. projects over the years, it developed out of a dialogue between Billy and Pontus. Pontus, in about 1973, had gone to Paris to develop the Musée National d'Art Moderne for the Centre Georges Pompidou. One of the ideas of the architects—Renzo Piano and Richard Rogers, who won the competition for the building—was to have a video screen on the outside of the building with varied programming on it. Pontus asked Billy to develop a proposal and feasibility study for such a screen and programming for it: games people could play from kiosks on the plaza, views of what was going on in the museum, films by or about artists, et cetera. So Billy, operating within E.A.T., enlisted the necessary technical people and industries to make a feasibility study for developing and installing such a screen. He worked with main sub-contractor, Ford Aeronautics, to develop the proposal. But because the French bureaucracy wanted a fixed price for the system—not the usual cost-plus formula American companies were used to—the cost submitted was very high and the system was never built, and we never got to the point of developing programming for it. But E.A.T. was never “looking for work” in the sense you ask. We applied for grants and wrote a lot of proposals for funding.

Let me back up. E.A.T.'s most active years were 1966 to 1973 or '74. During this period there developed two tracks of E.A.T. activities. The first was what we called the Artists Matching

Program, where artists could write or come to E.A.T. with technical questions, problems, or requests for help in developing an idea that needed one aspect of new technology or another—electrical, mechanical, or chemical engineering and beyond—and E.A.T. would match the artist with an engineer in the appropriate field, who could help with the project. It started with Billy and Fred Waldhauer handling the matches, then Ralph Flynn and then, for several years, Peter Poole was in charge of matchings. It was for this program that we made the effort to sign up engineers from all over the country and from many different fields. This program continued throughout the major years of E.A.T. activities. It was for this matching system that we developed lists of engineers who could help artists and explored different method of information retrieval. We had artist members, but we never wanted to have a database of artists.

The first information retrieval system we developed was for matchings—to be able to access engineers. As we had more and more engineers sign up, we needed to be able to find them. This system used McBee Keysort cards. I don't know if you know the cards with the knitting needles? Knitting needles. That was how Peter was working. Names, addresses, and specialties of the engineers were on cards. Then the holes around the edge of the card were assigned different information: city, specialties, et cetera. We only made these cards for engineers. Then when the artist had a question, you stuck the needles through the corresponding holes and the engineer with the selected specialty and right location would fall out. Peter would then give the artist the names and addresses of the engineers. He would write the artist's name on the back of the card. But that was the extent of our follow-up. Because we didn't follow up these matches. We just sort of sent people out into the world together.

Q: You didn't keep track on what projects came out of whatever connections?

Martin: No, that would be a very interesting—there's a PhD dissertation there for somebody. Interesting people were involved that you wouldn't necessarily think.

Q: I wonder if there would be a way to track it.

Martin: Well, the names are there. The cards with the names of the engineers on them and on the back are names of artists who were given the engineer's name. It's a primitive record of who was matched with whom, so maybe one could follow up with the engineers and the artists. The cards are all at the Getty Research Institute [Los Angeles].

In the early seventies we were updating the matching system. First we designed and printed a more complete and detailed edge-notched card for the McBee System that would have allowed us to keep better track of the matches. We also started to develop a computer database of artists and engineers so they could get in touch with each other that we called EATEX.

Q: That early, you were trying to do it?

Martin: We were working on it with Honeywell Bull and even made a prototype. We applied to the Ford Foundation for funding for the Artists Matching Program [Matching Artist and Engineer Service, 1966]—a very elaborate proposal with provisions for following up and collecting information on the collaborations—but we were turned down. Even after the mid-

seventies when funding became scarce and E.A.T. downsized, so to speak, Billy would answer any artist who called and find technical help for him/her.

In addition to that ongoing matching program we found ourselves initiating and administering larger scale projects. The first was the E.A.T. competition and the *Some More Beginnings* show at the Brooklyn Museum in 1968. The next was the Pepsi Pavilion. These large projects came along almost by chance, literally. The Pepsi Pavilion came about when Robert Breer's neighbor in Snedens Landing [New York], David Thomas, who worked for PepsiCo International, said, "Pepsi has the opportunity to do this pavilion for Expo '70 in Osaka, Japan, one of three American companies allowed to have pavilions. It can't be commercial. The theme is toward the future. Art and technology. Are you interested?" Breer, of course, wanted to have his *Floats* up there at the pavilion. He came to Billy and said, "Are you interested?" Billy saw this as a great opportunity for artists' and engineers' collaborations. It wasn't looking for work. It came. It was an opportunity. Let's do it. It just so happened that that money was very useful at the time.

Then, from '69 to '70, although we were engulfed, in a way, by the pavilion, a lot of other things happened. 1969 was the same year that we developed this idea of Projects Outside Art, which I say is the less sexy part of E.A.T. but is a direction that interests people now. The next generation has gotten to it. It was that forward-looking. I think that was very much Billy and Bob Whitman working together because Bob Whitman was part of the Pepsi Pavilion project and became more active in E.A.T. on a day-to-day basis.

Rauschenberg hadn't really wanted to be part of the pavilion. He gave some suggestions in the beginning and sat in on some meetings but his interest was not in being part of making a pavilion for Expo '70.

Q: Projects Outside Art, you mean things like that? Or what do you mean?

Martin: Yes, Projects Outside Art. Well, the pavilion became one of them, when you look back on it. I don't know if they were thinking that but we began to develop the idea that the artist, as a professional with certain skills—not art skills, but certain skills, human skills—could be part of an interdisciplinary team that could work in other areas of society on other problems. This also partly came about because of Vikram Sarabhai, who was head of the Atomic Energy Commission in India. The Sarabhais—they're a very wealthy Indian family based in Ahmedabad, [who acquired their wealth through] mainly textiles and then pharmaceuticals. There were many brothers. Vikram was a scientist—quite a well-known scientist—active with Pugwash [Conferences on Science and World Affairs], anti-nuclear weapons and pro-peaceful uses of atomic energy. He was head of the Atomic Energy Commission in India and initiated their space program. NASA had offered India the opportunity to get an ATS-F [Applications Technology Satellite] communications satellite over India so that you could broadcast directly to the villages. In other words, you didn't have to build this infrastructure going out from Delhi slowly, telephone poles or wires, whatever. He saw this as a great opportunity.

He asked E.A.T. to help develop instructional software or develop methods for developing software. This was in the winter of '69. We put together a group of people of whom an artist was

part—Whitman was the artist—to go to India and work on this issue. Fred Waldhauer and [Ernst] Ernie Rothkopf, who was an education specialist at Bell Labs. Somebody from Xerox teaching. Fred Waldhauer and Peter Poole, who was an E.A.T. staff member. And I went. This group was going to work with their Indian counterparts. They actually did come up with an idea using 1/2-inch video to make visual research notes as a basis for developing educational programs to be broadcast by satellite.

Our target area for a test project was the Amul Dairy Cooperative in Anand in Gujarat state, where Ahmedabad is, the center of which was a big, modern dairy that supplies milk and milk products to Bombay. There were like fifteen hundred women every day, who would bring small quantities of milk from their buffalo twice a day to collection stations in or near their villages. They would weigh it and test the fat content, pay the women for the milk, and then it would go to the dairy. They had this incredible distribution system. The idea would be to use 1/2-inch video in the villages, make tapes that the people there even could be involved in making. Then you could circulate them using the milk collection system and do your testing ahead of time so you knew what kind of images, what kind of teaching worked. Then you'd go and make the tapes for broadcast, rather than have somebody from the BBC sit and lecture the farmers.

Q: Did that work?

Martin: Well, we never did it. I've more recently realized why we weren't involved. Vikram died, quite young, in 1971. Actually in '74–75 the ATS-F satellite was sent over India and the group initiated what they called SITE [Satellite Instructional Television Experiment] project, led

by Dr. [E. V.] Chitnis, who had been part of the group working with us, using satellite transmission for direct broadcast of educational programming, which used some of these ideas we proposed. We didn't do it, but it did take fruit. There's a young man named Alexander Keefe, who writes about art and art in Asia. He's researching the SITE project, interviewing people, and working on this issue.

This idea of Projects Outside Art was kind of born with the Anand project—that this would be a really interesting way to go for the kinds of projects that E.A.T. would initiate, would push things further. Of course, looking back, the pavilion's one of them. You're not making art. You're making a pavilion for a world's fair. It is a kind of Project Outside Art. The concept developed. We got some sort of grant to do a series of exhibitions and so we asked for suggestions for Project Outside Art. One we did was [A Vegetable Roof Gardening Project] City Agriculture [1970] or rooftop gardening with the University of Arizona to do hydroponic gardening on city rooftops. Another was Children and Communication [1970] in which we had these two areas connected by telephone lines and different terminals—telex, telephone, facsimile machines, Electrowriter—in which the kids could use the equipment freely to communicate with each other. It was a test project to have kids communicate with other areas of the city without having to go out of their own neighborhoods. Interestingly enough, we did this the first year of the internet, 1971. But of course, we had no idea. At that point, Billy wasn't part of the technical community that was following this stuff so it came out of ideas he and Whitman and E.A.T. staff developed. E.A.T. L.A. [Los Angeles] developed some ideas around Recreation and Play [1970].

Q: If something came out of it. In terms of Rauschenberg, you meant that he was not as interested in this idea of moving out of art?

Martin: Well, I don't know. I shouldn't say that. I don't want to say that. But actually, he resigned as chairman at one point during this time—early seventies. I think just other things were pressing on him. Maybe this is when he moved to Florida. I don't know exactly when but sometime about this time. He just felt he couldn't fulfill the obligations of being chairman.

Q: Thought he needed to step back from it?

Martin: But any time Billy had any questions, he would always go to Bob. He absolutely trusted Bob's take on things—his kind of decisions, his insight. He would go and say, "We're thinking about doing this. What about it?" I mean, I can't think specifically right now. But I know that there would be meetings where we were starting something. Billy would go and talk to Bob about it. Or if there was a question about something, he would go and talk to Bob about it. When we started the New York Collection for Stockholm project in 1971, Bob was very involved in it from the beginning. Pontus had chosen a beautiful cardboard piece for the collection and then Bob supported Billy's idea to have Teledyne [Thousand Oaks, California] donate *Mud Muse* [1968–71] to the collection. The collection was originally a fundraising idea for E.A.T. that Bob Whitman discovered, in which the government used [U.S.] Treasury Funds to match donations to the government of property or other things of value. The collection was to go to an American museum and E.A.T. would get a grant through the NEA [National Endowment for the Arts] Treasury Fund project. That didn't work out and Pontus, having chosen the collection, asked that

it go to Moderna Museet. Bob, Bob Whitman and the other artists agreed, as Pontus and Moderna Museet had been the first museum to show their generation of American artists in Europe. We had agreed to pay the artists what they would normally receive for their work and the dealers agreed to forego their commission so their commission would go to E.A.T. When it became clear that fundraising for getting the collection to Sweden was going to be difficult, we sat down with Bob and came up with the idea of each artist contributing a print to a portfolio that could be sold to raise money. Bob brought in Adi Rischner at Styria Studio [New York], whom he'd worked with on the *Currents series* [1970], to do the printing.



Robert Rauschenberg
Mud Muse, 1968–71
Bentonite mixed with water in aluminum-and-glass vat, with sound-activated, compressed-air system and control console
48 x 108 x 144 inches (121.9 x 274.3 x 365.8 cm)
Moderna Museet, Stockholm
Gift of the New York Collection
Engineers: Frank LaHaye, Lewis Ellmore, George Carr, Jim Wilkinson, and Carl Adams
Sound artist: Petrie Mason Robie

Q: One thing I was going to ask you before I forget. I don't think it was ever published, but in this period leading up to E.A.T., I think around 1965, Billy had a project of writing a book that was going to be called "Art and Engineering." What happened to that?

Martin: Well, 9 Evenings happened.

Q: It just got shelved?

Martin: Yes. He has said that he realized that to make art and engineering effective, it needed to be a bigger effort than just him, or him and his colleagues at Bell Labs. How do you do that? He thought of writing a book. He began to ask artists to make proposals. Maybe make the proposals the basis of the book to interest engineers, or to make the idea—say, here are these artists that want to do these amazing things. I know there's a letter from [John] Cage and there's a letter from [Nam June] Paik answering him. This was like late '65, I think. And then about that time, Knut Wiggen came from Sweden and said, "Are you interested in participating in this festival of art and technology I am organizing?" They got involved in that and then that took its own path to the 9 Evenings. Then the idea of an organization came up and that seemed to be a much—

Q: More efficient—

Martin: —efficient way to spread the idea of artists and engineers working together. I should also say, the other thing about E.A.T.— You said, "How did you find the engineers?" There was an extraordinary response all over the country. People in different places either who knew Bob or knew Billy—or didn't know them at all—loved the idea. They would say, "Can we start E.A.T. chapters?" We'd say, "Yes." So in Boston, Philadelphia, Washington, friends began to start these chapters that began to do their own activities, attracting local engineers and local artists.

Q: Was that relatively early? Was that by the time you started working with E.A.T.?

Martin: Yes, it was really early. I know in one of the first newsletters I did, we list fifteen or twenty. We had a local groups conference in 1968 where we brought people who were interested in organizing E.A.T. groups together to give them the benefit of our wisdom.

[Laughter]

Martin: We didn't try to set up any kind of structure, which we could have. That could have been something else—to have had a national organization with chapters. Billy's idea of an organization was a little bit based on IEEE, Institute of Electrical and Electronics Engineers, where you have a national organization and then you have local chapters that do kind of local things.

Q: I see here. Local groups.

Martin: Local groups. That's what we called them.

Q: Yes, twenty-six locations in the United States and Canada. That's what it says in the last issue of this newsletter.

Martin: That was by '68, yes.

Q: Even here, there's an international presence.

Martin: Right, there was. Exactly.

Q: I remember in the catalogue—because it's in Japan—there's discussion of an E.A.T. Japan. Here there's Toronto, Vancouver, but also Brazil, London, Amsterdam.

Martin: So that's where people you knew lived—

[Laughter]

Martin: —to be perfectly honest. You knew that they got the idea and they wanted to do something with it. We did try to encourage the groups. I remember going to Seattle and Portland [Oregon] and meeting with the people who wanted to have E.A.T. groups there and the woman in Berkeley [California]. Billy met with the people who were interested—like David MacDermott and Ardison Phillips already had a group of people they were working with and then they formed the E.A.T. L.A. group when we first started doing the pavilion because so much of the technology and industries were out there. David and Ardison and some young architects were very involved in aspects of the pavilion, in particular the air-structure mirror. But that chapter of E.A.T. remained very active for several years. E.A.T. Japan started when we started going to Japan for the pavilion, in January of '69. It was quite active. Fujiko [Nakaya] did a great job administering it and doing it. At that moment, there was a real response to this concept of art and technology and artists and engineers and scientists working together.

Q: Your responsibilities at E.A.T., aside from the newsletter— When you were going to India, for example. That's a slightly different time. But right from the beginning, what's your main set of responsibilities? Whatever needed to be done?

Martin: I think so. Like administrative assistant. On projects, project assistant, I would think. Whatever was needed. It's hard to say. Then, of course, after 1974, E.A.T. became less and less active. The problem was in terms of funding. If you look at a lot of the proposals we made in the early seventies, we were trying to straddle the professions. We didn't have long experience in education or in technology development for underdeveloped countries. You just didn't have the—what do you call it—roots. We didn't have the reputation or roots in the structures of other institutions in the society. You weren't part of the establishments. Some people caught on and worked with us, on Children and Communication or City Agriculture, for example. But to try to bridge that gap in terms of funding or getting people in different institutional structures to try new approaches—to let the artist in, so to speak—it didn't seem to work. We have a lot of proposals that we made then that look great now but it was too soon. I think it was just too soon. But it would probably be too soon now, even.

Q: There were things that you couldn't get funding for because it was premature.

Martin: I think so. It seemed nobody understood about it. Maybe to people in the field it just was too different. Maybe it just seemed amateurish, or there was skepticism about trusting an artist. Who knows? Who knows why you got turned down?

Q: When artists and engineers were coming together—because this is also the era in which government support and foundation support of the arts is really blossoming. Was your sense that these projects—or was your instruction to them—were they going out and writing grants? Here's an artist: "I've found my engineer and I want to apply for support to put on a big show I'm going to put together next fall. We'll write a grant application together." Were they trying to do that?

Martin: I don't think so. We didn't find support for individual artist's and engineer's projects. In the beginning, in the early issues of the newsletter, there was emphasis on industrial support of these collaborations and the need for industry to be part of the picture. We did try to do some of this—in particular, set up possibilities for artists to work within industries—the Singer Corporation and a residency agreement with the Amalgamated Lithographers Union to have artists working their experimental workshop. But I think the artists' projects and requests were too varied for E.A.T. to be able to go to the appropriate industry for each of them. It evolved for the individual engineer to work with the artist and possibly be the carrier of the project to his business.

The model of directly placing artists within certain industries was carried out by Maurice Tuchman at LACMA [Los Angeles County Museum of Art], in his *Art and Technology* exhibition project. He chose well-known artists and matched them up with participating industries in the L.A. area and hoped for a work to emerge that he could show. There's a great catalogue that follows each artist-industry project and you can see some successes that resulted in beautiful works. Rauschenberg's *Mud Muse* at Teledyne came out of this program. But his goal was only to produce works for an exhibition and once the exhibition was over in 1971, there

was no follow-up. [Note: Los Angeles County Museum of Art, *Art and Technology*, May 10–Aug. 29, 1971. Exh. cat. *Art and Technology: A Report on the Art and Technology Program of the Los Angeles County Museum of Art 1967–1971.*]

Maybe E.A.T.'s not raising money for individual artworks comes from the idea that we were not in the art-making business. We were in the social revolution business. Of course, before E.A.T. started, Billy worked with individual artists.

Q: No? It was more ad hoc, like “make me a neon letter”?

Martin: Right. And in the early days of E.A.T., it was still pretty informal grant-giving. I remember we got a grant from the JDR [John D. Rockefeller] 3rd Fund to send artists to India. I think Billy called Porter [A.] McCray or met with him and said that, up to now, they had invited Asian artists to come to New York and Billy suggested sending American artists to India. There was informality, even with the New York State Council. We didn't get involved in funding artist projects. Maybe if there had been a huge demand for it that might have been something E.A.T. could have done. There was no sense about fiscal sponsors even. You know? So those concepts weren't there—those fundraising concepts. We did try to do some artists-in-residence, and with some success. We sort of never did anything twice—like a yearly exhibition of art and technology, or continuing courses on technology for artists—which doesn't help in terms of longevity.

Q: You never quite had a profile if you're always doing something different.

Martin: Exactly. It was having ideas and kind of exploring them and moving with the ideas probably too far ahead of what was feasible. The organization never went away. It actually still exists.

Q: Is it still functioning?

Martin: Well—

[Laughter]

Martin: When I say it is. You know something's E.A.T. when—I just say it's E.A.T. We don't raise money. But it hasn't disappeared. It's still a good sort of a concept.

Q: I wasn't sure. Are the DVDs from 9 Evenings—

Martin: It's always calling it E.A.T.

Q: Yes, they say E.A.T. on them.

Martin: It was an E.A.T. project. I keep the name and then we collaborate with—

Q: But there's not an office? There's not an E.A.T. office somewhere?

[Laughter]

Q: You are the E.A.T.?

Martin: I'm afraid so.

Q: You're the office.

Martin: Right, I'm the office. You're in it.

[Laughter]

Q: You're collaborating on those with ARTPIX and you call it E.A.T. and ARTPIX.

Martin: Exactly. Because I think it is [E.A.T.]. With Whitman on *Passport* [2011], when he did something two years ago, it's E.A.T. But, I don't know. It's when it makes sense to still have the name—to still have the name or the identification. Or the nature of the project is such that it makes sense.

Q: Right. No, I meant in the sense of there's not an office with a staff.

Martin: No, no, no.

Q: A budget, that kind of thing.

Martin: No. No.

Q: I want to try to talk more directly about Rauschenberg and, really, any memories, if you think you can.

Martin: I mean, it's really hard.

Q: Then we should talk about whether you can or not.

Martin: Yes, I mean, I can but I'm not sure. I'm trying to think, whether—[pauses] after '74, Billy would see Bob. We'd go to openings. We would go to parties. If Billy had something, he would talk to Bob. I can't think of specific—I mean, I can think of some things that Billy was doing, or impressions of Bob. I can't see beyond this impression of somebody who was extraordinarily smart and just so right on about things. Right on about not letting you get away with any kind of bullshit. A kind of incredibly moral sense of decisions, you know? And calling people on it. Calling you on—keeping you straight somehow. You'd always be kind of surprised. He'd say something—you'd be kind of surprised, you know? It would make you think. This ability to make you think.

I worked with him on one thing, a set of proposals for cultural activities. It's in *Techne* where we published what he had written—his ideas about what to do for cultural activities in New York. He came up with these wonderful suggestions. I don't know if you've seen it, but I can show it to you. What could be done with people—with cultural activities in New York neighborhoods. He said, "You can't bring culture to people. You can only bring it out of them." I mean, in the sense of their own culture. That was an amazing experience to work with him on compiling ideas and suggestions.

[Note: Rauschenberg, Untitled (Presented at a meeting of New York City Cultural Commission), 1968. *Techne: A Projects and Process Paper* (New York) 1, no. 1 (April 14, 1969), p. 12. There is no record confirming the presentation.]

Q: That kind of thing. If there are things like that that you feel like you could talk about, we could look at that list and you could talk in more detail about that process. That kind of stuff is what would be useful—to get a sense of [his] process, what collaboration meant for him. Because it's easy enough to say "collaboration." But as you were saying, that word actually felt strange or ill-fitting.

Martin: One got used to it, as I said, in the beginning. Then you began to understand. The words I always think of are commitment and responsibility. You worked with somebody. You were committed to working with them. You were doing it because you wanted to work with them. You wanted to work on the project. For them, this idea of taking responsibility for what they're doing. You had this feeling that you had your own responsibility for whatever it was—whatever role that you were playing or what you were doing. You took it very seriously. You know,

personally seriously. I think that's something that was very—I mean, I don't know if those words—they're not words you hear so much now. I think it was very much in the air then and, very much, that's what, for Bob, collaboration was about: two (or more) people committed to finding a solution and to working on a project. Not dictating exactly what has to be done from start to finish or having the final idea from start to finish.

The story of *Oracle*, of course, is kind of key to that. It started out— You know, Bob did a painting called *Broadcast* in '59, which had a radio and it had these kind of strings in back and you turned it. It did the same thing. It changed the volume and it changed the rate of speed. When Billy started talking to him about doing things, Bob said, "I'd like to do five paintings and I want each of them to have a radio in back of it. I want a control console out front to control the radios but I don't want any wires." So then, with the existing technology, it was technically impossible. He wanted AM radio because that's where the—what do you call it—action was in those days. FM was a few stations with classical music or something. Then, how are you going to transmit wirelessly? Well, it just was impossible. The interference between the five transmissions was enormous. And the first system was a disaster. So Billy and his TA, Harold Hodges, kept working for a number of years. At one point Bob got tired of that so the painting just went out as a painting, as a five-part painting, *Ace* [1962]. He decided to do the work as a sculpture; somewhere along the line, it changed to a sculpture. Then it began to take shape that way and took its final form.



Robert Rauschenberg
Broadcast, 1959
Combine: oil, graphite, paper, fabric, newspaper, printed paper, printed reproductions, and plastic comb on canvas with three concealed radios
61 x 75 x 5 inches (154.9 x 190.5 x 12.7 cm)
Kimiko Powers Collection, Colorado



Robert Rauschenberg
Ace, 1962
Combine: oil, paper, cardboard, fabric, wood, and metal on canvas
108 x 240 x 7 1/2 inches (274.3 x 609.6 x 19.1 cm)
Albright-Knox Gallery, Buffalo, New York
Gift of Seymour H. Knox Jr.

Bob very much knew what he wanted. He knew the elements of the work that were important to him. This comes about a little bit more in the restoration. *Oracle*'s been restored and new technical components have been added several times over the years. At one point, Per Biorn, who worked on all of this, said, "You know, I can have the scanning go digitally from station to station." Billy asked Bob. Bob said no. He didn't want that. He wanted the old-fashioned noise—the static in between stations. That was an aesthetic decision that got posed. The same thing happened when they were redoing *Soundings* [1968]. The first time Billy and Fred Waldhauer went to Cologne to see about restoring *Soundings* for its permanent installation at the Ludwig Museum there. They were redoing the sound system and the trigger mechanism that responds to different voices differently. Billy said, "You know, those mirrors have gotten really yellow. Do you want new mirrors put on the piece?" Bob said no. Bob liked the change over time. He didn't want to change the mirrors. He was very clear about what the aesthetics were. But in terms of the

technology, neither of them had any commitment or love of keeping the old technology. It was the final image that was important to Bob and that was what Billy respected.



Robert Rauschenberg

Oracle, 1962–65

Five-part found-metal assemblage with five concealed radios: ventilation duct; automobile door on typewriter table, with crushed metal; ventilation duct in washtub and water, with wire basket; constructed staircase control unit housing batteries and electronic components; and wooden window frame with ventilation duct

Dimensions variable

Musée National d'Art Moderne, Centre Georges Pompidou, Paris

Gift of Mr. and Mrs. Pierre Schlumberger, 1976

Engineers: Billy Klüver, Harold Hodges, Per Biorn, Toby Fitch, and Robert K. Moore



Robert Rauschenberg

Soundings, 1968

Mirrored Plexiglas and silkscreen ink on Plexiglas with concealed electric lights and electronic components

96 x 432 x 54 inches (243.8 x 1097.3 x 137.2 cm)

Museum Ludwig, Cologne

Ludwig Donation

Engineers: Billy Klüver, L. J. Robinson, Fred Waldhauer, Cecil Coker, Per Biorn, and Ralph Flynn

I think artists of that generation who came to the technology after they were already working artists—they used new technology as a way to fulfill or expand an image they already had. It wasn't really about the technology. Now, so much of the work itself is conditioned by the technology the artist already knows or has easily at hand. Do you know what I mean? The art comes out of the technology. I think people like Whitman and Rauschenberg and some of the

people that worked with new technology in the beginning, they already knew what they wanted to do with their art. They already had their image, so to speak. And I say that broadly.

One of things that Billy was very clear about, or tried to be clear about was, “What was an artist’s decision? What was an engineering decision?” So at certain points—like asking Bob—he understood that there’s a difference between digital and analog scanning of the stations. So he knew that that was a decision he wanted Bob to make.

Q: Because Bob understood the difference? I mean, what’s the difference between the artist’s decision and the engineer’s decision?

Martin: Yes, I think Billy was very sensitive to this. To Per Biorn, it didn’t seem to make any difference. We’re just scanning the stations. But to Bob, somehow, he knew the noise between stations was something he wanted—something he liked. It was an aesthetic decision as opposed to a purely technical one. When Billy was working with artists, he would try not to take anything for granted in that sense. He would understand that this is something the artist could decide or should decide. Even if they didn’t care, he asked them. I know there was a situation when we were working on the pavilion, where the engineer interfered with aesthetic decisions. David Tudor was working with an engineer called Larry Owens, who really didn’t understand him. David always wanted more possibilities, more channels. I mean, the more you could get, the better. They were designing and building the sound modulation system for the sound in the pavilion. There were thirty-seven speakers arranged across the roof of the dome and David wanted as many sound input channels as he could get. But Larry said, “You don’t need more

than eight channel inputs.” So here was an engineer making an aesthetic decision, which to him was just an engineering decision. As I say, Billy didn’t know about it. He wasn’t aware of this. Billy always felt bad about this—that David didn’t get as many channels as he would have liked.

Q: It became a conflict, you mean? With Tudor?

Martin: Well, no. David was just disappointed. He gave in. But he later said it was clear that that was a problem with that collaboration. That here was an engineer who didn’t understand.

Q: You don’t know of an instance where Billy felt that he was making an aesthetic suggestion?

Martin: Oh, he might make a suggestion. Like when he asked Bob, do you want to clean up the mirror in *Soundings*?

Q: There wasn’t something like that he felt strongly, aesthetically, about where he said, “Bob, we really need to clean up this mirror?”

Martin: No. No, I don’t think he would have done that. I don’t think he would want to impose his aesthetic. That’s what you have to understand about aesthetic decisions versus engineering, right? The engineer has an aesthetic, obviously, too. So nothing’s pure. But, no, he wouldn’t. I can’t think of any situation where he would’ve.

Q: Do you feel like that line was clear for Rauschenberg too? Between engineering on that side and aesthetic decision, or the artist decision on the other side?

Martin: Oh, I think he knew what he wanted. I don't think he was closed to an engineer's suggestions. He could think about it and say yes or no. It wasn't like, "It has to be my way." There was a respect for the fact that the engineer is solving a different problem for me. There is Billy's story about the red batteries and he was so worried—the car batteries to power *Oracle*—and all he had was red ones from Bell Labs and Bob didn't care.

Q: But Bob ended up liking the color of the batteries.

Martin: Liking the color, yes. It was more that it wasn't making this decision. It was like saying, "This is what I've got. Is it okay?" And then Bob saying, "Yes. It's okay."

Larry Owens, who worked on the control console for the Pepsi Pavilion, was very much an engineer who didn't understand and didn't respect the needs of the artist. He didn't try. He worked with Fred and David Tudor on the sound system and when David asked for more channels he would come back to him and say, "Look, all the system will hold is eight." For Billy and Fred, you don't say eight is enough if the artist is saying, "Can we get more?" Or, "Can I have more?" So it's about stretching yourself.

Q: It's an interesting way of approaching it. Also implicit in that is an idea that each collaborator has his or her own turf.

Martin: Exactly.

Q: The engineer's never going to become an artist and the artist is never going to become an engineer. You know what you do. I know what I do. You go do your part and I'll do my part and we'll put them together. It's interesting that you never get to the point where this is really an interweaving of the fields. Where suddenly the engineer is a painter, or the engineer is a dancer for a minute.

Martin: Well, I have to say that that was something that Billy felt very strongly about. If you're an engineer, you spent your life learning to be an engineer. You haven't spent your life learning to be an artist. If you're an artist, the same thing. Why should an artist have to spend time learning engineering, you know? It was a respect for the professionalism of each of them. It was a real respect for the fact that an artist is an artist. He or she has skills, has abilities, has instincts that are worth preserving. Not preserving—worth regarding. The engineer too comes with his own professionalism. But the collaboration wasn't just, go off and make it and put them together. There was a conversation there. In *Oracle*—I mean, certain decisions Bob would make, like choosing small speakers and where he'd put them in each sculpture. He kind of knew. I'm sure that there was talking about it or, "How does this work?" Billy remembers asking Bob, "What do you want the knobs on the top of the staircase to look like?" He could kind of understand certain things. You're participating if you're asking. Asking the question means you've thought of it and you're—do you know what I mean? You're part of the process. So in a way, you become part of the process. You're just not part of the art-making, the art decision-making process.

Q: Yes. You're not making the decision though.



Robert Rauschenberg
Solstice, 1968
Silkscreen ink on motorized
Plexiglas doors in metal frame
mounted on platform with concealed
electric lights and electronic
components
120 x 172 x 172 inches (304.8 x
436.9 x 436.9 cm)
The National Museum of Art,
Osaka, Japan
Engineers: L. J. Robinson, Per
Biorn, Tony Tedona, and Ralph
Flynn

Martin: You're part of the process in maybe suggesting. Well, let's say for *Solstice* [1968]. Bob told [L. J.] Robby Robinson he wanted to do a piece for Documenta [4] and he wanted it to be interactive but obvious to the viewer how it worked. Robby said he thought of doors opening and closing in the Amsterdam airport and suggested sliding doors. Bob came back to him and had the plan for *Solstice* with five sliding doors the viewers could walk through, opening and closing behind them. Then it was up to Robby to find the sliding doors. He found pneumatic, air-powered doors and I think it was he who decided to use that system. It was a technical decision but I'm sure he ran it by Bob, "We have these air-powered doors." It's being involved—you're contributing your expertise. And both of them are valuable. You're not saying the artist is more valuable, necessarily. He is in the sense that it's his artwork and that he signs it. Okay. But it's

the structure, the social structure. In the collaboration, each is necessary. You couldn't have the artwork without the engineering.

Q: Right. Well, *Oracle* is the one where—doesn't Billy sign as sound engineer?

Martin: It's interesting, yes. It's the only one that he signed. Or, I believe, any engineer co-signed.

Q: Did he talk about that?

Martin: Not that much, damn it. He talked about the fact that he'd signed it. I don't think he felt it gave him any particular rights.

Q: I think he said, "Bob felt that I should sign it too." I think that's the way he puts it in that essay he wrote. And, "So I put my name as sound engineer." But it's interesting that Rauschenberg then did not feel that way about other collaborations.

Martin: Well, they worked for several years on *Oracle* and Billy may have been more hands-on than he was later. Also it was just Billy and his assistant, Harold Hodges, who worked on *Oracle*. Maybe the later collaborations didn't go on as long, and more engineers were involved in different aspects of the work.

Q: What feels counterintuitive to me about it is that if you think about the artists in this generation, they are radically transgressing the boundaries between literature, dance, painting, sculpture—right? There’s never a place where Rauschenberg is saying, “I’m a painter. Yvonne, Trisha, you’re the dancers—” I wouldn’t want to do that. Rauschenberg is out there dancing. But with the engineers, I don’t get the sense that there’s a moment where he says, “Hey, you’re a painter too. You’re a dancer too. Come on in.” Where he said to Billy, “Come on and put on roller skates and get in the show.” That’s what seems—do you see what I mean? That seems counterintuitive. When I think about these artists as artists, part of what’s exciting about this moment is that there’s no division between writing and painting and sculpting and dancing. They’re all doing all of it to some degree. See what I mean?

Martin: Yes, but—

Q: But that line never gets blurred between science and art.

Martin: Or engineering and art.

Q: Yes, between engineering and art.

Martin: Number one, there’s not that big of—well, there was, between, say, dancers and artists. I mean, artists had made sets for dancers. That kind of collaborating on a project—the project of the dance. Bob says he was forced into being a choreographer only because of the mistake on the announcement—he asked first Per Olof Ultvedt, who was a Swedish sculptor visiting New York,

and then Alex Hay, who also was not a dancer. He asked Carolyn Brown, who was a superb dancer. He was working within the field of dance. It's true. Given the fact that they were all friends and they were all in each other's pieces and in each other's lives, it doesn't—I mean, looking out maybe as a theorist, you see it as radical. It was a gradual process from the fifties. You know, Black Mountain [College, North Carolina], they put on theatricals. People performed in other people's pieces, right?

Q: I'm not surprised by that. I'm just surprised that Billy's not in the pieces too.

Martin: He was in Claes's first piece in the Ray Gun Theater series. You also have to remember that in this period, Billy was a full-time research engineer at Bell Labs. He was incredibly active with the artists in New York, but he did have a full-time job.

Q: That's why I'm saying it's counterintuitive because I do feel like that's the climate of the moment.

Martin: Yes, but Bob didn't ask his bookkeeper to be in the pieces. He didn't necessarily ask Susan Hartnett, who was his secretary. No, I'm not being facetious. I'm trying to work with you on this. I think the people that were in his pieces were friends who also happened to be artists. He asked Carolyn Brown to be in *Pelican* and then he put her *en pointe*. He obviously had an image that he wanted to produce. He wanted this counterintuitive ballerina that you put in this very awkward non-ballerina situation. He was working within dance. I also think there was some sense of working with people who were performers and whose work you liked—whose

performance style, or lack of style, you liked. There was a shared—I hate to say aesthetic but more a shared approach to what they were doing. They appeared in each other's works and appreciated each other's works. Bob R. very much worked with close friends in those years. Steve, Alex, and Deborah were in all of his pieces in 1963, '64 and '65. In fact, the four of them formed what they called Bastard Theater and tried to get performance engagements as a group. And the four worked together on performances they gave as side activities during Merce's world tour in 1964. Both Trisha and Simone were in *Linoleum*, playing the same part in different productions of the work. Trisha was in *Spring Training*.

He didn't try to do engineering. He didn't go to the labs and try to tell the engineers what to do—do you know what I mean?

Q: I mean, Bob did have some technological knowledge, right? To be able to wire stuff and hook up a clock or hook up an exploding spring. He knew how to do some of that stuff.

Martin: I mean, they have to look at—

Q: At that mascot.

Martin: It's at the museum in Stockholm [Moderna Museet].

Q: *Money Thrower*. Yes.

Martin: Yes. How the hell did it work? This is the thing that's so interesting about oral history, right? You've done the same narrative and the same level. But you have to go, "How do you get deeper to facts and to more detail? How do you get more detail?" What ends up getting lost in history? Who knows?

I think the boundaries were still there. The radical boundaries were the ones within art. I think that's the thing. But the boundary between art and non-art were still there. It's blurred now because the guy that writes the program—is he the artist? Or is the artist [the one] that used the program? It's, unfortunately, blurring. Being an older generation, I'm not so sure it's a good idea. There is this dancer [Liz Lerman]. This person did something at MSU [Montclair State University, New Jersey]. She had a physics professor be on stage doing something. I didn't think it was that interesting. But again, for the physicist, on a personal level it may have changed him.

Q: Oh, yes. I was talking to someone recently about that.

Martin: I mean, fine. Fine. You know? Fine.

Another thing that Billy said that I think is not as popular now. People are talking now so much about art and science—maybe you've read—where he felt it was art and engineering. He says that engineers are the people that solve problems. They're physical. They're in the world. This is what the artist needs. You were still working with physical things. I always think of the title of Steve Paxton's piece for 9 Evenings as being emblematic of the work of this period. *Physical Things* [1966]. The scientist and artist, what are they going to talk about? They're going to talk

about ideas. Fine, but that's not the collaboration that interested him necessarily. Maybe people now are talking about art and science because things have gotten to the level of trying to—the ideal level. Some of these scientific ideas have been around long enough that they've begun to come back into art.

But at that point, Billy even said toward the end of his life that for him, it was not about art and science. It was about art and engineering and this hands-on relationship to solving problems, finding ways to design or build things.

Q: Well, it's interesting. Maybe it is a generational issue because it does feel counterintuitive to me. The other way I'd put it is that I associate this generation of artists with not just destroying the boundaries between art forms but destroying the pretense of expertise. Think of Steve Paxton or Yvonne Rainer and the insistence on the pedestrian. You don't have to be trained as a dancer. Not to perform in some of Steve's pieces but to have the idea, to work with ideas of movement in space. To choreograph the pieces, you had to be a choreographer—a professional.

Martin: No. But, yes you could have asked a scientist to be in it if they'd known one.

Q: But they did. That's what I'm saying. They knew all these guys who were right there.

Martin: They weren't part—there was very little social mingling. Billy was one of the very few people who continued to go to art events. Maybe Fred a little bit. Fred was more into jazz. Jazz

was his thing. But for most of the engineers working with artists, art never became part of their world. I think that's important.

Q: Well, that is important.

Martin: I think that may be the clue that you're looking. Some people like Ralph Flynn left Bell Labs and joined E.A.T. Robby Robinson got involved with Ted Kheel and was doing some projects with Ted Kheel. But for the others, the art wasn't part of their lives. If you're an artist and you were looking around for friends to walk across the stage, who did you ask? It's not that you didn't ask a scientist. It's you didn't know any of them. Billy may not have been available, or Billy may not have been the person that liked to perform. You know? You had to like it or you had to want to do it. I think this is it. I think that the social and the friendship didn't meld.

Q: That's interesting. But it did for Billy.

Martin: Very much, yes.

Q: In his life, it was very much integrated.

Martin: Exactly. He went to things. Bob R. was his friend. Whitman was his friend. Claes and he were friends. Very much so. His life was in the art world and not in the engineering world.

Whereas for most of the engineers, their life stayed in the engineering world.

Q: It was something you dabble in but you wouldn't leave your day job.

Martin: No. No. But someone like Per Biorn loved working with artists every chance he got. Later in the eighties and nineties, he was instrumental in renovating Rauschenberg's pieces that incorporated technology, *Dry Cell* [1963], *Oracle*, *Soundings*. He worked with Bob R. and worked with other artists but his life was in engineering and his engineering job. You really didn't have to understand the art, either. That was the other thing. The artist's request was seen as an engineering problem to work on. At E.A.T. there wasn't any idea of one artist being better than another. There was no aesthetic criteria for "the best artist got the best engineer" or anything like that. Anybody that called up, you tried to match them with somebody whose expertise fitted what they needed.



Robert Rauschenberg
Dry Cell, 1963
Silkscreen ink and oil on Plexiglas, with metal coat hanger, wire, string, sound transmitter, circuit board, and battery-powered motor on metal folding camp stool
15 x 12 x 15 3/8 inches (38.1 x 30.5 x 39.1 cm)
Robert Rauschenberg Foundation

Q: It was about the specific—

Martin: —project—

Q: —technical problem.

Martin: Exactly. The focus for the engineer was on that. The idea was by entering, at least briefly, into this other world, or this other kind of project, this other kind of process. You would take something back to your own engineering work.

Q: That was Billy's idea, you mean?

Martin: Yes. Utopian. I see now, more and more, E.A.T. as so much a part of this whole utopian fervor of the sixties—of political, social, civil rights, and later women's rights. It was the manifestation in the art world—or at least in this part of the art world—of those idealistic utopian ideals. I didn't think about it that way then, although, being part of it, now when I begin to look back and to write about it, I think about it like that—very much so.

Q: So at this point it feels idealistic and to some degree, passé? It sounds like you don't feel that that kind of formation would be possible.

Martin: Passé's the wrong word.

Q: Well, its time has passed. Maybe not passé.

Martin: Right. This kind of idealism is probably needed more than ever, in a sense. The problems facing us—the environment, global warming—seem more intractable. There's less technological optimism. Some of the things that made E.A.T. possible have changed, like a kind of generosity. I think it was easier to live. Living took less money. There was more free time. There was more sense for the engineer that he could come work with an artist and get some sort of satisfaction but not necessarily be paid. Everything didn't have to be on a paying basis. Now life is really hard, right? It's very hard. But I do think young artists with their friends volunteer and do the same thing. But I think the time has passed in the sense that that kind of openness and freedom within society for people to volunteer may have passed—a kind of generosity. It may not be possible anymore in that sense but I think the need for this kind of collaboration and the value of it is still valid.

There's a young man, Philip Ording. Actually, he's a mathematician—a topologist—and he's working with artists now. He worked with Richard Serra on some ideas about what forms will stand up or won't. He's worked with Anthony McCall on programming shapes with Anthony's light pieces and with other artists. He says that it's made him be able to think more three-dimensionally about the knot problems he works on in his own work.

He's a model of the kind of thing E.A.T. was talking about in the sixties. You work with the artist. You work on problems in your area for the artist who comes back to you in your profession. I think it still is a valuable thing. I just don't necessarily think putting a physicist on stage directing people is, but, you don't know. Because who knows? Personally, for him as a

person, as a growing experience—I can criticize it from my point of view, but I can also de-criticize it.

Q: Yes. I can now see how it's different from what was happening in the sixties. I thought of it more as a continuum. I would say it's valuable, maybe, in a different way.

Martin: Yes. I think so. Oh, yes. Exactly. I mean, on another level, we were talking about individuals and we were talking about the value for the individual. There's a man I've met, Denis Pelli, who's working with a dancer, Julia [K.] Gleitch. He is a professor of psychology and neural science at NYU and works in peripheral vision. They collaborated and she made a dance that incorporated some of the findings he has made in his research on peripheral vision. He said that watching her dance has enlarged some ideas for future research. In fact, he'd said he had never thought about perception of moving objects at the periphery of vision until he saw the dance she had created. So this kind of mutual enrichment works and it can work in many different situations. I guess you're back to the individuals involved. It works on an individual level. E.A.T. tried to institutionalize these kinds of collaborations and bring in industrial support. People going to industries. I think maybe on the institutional level is where it was too soon. It was—

Q: —too idealistic.

Martin: Too idealistic. Maybe, ultimately, impossible. But also the structures were more rigid in those days—manufacturing structures. One of the things we found when approaching industry to

have an artist-in-residence in an industry or carry out a large project, for example, was that the head of the company was very enthusiastic about the idea, but the resistance came from middle management, the people involved in day-to-day operations. The presence of the artist would disrupt the structure he or she had established. Industries were very hierarchical and the idea of collaboration between workers or between departments was not in the air, so to speak. These ideas have only gained traction in recent years. It works individually. It works on individuals. One person at a time.

Q: I hear shades of conversations about Marxism in social engineering.

Martin: Oh, god. Oh really? That's interesting. How do you mean?

Q: There are some of the same arguments of what you were saying about economism. Some of those same arguments. Can you engineer a society? Is it that you institutionalize it and impose the structure top-down? Or do you have to go person-by-person and revolutionize the consciousness?

Martin: Oh, I see. Right.

Q: Those arguments are not totally different arguments.

Martin: No, no. Exactly. Especially if you want to engender change.

Q: Yes.

Martin: I guess E.A.T. didn't want to institutionalize it, but it wanted to broaden the reach of this idea. Maybe the more engineers you reach on an individual level, then the more impact it will have on society. So that is what Billy was feeling in the mid-1960s. If he was the only engineer doing this, it's not going to go very far. It made some incredible works of art but in terms of social impact, it's not going to go that far.

Q: To some degree, you would say it's his idealism in that period? Eventually, 9 Evenings is a much bigger thing. The formation of E.A.T. is a much bigger thing. But to some degree, it's rooted in his idealism, in terms of his profession and his ambitions and these collaborations in the early sixties he's already involved in.

Martin: Yes. Definitely. Billy's and Bob's. Billy's encountering Bob, who had his own trajectory towards the same ideas. Maybe not necessarily the same ideas but the trajectory was going in that way. Because if you look on the back there—

Q: The newsletter?

Martin: These were the three goals that he and Billy—and Billy said that Bob wrote one and three and he wrote number two. Bob's idea also is quite far-reaching.

Q: Bob wrote, “Maintain a constructive climate for the recognition of the new technology and the arts by a civilized collaboration between groups unrealistically developing in isolation.”

That’s Bob. This next one is Billy?

Martin: More Billy, yes.

Q: “Eliminate the separation of the individual from technological change and expand and enrich technology to give the individual variety, pleasure and avenues for exploration and involvement in contemporary life.” That’s more what we were talking about before, the individual. The third one would be Bob again?

Martin: Yes.

Q: “Encourage industrial initiative in generating original forethought, instead of a compromise in aftermath, and precipitate a mutual agreement in order to avoid the waste of a cultural revolution.”

Martin: It’s obviously broader. He should have worked on that little bit more. The idea was to get industry more involved. He uses industrialists as part of the support for the technical community to be involved. Bob also had this idea of broader goals for E.A.T. or for the collaboration. Certainly Billy brought his own and then Bob brought his own. They coalesced, or they meshed, at that point.

Q: Bob moved away from it first?

Martin: It's important to note that from the very beginning—you see it in the newsletter—all four of the founders saw E.A.T. as a catalyst to bring about change and that, when successful, the role of E.A.T. as a mediator would disappear and many of its functions be taken over by industry, universities, or professional engineering societies. Now, almost fifty years later, you see some of this taking place. Colleges and art schools teach classes in art and technology. Collaborations start spontaneously. Industries, especially in the high-tech area, set up or sponsor collaborations between artists and technical people. Although now, very often, it is with the idea that the artist can come up with the next big thing. One recent project was to put artists and technical people—computer programmers as well as engineers—together for twenty-four hours and expect them to come up with a project. It's a far cry from what we were doing, but certainly the idea of the value of collaboration is well-established in the society.

Bob moved away from E.A.T. as the sole vehicle for his idealism and social engagement, but never away from his overall commitment to changing the world through his work and his activities. I think so. Not in any kind of intellectual—it wasn't like, "I don't think this is going to work," or, "I don't believe this anymore." It was more the way Bob works in series. In a sense, in his work, he did these incredible pieces. The four pieces incorporating technology are among his—I hate to use the word masterpiece, but I find myself using it these days. But *Oracle*, *Solstice*, *Soundings*, and *Mud Muse* are just incredible pieces. Then he did *Revolvers* and he did the *Carnal Clocks* [1969]. Then he moved on in his work. And what did he do? He began to work with the humblest material he could find—cardboard. Let's make pieces with **cardboard**.

To me, Bob was always challenging himself. His talent was so great, he could make anything beautiful. He could take anything, put it together and it's beautiful. It's an incredible work, right? My feeling is that he constantly challenged himself to broaden himself. To go from this very technical involvement and then all of a sudden to, "Let's work with cardboard. Let's make pieces." He's not falling back on his preconceived ideas or his talents. He's trying to work with something that makes him grow. I think throughout his life he did that.



Robert Rauschenberg
Audition (Carnal Clock), 1969
Mirrored Plexiglas and silkscreen ink on
Plexiglas in metal frame with concealed electric
lights and clock movement
67 x 60 x 18 inches (170.2 x 152.4 x 45.7 cm)
Robert Rauschenberg Foundation

Q: If that takes you in a direction where you don't necessarily need an engineer.

Martin: Exactly.

Q: To help you with the cardboard.

Martin: Exactly. Then he started working with the clay. When he did the cardboards in clay with [Donald] Don Saff, he was working with the technology within art. [Note: *Tampa Clay Pieces*, 1972–73] And then **ROCI**, the Rauschenberg Overseas Culture Interchange, which he started in 1984 and pursued for more than six years [1984–91]—the idea of traveling the world, finding materials that mattered to the people in the countries he visited, and then bringing it back to them as art and showing not only art made in and from their culture, but art made from other cultures. His way of spreading knowledge, understanding, friendship, and peace. Many of the countries he chose to go to were not easy and his choices had deep political meaning: Chile, Cuba, China, the Soviet Union, East Berlin, Tibet, Venezuela. He never made “political art” but the act of going to the country, meeting and interacting with artists there, and then making art that expressed or reacted to their culture spread understanding and contact among peoples. He kept his idealism and maybe you could say he found new outlets for it or new forms of it. I don’t think the idealism ever went away. He was always trying to find ways of doing it. I was recently looking at the chronology of his life and work and, year after year, the number of posters or print editions he made for a great variety of causes throughout his life is staggering. Then there was his work with Ted Kheel and the UN [United Nations] international conferences both on the environment and on population growth that he not only made posters for, but also attended.

Q: It’s an idealism of process. Among the many great Rauschenberg quotes, there’s a great one where the interviewer is asking him, “How do you work?” He says, “I just go into the studio everyday. I just work everyday. I don’t know what the hell I’m doing. I just keep the place where I don’t know what I’m doing and that’s the place where you find something interesting.”

Martin: Yes, that's what I mean about challenging himself. By choosing new art technologies or bringing new technologies into art, like he did with Don Saff, and printing with hot wax for some of the later ROCI pieces. [Note: *Wax Fire Works series*, part of *ROCI USA*, 1990–91] The later pieces that he worked on used unusual substrates—aluminum, copper, then polycarbonates. If you work with something you've never worked with before, you can't predict how it will behave. The process is always new because you don't know everything about the material. You are, as Bob would say, "collaborating" with it. It can still surprise you. If he had stuck with, say, drawings that were made by transfer rubbing, he would come to know it so well that he would always know how it would react. I didn't mean he wouldn't do incredible things. It wouldn't have been a process into the unknown. The process wouldn't have led him to unknown outcomes. So he was continually changing his medium and his tools, pushing into his own unknown.

Q: Yes, it also avoids technological determinism. The idea that, "Now everything I make has to have a transistor in it."

Martin: Right. Right. The commitment is to a process of discovery, not a process of perfection. One of the appeals that new technology had for Bob was it offered him the ability to explore an idea he had expressed early on. He had said that if you could remember a painting, it's dead for you. So for him a challenge was how to keep a painting alive. And in using the new technology offered by Billy and his colleagues he could make works in which there's no way that you ever see the same image more than once. The image is always changing. In *Oracle*, the sound is of five radios in which the scanning from station to station never stops, which creates an ever-

changing sound space. In *Soundings*, sounds in the room trigger images of chairs tumbling in space and each sound triggers a different pattern of light. In *Solstice*, the person walking through it is opening and closing doors in front of and behind himself, creating moving images. And in *Mud Muse*, the bubbling mud is never still. Although there's always a mechanism that activates the work, he's used the mechanism to bring about infinite variety in all those pieces. In the *Revolvers*, it's the same. Not only do the round disks move in circles, they move independently of each other and the round disks are never in the same relation to each other. The image the piece presents, even at rest, is never the same.

That's what I meant about the artist in this generation having an image or having an idea that he or she wanted to pursue. Then the technology made it possible. The promise of the technology was to fulfill an idea. Not necessarily what it was going to look like because those four pieces couldn't be more different, right? They have this one thing in common that they're always changing—either by themselves or by people interacting with them. That was the other thing. He didn't say, "It has to be interactive." He had two pieces or three, including the *Revolvers*, that were interactive. The viewer participates in creating the image they experience. But they didn't have to be. In fact when Bob started to work on what became *Mud Muse*, he expressly decided not to make it interactive or responsive to the environment. It bubbles to its own sounds.

Q: Makes its own soundtrack.

Martin: As he said, he had to figure out how to get the first soundtrack for it to bubble to. He hadn't thought of that, but he enlisted some musicians and they played sounds to it and they

recorded that bubbling and that became the activating sound. Even *Oracle*, now that it is in a museum and the visitor cannot turn the knobs to change the volume or scan rate, it still is changing.

Q: You can't adjust it.

Martin: The change is built in. Well, just by the radios and the five stations. Just from having more than one station and also having the scanning of the stations not stop at one station.

Q: It's not interactive change but it changes?

Martin: Right. But Bob's original idea was that the individual—the viewer—could change the volume and the rate of speed of the change from station to station. Now it's in a museum, the Musée National d'Art Moderne at Centre Pompidou in Paris. It's too valuable. God forbid people should touch it.

Q: No, I was reading about another—it wasn't a collaboration with Billy—but they were both there. Bob did this piece called *Black Market* [1961] that he took from Amsterdam to Sweden, where people were supposed to take something from the box and leave something of your own and replace it and people just stole stuff.



Robert Rauschenberg
Black Market, 1961
 Combine: oil, watercolor, pencil, paper, fabric, newspaper, printed paper, printed reproductions, wood, metal, tin, and four metal clipboards on canvas with rope, rubber stamp, ink pad, and various objects in wood valise randomly given and taken by viewers
 49 1/2 x 59 x 4 inches (125.7 x 149.9 x 10.2 cm) depth variable
 Museum Ludwig, Cologne
 Ludwig Donation

Martin: Right. Exactly. It was not collaboration but Billy was involved in *Black Market*, in the sense that Pontus had asked Billy to be the American agent to help organize the American contribution to a show he was organizing, *Art in Motion* [1961]. It went first to the Stedelijk Museum in Amsterdam and then to Moderna Museet in Stockholm. Billy helped Pontus visit some of the older artists who had been involved in movement—[Naum] Gabo gave Billy his 1920 sculpture [*Kinetic Construction (Standing Wave)*, 1919–20] to restore for the show; [Alexander] Calder gave Pontus a model of *The Four Elements* [1961], which Pontus constructed in the courtyard in front of the museum, and they found Moholy-Nagy's [*Das Lichtrequisit [Light Prop for an Electric Stage*, 1930] in storage at the Busch-Reisinger Museum at Harvard. And then Billy asked some of the artists whom he was beginning to know in New York to be part of the exhibition. Richard Stankiewicz made a sculpture, *The Apple* [1961]. Jasper Johns lent an earlier work, *Thermometer* [1959]. And Bob made *Black Market* especially for the show.

I think he said that the art moves in and out of the piece. Visitors were supposed to take small objects from the suitcase attached to the painting, add something of their own and record it on the lists on clipboards attached to the surface of the painting. And as you said, people took objects and didn't add anything of their own. I saw a telegram Pontus sent to Billy asking him to ask Bob to send more objects to Stockholm for the opening at Moderna Museet because people in Amsterdam had taken all the ones there. I don't think *Black Market* fared too much better in Stockholm.

Q: Rauschenberg has this statement that they have in the archives about his disappointment that people, when presented with the opportunity to steal—but he still has hope, he says that “the piece could be successful in some form.”

Martin: It's fascinating, isn't it? This idea he put forth—the generosity of people.

Q: That's what made me think of it. Exactly about what you were saying about generosity. Yes.

Martin: Of course, that was very early for the idea of interactive works of art, or for the viewer to participate in the work. Now you'd probably have people dying to put something in. But again, Bob was ahead of his time, totally ahead of his time.

Q: I think I got you to talk about Rauschenberg a little bit.

Martin: I guess I did. The point is I have ideas about him. I don't remember as much really specifically—we were sitting around and Bob said X—whereas there would be other people who do. I remember reactions to things and thinking about him.

Q: But that's helpful.

Martin: Yes, you need the framework.

Q: I'm not trained as an oral historian. I'm a literature professor. But sometimes there's a fetishism in oral history of the anecdote, of the neat little—almost like a pre-made joke with a punch line. That's not the only way that memory works.

Martin: No.

Q: Sometimes you do remember general impressions.

Martin: You have ideas about it. I mean, it's my idea. Maybe, who knows if somebody else has said it? That's not the point.

Q: I don't feel like it's less valuable to talk about these general impressions.

Martin: Yes, I thought that was interesting that you were also asking people about themselves too. Not just about Bob because it's his world as well. That's part of him—the people he knew and the people he worked with.

Q: Yes, to me it makes a lot of sense to approach it that way. It's my sense that the [Robert Rauschenberg] Foundation wants to approach it that way.

Martin: Well, that's good. That's good. I hope I helped you in your conundrum about collaboration. No, because it's an interesting idea.

Q: It's very interesting. I'm going to have to think about it some more. It definitely is helpful and I have to think about it.

Martin: You think about jazz collaboration. Everybody plays his or her own instrument.

Q: Then it's different because you're in the same medium.

Martin: Oh, that's true. That's true.

Q: You're practitioners of sound.

Martin: Yes, yes. You're right.

Q: I teach a lot of jazz and literature. I teach in the Center for Jazz Studies at Columbia. There are people like Cecil Taylor and the artists of this same generation. There's a famous journalist's description of Cecil Taylor's piano playing that describes it as eighty-eight tuned drums. There are people who talk about Max Roach, the drummer, as the most melodic drummer.

Martin: Oh, okay.

Q: The drummer might be playing as lyrically and melodically as the horn player or the pianist. The pianist might be playing percussion, you know? They might, when they're playing together, also to a certain degree, be playing each other's instrument.

Martin: Oh, I see.

Q: Let's not have that conversation. That's a whole other conversation.

[Laughter]

Martin: No. But I do think Billy never thought that he was an artist. He never did. He said it was always a danger if the accountant or the engineer thought he was the artist. The collaboration wouldn't work if people didn't recognize what's an aesthetic decision and respect it and respect the artist and trust the artist. I think he was quite extraordinary and unique in that way.

Q: No, that's what I have to think about because the idea that you can find that line is interesting to me.

Martin: I think curators do. I don't know. You're not talking to David White, are you?

Q: No, but I think somebody is talking to him.

Martin: Somebody's talking to him. You could ask them to ask that question. One of the collaborations is when you're setting up a show. How much the artist is involved and Bob—when he was doing that—that was a huge collaboration. Some of the people that worked with him on artworks. Prints—some of the people at Gemini [G.E.L., Los Angeles] or ULAE [Universal Limited Art Editions, West Islip, New York].

Q: The curator, the stuff's already done. It's just how you're going to display it.

Martin: But it's very important. I think there was a lot of collaboration between Bob with his curators—choosing the work. Which works do you choose? Was Bob involved? I don't know. I agree with you. I think it's another process that the artist is involved in. There, the curator probably has a little bit more to say because they start out by, "Well, let's place this, this, and this."

Q: Right. To me, it feels like a different conversation.

Martin: Yes. Yes.

Q: It really is something I'm going to have to think about some more. I'm not sure there's a right answer.

Martin: It still worries you that—

Q: It's not worrying me. It's a very interesting thing—where that boundary is of what an aesthetic decision is and how you mark that off. To me—part of what's new for me is that I associate, as I was saying, this group of artists, or this generation, with a breakdown of my certainty about where art starts. Even the pieces you've just mentioned, like *Soundings* or *Solstice*, I feel like by bringing the viewer into the process of shaping the environment, part of what they're saying to the viewer is, "You are a participant in the aesthetic decision-making of inhabiting the piece. You're deciding when the sliding doors close or you're deciding, by whether you make noise or don't make noise, whether you can see something." That to me is saying, "Come into the aesthetic decision. You can make an aesthetic decision too." That's why I'm hesitating at the idea that there's—

Martin: Well, of course. That's going from Duchamp's idea that the viewer completes the work of art. That it's not complete until somebody sees it and then the act of seeing it completes it. That brings the viewer in. I think you are part of the aesthetic decision but within a really narrow range. The artist has conditioned the experience. It's not like you can do anything. It's like you walk into *Soundings* and of course you can remain silent. And if so, then your experience is to

see yourself in the mirror. You see yourself as part of the visual image of the piece. If you talk to it or to another person in the room, then you see the lights illuminating the silkscreened chairs. Then if you sing, you get something different. But nothing moves, like *Solstice*.

I also think that an important part of a work is what the artist chooses not to do or not to put in it. For *Soundings*, Bob decided to use only images of a wooden chair, maybe one that had been in his kitchen for a long time. He took many photographs of it and when the lights come on in *Soundings* it does look as if the chair is tumbling around, but it's only one chair. That is an aesthetic decision. He made it in black and white. All these—what I call limitations—lead to a singularity and purity amid the multiplicity of lights going off and on as people talk or sing to it. Of course, it was an aesthetic decision that Bob wanted the triggering devices for the lights to respond differently to different people. But he left it up to the engineers, Fred Waldhauer and Cecil [H.] Coker, to figure out how to split the sound spectrum and choose the placement of the microphones, et cetera.

I see it being about responsibility and commitment. The artist offers you the opportunity to participate in the experience of the work. He makes the experience available to you. It's up to you how much of your time, energy, intellect you want to commit to experiencing the work—to discovering it in, if not all, at least many, of its dimensions. And it's an interesting question about interactive art in the sense that people can't do it for very long. It's really interesting how long a viewer will talk or clap their hands or sing to *Soundings*.

Q: People can't inhabit—be in that space for too long? Is that what you mean?

Martin: No, it's a beautiful piece to experience—to see the lights changing and the images of the chairs tumbling through space—but interacting with it over a long period of time is not easy. Some people have played their violin to it or sung to it. Maybe you're creating that work of art. It's true. You're creating a specific experience, anyway. The art is there to give you an experience. You are creating the experience. It's also Bob's idea of collaboration. He invites the viewer to collaborate with him on creating the experience of the work. So not only does he collaborate with his materials and with the people working with him, he collaborates with his future viewers. But at the same time he gives them the responsibility for completing the piece. It's up to the individual how much he or she wants to commit to working with the piece.

I think you do have a really interesting point, but I think the answer is that the artist has already conditioned the limits of what decisions you, the viewer, can make. You can talk or not talk. If you come into the space and silently stand on your head, then you will see yourself in the mirror, but you won't activate the lights. Maybe I'm being pedantic, I don't know. You can walk into it, or you cannot walk into it. You can't switch the doors around. You can't have it not work.

Q: Well, you could.

Martin: Maybe you're right. Yes, that's true.

Q: That's also about responsibility and commitment. What are the things you don't think you're allowed to do? Why don't you smash the doors?

Martin: Okay. Well then you're in the social context of art, right? You know, the thing about an aesthetic decision—we're talking about decisions in the making of the work of art. I think that's the difference. If the artist wants to make it possible for the individual to keep going and do something that changes the work in some way, that's his decision to do it. I just mean that when you're making it, if the engineer would say, "Well, how about a light here? It's a little dark up there, Bob." Or, "I have a great-looking chair at home that could fit in this piece." That's an aesthetic suggestion that he shouldn't be making. Do you know what I mean?

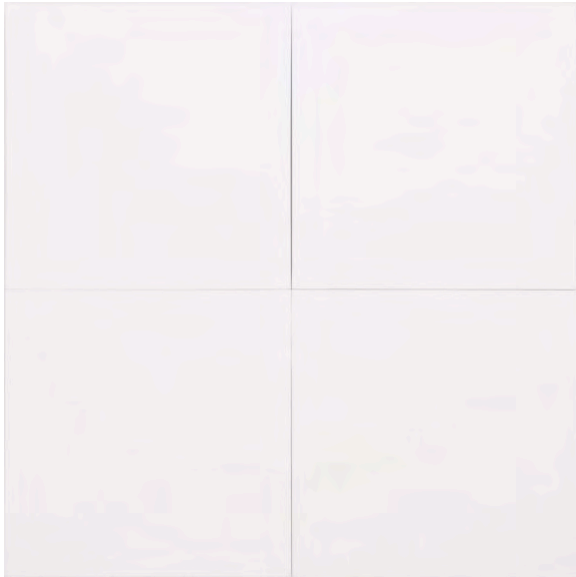
Q: No, I understand.

Martin: But I give you your point. I see your point. I think you're right. I mean the viewer extends the work. You're back to Bob's idea of extending the life of the work. If the work can change anytime someone sees it and it becomes different, then you're really extending the life of it and making it new and fresh each time somebody else comes. That's an aesthetic that you want. You want that aesthetic rather than a painting that just sits.

Q: Frozen artifact, yes.

Martin: Right. But, of course, a painting is always new every time you see it. Very few paintings you can remember to the point of saying, "Oh I've seen everything there is to see." I mean, if you're being serious about it. Maybe a monochrome, maybe the *White Paintings* [1951]. But the shadows change on them; the light in the room changes. They're always different, you know?

It reminds me of the first request Bob made to Billy, when they began to work together in the early sixties—how Bob understood how he could use the technology that Billy offered. Billy has written that Bob wanted to create a room that reacted to the person coming into it—the lights, sound, smell, shape, et cetera would react to the individual. A work that changed, responding to each individual. What Bob envisioned was beyond the technology of the day, but over the next years he explored—with his engineering collaborators—the possibilities that the technology could offer him.



Robert Rauschenberg
White Painting [four panel], 1951
Oil on canvas
72 x 72 inches (182.9 x 182.9 cm)
Robert Rauschenberg Foundation

Q: Well, you've given me a lot to think about.

Martin: Okay.

Q: Well, thank you very much.

Martin: My pleasure, I have to say.

[END OF SESSION]

Transcriber: 3PM

Session #3 (video)

Interviewee: Julie Martin

Location: New York, NY

Interviewer: Brent H. Edwards

Date: August 14, 2013

Q: I'm Brent Edwards and I'm here on August 14, 2013, to do an oral history for the Rauschenberg Oral History Project with Julie Martin. We're in this beautiful, vaulted, old—well, half-of-a-chapel space down on Lafayette Street with a found soundtrack of sirens blaring and construction going on the fourth floor of the building. But we still will be able to have a great conversation. So thank you for being willing to do it and talk to me again, Julie.

I wanted to start by asking you to talk about Billy Klüver and his connection to the art world in the 1960s and how it emerged. How did this engineer get connected to the downtown art scene?

Martin: Billy Klüver. He always loved to say he was born in Monaco because his father had gone to Spain to be a timber merchant and met his mother, who was on the grand tour. They met in San Sebastian and fell in love and got married. But his father got the flu so they ended up at the nearest good hospital, in Monaco, which is now Princess Grace Hospital, and Billy was born there. But two weeks later they went back to Sweden. His father first owned a hotel, on land between two beautiful lakes in southern Sweden in a town called Ed, for a while. And then his father, who was Norwegian and grew up in Steinkjer, Norway, missed the snow and the skiing and so in the thirties he built a ski hotel at a place called Sälen in Sweden. And so Billy grew up in Ed and then in Sälen and then later, when his parents divorced, in Stockholm. He went to the Kungliga Tekniska högskolan, the technical university in Stockholm and majored in electrical

engineering. But he soon exercised his interest in film and, as I said, he went across town to the humanities faculty and joined this student film club, which at that time was very active and one of the more liberal or progressive groups of people in Stockholm. Not as progressive as the Communist party or the Socialist party but still very active. He joined the film club and soon, a few years later, became the head of the film club and was importing movies from the United States. And avant-garde movies—Maya Deren, the Whitney brothers, and some that had already been identified in the forties as being the forefront of independent filmmaking. So he knew that world.

He said he came to the United States because he wanted to see what it looked like. He had seen it in films so he was curious. And in '53, he spent a year in Paris as a *stagiaire* for Thomson-Houston. Worked with Jacques Cousteau on the first underwater television and also installed the first television antenna on the Eiffel Tower. So he was pretty active that year. And when he was old enough not to be subject to the draft, he came to the U.S. At that time, McCarthyism was in full swing, in '54. So he decided he didn't really want to join a lab at that point because they were subject to being invaded by [Senator Joseph] McCarthy [government agents]. And one of the things—actually, I should back up just a little.

For his senior thesis he made a film instead of writing a research paper. He made an animated film called *Motion of Electrons in Electric and Magnetic Fields*. Using the Disney method of the cells, he made these little electrons do what they do when they're affected by these forces. So he got very interested in educational films. He translated his film into English so he had an English soundtrack. When he first came to this country, he tried to pursue this as an idea—educational

films for that higher level of learning. He went to Encyclopedia Britannica in Chicago and to the people in Hollywood but nobody wanted to do educational films at that level. So because of the McCarthyism rampant even at the nation's research laboratories, he decided not to join a lab but to get his PhD. So he went to California and got his PhD at [University of California] Berkeley in three years, partly so fast because he knew the required number of languages and he worked fast. And then he taught for one year.

Then in '58, he was hired by Bell Labs to be a member of technical staff at Murray Hill, New Jersey. So he came east. He continued his contacts with the film people—Amos Vogel in Cinema 16 and some of the other film activities going on in New York. But I think the involvement with the art world came through his friendship with Pontus Hultén, who by that time was director of Moderna Museet in Stockholm. Pontus had also spent a year in Paris but I think it was '54, '55 where he had curated a show called *Le Mouvement* for Denise René gallery. And Jean Tinguely was part of it, as was Robert Breer, who was an American artist on a GI Bill [Servicemen's Readjustment Act of 1944] in Paris at the time. Pontus knew this crowd of French people. Billy said he'd been introduced to Jean Tinguely by Pontus at the Café Royale on Boulevard Saint-Germain as “the man who made anti-television sets.” Pontus sent Billy a letter saying, “Jean is coming to town and he has some ideas. He needs help.” Jean had a show at the Staempfli Gallery, where he showed his *Méta-matic* drawing machines. Billy went to the first show, met him and started talking to him. And Jean said he wanted to do a performance with a machine that destroyed itself. His first idea was to do it in a theater and the audience would be protected by chicken wire or something from the flying parts. But Tinguely met Dore Ashton,

who was a curator at MoMA at the time, and she arranged for him to do this in the garden at the Museum of Modern Art.

There was also a [Richard Buckminster] Bucky Fuller dome on display in the garden and Jean built the sculpture in the dome. He and Billy talked about ideas about the machine and the performance of its destruction of itself. Billy and his colleagues at Bell Labs came up with the idea of a timing device that every three minutes would trigger an electrical signal that could do something toward the destruction. If you put a resistor in a candle, then it could light the candle. And the candle would start burning and then kerosene would fall on the candle. And that would light the piano on fire. The piano would start burning. So then Jean thought of about nine different activities that could lead to this destruction.

At some point, Bob Rauschenberg came by. Now, as I said, I never asked Billy how he met Bob. It was one of these things that you forget to ask. But it's possible at that point. Maybe [they met] at the Staempfli opening because everybody came to these things in those days. But in any case, Bob did come by and see what was going on and he offered to contribute to the machine. And on the day of the performance, which was March 17, 1960, he brought this contraption called *The Money Thrower*, which was a sturdy box with gunpowder at the bottom and coils intertwined. When the gunpowder was ignited, the explosion would fling the coils apart and the dollars, which were stuck between the coils, would be flung into the audience. As I said, I never figured out exactly how it worked. That's for a conservator now to look at that. But obviously, it hooked up to the electricity that the machine was hooked up to and it was one of the events.

Billy's experience with Tinguely made him realize that he, as an engineer, could contribute to artist's work. This could be something that he would like to do very much and that the artist could benefit. So he began to talk to people he met, like Jasper Johns and Bob Rauschenberg; "Is there something you want to do that could use the technology that I know about?" Bob had some ideas and they started talking. Bob's first idea was an environment that would respond to the presence of the viewer but the technology wasn't up to that in 1960. He and Billy settled on a sound piece. He'd done a painting, a Combine painting, I guess, in 1959 called *Broadcast*, which had a radio behind the canvas and knobs in the front that connected to little pulleys in the back. By moving the knobs, you could adjust the sound and I think you could adjust the scan rate. Bob had the idea to do this on a bigger scale—a large painting with five radios and the controls would be in front of the painting and people could turn knobs and control the sound. He wanted the control console further away from the painting but he didn't want any wires connecting it to the painting so, again, the technology in those days wasn't developed enough for Bob's idea. He wanted to use the AM radio band because that was where all the lively stations were located and he wanted no wires. So that AM signal came in through the radio and then they tried to retransmit the signals, either on AM or on FM, but the interference was horrendous so it wasn't really possible with the first system they constructed. Bob got a little impatient and the painting went out of the studio as *Ace*. It's a five-part painting called *Ace* and it went into the world as a painting. Bob decided that the work would be a five-piece sculpture.

One of the things that did come out of this early work was a small sculpture called *Dry Cell*. It's a piece that hangs on the wall, a kind of wire frame with a Plexiglas front with images silkscreened on the Plexiglas. There's a microphone mounted on the Plexiglas and if you speak

into it, a little metal thing behind the Plexi turns. And the more you speak, the faster it rotates. It may be the first interactive work of art. This piece may have come out of Bob working with Billy and Harold Hodges on some of the technology they were working on for *Oracle*. That was '63. So then slowly technology caught up to them and by '65, Heathkit had wireless FM transmitters that you could build that they could use for the piece. So then the five radios were located in one piece, a staircase that Bob asked Billy to have fabricated. The FM wireless transmitters were in the stair piece, transmitting sound from the radios to amplifiers and speakers in each of the other four pieces. So that *Oracle* was ready to go. And it was shown at Castelli in May of '65, the same day Billy's daughter was born. He went from the hospital to the opening.

But during this period, he began to work with other artists. Jasper Johns wanted a neon letter. But again, he didn't want wires to connect it to the wall. So, again, working with colleagues at Bell Labs, they devised a—using a car battery and a step transformer, they could transform it from DC to AC and bring it up to the number of volts you need to power a neon tube letter. The first one was an R for *Slow Field* [1962] and then he wanted an A for another painting. Billy was waiting for the T but Jasper never wanted the final T.

Billy worked with Yvonne Rainer, who wanted the sounds of her body to be heard as she was dancing. And so they used a microphone that could fit at her throat attached to a small FM transmitter—again, built from scratch—that she wore at her waist. There was no such thing as wireless mics in those days. The sound of her breathing went to the transmitter and then was transmitted to the speakers.

Q: So in a sense, they invented the wireless.

Martin: In a sense, yes, I think so. Not realizing—since they were in the kind of downtown scene—not realizing that this was something that Broadway could actually use or would be interested in. And then Billy worked with John Cage and Merce Cunningham on *Variations V* [1965], which was to place electric eyes on stage, aimed at lights offstage. When the dancers broke the beam, a sound was triggered in John's very complex sound system.

Billy was thinking a lot about the whole idea of the engineer working with the artist. And his first idea was—two ideas, I think, were coming together. One, he could offer the artist a new palette. This was in some of the early writings. He talked about a new palette that would expand the possibilities for the artist to work with more contemporary materials and be active in society as it was developing. But very early on, from reading C. P. [Charles Percy] Snow, *The Two Cultures* [1959], Billy very much was looking for a way to invigorate engineering. I think he felt that engineers had to be—at that point, engineering was quite monolithic and the businesses were very monolithic, the telephone company [Bell Labs], Philips, Thomson-Houston. And so the idea of how do you invigorate the engineers was important to him.

When he began to work with artists, I think he saw that, a-ha, the way the artist works—not the art but the way the artist works—and the kind of attitudes the artist has toward what he or she does excited him. He saw the artist as being a kind of conduit to get the engineer involved in new ideas and new possibilities. And then as he began to work with Bob, he realized the possibilities of collaboration. He said very much that he went from this idea of the engineer offering

something to the artist—the idea that the two would collaborate, one-to-one, two professionals. Two people in different fields but collaborating on something where the outcome might be different from what they started with. I mean, it always started from the artist, obviously. The artist had an idea. Bob's idea to do a sound piece with certain parameters. But the engineer's contribution from his own profession, and having him think outside what he normally did every day, could invigorate him in his own profession. But the idea was the collaboration. I remember hearing it when I first got involved. This word was very strange to me because at that point, the only collaboration you knew about was like World War II and it was a negative word. You know, collaborating with the Nazis, for example, in France. It was interesting that this must've been a really new concept because even the word was something that—as far as I knew, at least—wasn't in common parlance. So I think the beginning of this whole idea of collaboration started with Bob and Billy and was very much influenced by Bob's attitude toward the way he worked.

[INTERRUPTION]

Q: In terms of that invigorating effect—that impact on the engineer—do you think for Billy it was more a matter of being exposed to the process? Seeing the way the artist works? Where it's not about the kind of corporate demands of Bell but it's a different kind of process where it's still problem-solving but you're solving a different kind of problem. Or was it about the collaboration, people in different fields working together? And that has an impact on you because you think about what you do as an engineer in a different way. Or was it about the mindset? Was it more about the art that's emerging from this stuff is changing the way the

engineer potentially sees the world? Because it's interactive art: you're speaking into it, you're hearing it, you're walking through it. Do you see what I mean? Which—or is it all of those?

Martin: Well, I was about to say all of the above, but not the third one. First, I think the process—just being involved in working with an artist and working outside the lab, working in kind of a dirty situation as opposed to, say, the clean, well-organized lab, would have the engineer use his skills differently. But I think Billy felt certain things about the artist, the way the artist works. First, taking full responsibility for the work. In other words, an artist doesn't make any excuses for what he or she shows. "Oh, I would have done it better if— If my boss had given me more time—" So this idea of responsibility, commitment. You're committed to a project, you're committed to a process. These are the kinds of things that the artist had. The sense of scale—human scale. And focus on the individual. Billy thought it was an important thing that the artist was sensitive to. The economy of means that the artist works with. There are no superfluous elements in a work of art. I mean, the painting or the sculpture, it's what has to be there—what he or she wants to be there. There's nothing superfluous or decorative, necessarily. So it was, I think, the process and certain aspects of the way the artist works and the artist's concerns that Billy thought could inspire engineers to think differently, to think more about the individual, think about things that suited the individual more. The art—there's no sense that you had to understand the art. I mean, you were an engineer and this was an artist and these were two professionals who could come together solving a problem, working on a project.

I think what's really interesting, now that I've been studying it, is the breakdown of the situation where—the artists were supposed to go to Sweden for the Festival of Art and Technology, which

happened in '66—the breakdown between Billy and Knut Wiggen. Knut Wiggen felt the artist working with the technology would introduce the technology to the public and bring the public or the person looking at the work up to speed about what's happening in the world that has been changed by the technology. And I think Billy's idea as an engineer and knowing what the artist was working with—the artists were not working with leading-edge technology. He felt the technology should be almost invisible. What was important was the work of art that came out of it, not that this was some message about technology. Or the fact that it was better because it was embodying new technology. It really was the final work of art, the final image. So I think your last idea is not part of his thinking. The importance of the collaboration didn't have to do with the art as instruction. It had to do with the process and the commitment to a process and the commitment to building or realizing something.

Again, that's why he very much thought about artists and engineers working together without emphasis on scientists. Because he felt science is much more abstract and much more about thinking, whereas the artist and the engineer were both hands-on kind of people—and again, committed to problem-solving. “Let's get something done. Let's make something.” So although E.A.T. talked about artists, engineers and scientists, the focus was really on engineering.

Q: Well, let me ask you one more question about this same topic. And then let's get to E.A.T. Going back to the Tinguely, even, I'm interested in how Billy sees his role as an engineer. And going back to the Tinguely collaboration, my understanding is that Billy wasn't just making circuits and arranging explosives and timers but he was, to a certain degree, scavenging in dumps in New Jersey. So where's the limit for Billy's—of the engineer's—role? Where is it

distinguished from the artist's role? Was there a point where Billy would say, I don't feel like I should be deciding which bicycle is the right one to bring back from the dump? Or was that a question in his mind at that point, do you think?

Martin: Well, Jean started by saying, "I want bicycle wheels." So that was a mission, for Billy to find bicycle wheels, which he finally found in a shop in New Jersey. Some guy was getting rid of a whole basement full of wheels that they just brought and threw over the wall of the Museum of Modern Art at night. In that case he provided Jean with as many bicycle wheels as he could and Jean could choose how or whether to use them. Jean asked to be taken to the dumps. Jean went with him to the dumps and Jean picked stuff he wanted. I remember him saying he was always surprised at what Jean chose. The piano—I think Jean wanted a piano. Maybe somehow [an] addressograph machine came up as a possibility. But I'm sure Billy would ask Jean, "Is this something you want?" I think he was very sensitive or very aware of what's the artist's role and what's the engineer's role. And he never thought he was the artist. Never thought he was. I mean, you could suggest something. Or you could [say], "Here's some batteries." I think with Bob there was a problem that the only batteries he could get from Bell Labs were bright red and he thought, "Oh, dear." So Billy brought them to Bob's. He said, "What do you think?" And Bob said, "Yes, those are great."

But he was sensitive to what was an aesthetic question and how the artist worked. As I said, much later when they renovated or restored *Oracle*, the engineer Per Biorn, who was very active in helping to restore these pieces later on, discovered you could do digital tuning. He could make it so the spectrum went digitally from station to station. But Billy asked Bob, he said, "Per can

do this; what do you think? “ And Bob said, “No, I want analog tuning. I want that noise in between stations. I want that sense of noise.” But he did okay other changes. When the French government opened up the FM spectrum to many new stations, he was willing to change the radios from AM—which had been the most populated spectrum in the sixties and seventies—to FM, which made it easier to get the signals into the Centre Pompidou. Then at one point when they were restoring *Soundings*, Bob was fine with Per’s ideas for updating the mechanisms that triggered the lights off and on. At the same time, Billy asked him, “The mirrors have gotten yellow. They are beginning to oxidize. Do you want new mirrors?” Because when you walk in, all you see is yourself in the mirror. Bob said no. He wanted to keep the original mirrors. He saw this as part of the aging process. So the original mirrors remained. So the point is that Billy always asked the artist when there were choices to be made, even what might seem to be pure engineering choices. I think Billy was really active in drawing the line between an aesthetic—what was the artist’s decision and what was his decision.

Q: So you can make, as an engineer, suggestions about aesthetic matters but the artist, to a certain extent, had veto power to say, “No, we’re not going to clean up the mirror, we’re not going to replace the mirror.”

Martin: Right, exactly.

Q: Or whatever the case may be. That’s what that distinction is for him?

Martin: I think so.

Q: One other question about this early period and that's the other side of Billy's life, which is the engineering side. We talked about this the other day when we were talking but I wanted to get you on tape here talking about it. How did this go down with Bell? So here's an engineer who is supposedly working. What was their reaction to someone who got very involved in the art world? We were talking about the number of hours the engineers were spending on 9 Evenings. How did that work in terms of their day jobs?

Martin: Well, first, Bell Labs was a really unique place back then. It was the premier lab for electrical engineering and communications. And it was supported by the fact that AT&T was a monopoly and a regulated monopoly. I mean, protected by the government but also regulated by it. And also, it was vertical. You had AT&T that provided all local and long-distance service. You had Western Electric, which built the equipment. And you had Bell Labs, which developed it. And so there was this kind of flow between all of the divisions of the Bell system. Bell Labs did research for all branches of the Bell system, from developing methods and educating incoming telephone operators to designing and building digital switching systems. And the labs itself was very open. Once you were a researcher, you could choose to a certain extent what you were doing your research on, and you could come and go as you wanted so long as you did some research.

Bell Labs actually also had an artist-in-residence program. They invited—especially Max [V.] Mathews and John Pierce—musicians to do computer music. Lillian [F.] Schwartz worked with [Kenneth C.] Ken Knowlton at the labs and they collaborated on films, on digital filmmaking. So

the researchers who were interested in music and film had their programs and sometimes invited artists to work at the labs. But Billy's contacts were with New York and very much outside the labs. He brought artists to visit the labs but Bell or AT&T never sponsored what he did. So most of 9 Evenings, which was this—we can talk about that later—was done by the engineers at night, weekends, and vacation time. Toward the end, the week or so before the opening, the engineers took vacation time in order to work on it.

Many years later, in the nineties, Billy asked John Pierce, “You saw that all this energy was going into this outside project. Why didn't you stop it?” John Pierce replied that people were so positive about it and there was such a positive energy that if he'd stopped it, it would have had a very negative impact. So he understood the positive value of working on projects with artists. And actually, even earlier when Billy worked with Tinguely in 1960, he told [Rudolf] Rudi Kompfner, who was his boss right above him, but he didn't tell John Pierce. And of course, it was written up in the New York papers, “the machine that destroys itself.” It was in the *Times* and in the [*New York*] *Post*. And the day after, John Pierce rushed into Billy's lab. And Billy was like, “Uh-oh, this is it.” And John Pierce said, “There's only one thing wrong. Why wasn't I invited?” Then, of course, Pierce went to Stanford [University, California] to the music department—he and Max Mathews—when they retired from Bell Labs. So these two supervisors were very interested in the intersection of engineering and art.

Q: Why don't we go towards 9 Evenings and the founding of E.A.T.? It's interesting, as I have been rereading this history—this narrative, this chronology—the degree to which Sweden plays a crucial role in this entire engineering part.

Martin: I think certainly with Billy over the years there was a kind of dialogue with Pontus. And then also Fylkingen, which was a contemporary music society in Sweden. But the music world adopted the new technology really early. With the advent of the transistor and electronics and the change from vacuum-tube technology, so much of it impacted sound: making it, recording it, playing it, broadcasting it, et cetera. I mean, you had a new music program at the WDR [West German Broadcasting] in Germany with [Karlheinz] Stockhausen and those people inviting Cage in '57, '58 to come and work there—the Darmstadt [International] Summer Course for New Music. So in Europe, in particular, you had this interest in technology from the music side.

To go back to '65, Billy had worked with a number of these artists. He really wanted to expand his activities but he didn't quite know how to do it. So he started out by thinking to write a book, "Engineering and Art." He began by writing to artists he knew, asking, "What ideas do you have using new technology?"—thinking that he could introduce artists' ideas to the engineering community. Then Knut Wiggen, who was head of the Fylkingen music society in Stockholm—probably through Pontus, or maybe he knew Billy independently—contacted Billy with the idea of an American participation in a festival that he was planning called Festival of Art and Technology: Visions of the Now. Could there be an American contribution to this? He wanted to meet John Pierce and invite him to participate along with Buckminster Fuller and Marshall McLuhan. His ideas were a little bit abstract or intellectual. But anyway, Billy went to Bob and said, "There's this opportunity, what do you think?" And Bob was really excited about it. They put together a group of their artist friends. Billy recruited people at Bell Labs, whom either he had worked with or he knew were experts in certain areas that could be applied to performance,

and the artists and engineers started meeting to find a way of working that would lead to performances that incorporated the new technology. They began meeting and working together in January of '66. And, as I said, unfortunately there was this intellectual difference between the Swedish and American groups that became more and more pronounced and magnified. So the relationship got— When these things happen, everything becomes a problem. From how do you publicize the festival? And how many engineers do you bring to Sweden? So it just became very, very difficult.

By July it became clear that the American group really was not going to go to Sweden, at which point, in true American style, they said, “Okay, let’s put on the show here, folks. Let’s put on the show here, kids.” The typical Hollywood movie. So they decided to hold the performances in New York. And Simone Forti found the 69th Regiment Armory on Lexington at Twenty-fifth Street and everybody liked it because that’s where the first Armory show in 1913 was held, which introduced European art to America. Despite the fact that it had a six-second echo. So if you stood too far apart, you couldn’t hear each other clearly. Of course, Cage and Tudor made great use of this reverberation time but it made things a bit more difficult. So they decided to do the performances there.

Q: And by this point, you yourself are working with Whitman so you were involved?

Martin: Right. This is how I came on stage, so to speak.

Q: Maybe tell us about your own involvement and your memories of the buildup to 9 Evenings—at least the Whitman part.

Martin: I graduated from Radcliffe in '60 and I came to the Russian Institute at Columbia for a master's and what they called a certificate degree. But I got more interested in looking at things in New York and doing things in New York so I wasn't the best student. But a guy I was going out with, Robert Fagan, who was a poet and an independent art historian, knew Bob Whitman from Englewood. Bob Fagan was a little bit older but his brother had known Bob and a kid named Hugh Mitchell. So when Whitman put on a performance called *American Moon* in December of 1960, we went to it.

I should also say that Bob Whitman knew Bob Rauschenberg very well and he should be another person that you all should get hold of. We were talking about *Monogram* [1955–59] and he remembers seeing it in the studio when it was on the wall and not on the ground. So I realized he had known Bob early on.



Rauschenberg in his Pearl Street studio with *Satellite* (1955) and the first state of *Monogram* (1955–59; first state 1955–56), New York, ca. 1955. Robert Rauschenberg papers. Robert Rauschenberg Foundation Archives, New York

But anyways, we went to *American Moon* and I had no idea really what was going on. It was completely different. But I do remember it. And we stayed friends through those years. In the summer of '65, I was still at but not really going to Columbia. Bob Whitman got a chance to put on, at the Circle in the Square, every weekend, a piece called *Prune Flat*, which was a movie piece, which—I should go back and say—he did in December of '65. He, Bob Rauschenberg, and Oldenburg did an evening as a benefit for the Film-Makers' Cinematheque run by Jonas Mekas. And Bob Whitman did *Prune Flat*, which was a cinema piece. Bob did *Map Room II*. And Oldenburg did *Moveyhouse*. So I had seen some of Bob's work. Also in May of '65, Steve Paxton organized a series of performances he called the First New York Theater Rally. And again, Robert and I went to that. Bob Whitman did *Nighttime Sky* and Rauschenberg did *Spring Training*, with the turtles with the flashlights on their backs. So I had begun to see stuff at the time.

Then, when Whitman had this opportunity to present two performances every weekend during that summer at the Circle in the Square Theatre on Bleecker Street in Greenwich Village, I worked as stage manager, which means I swept up the broken glass from the broken light bulb in *Prune Flat* and I helped stuff Steve Paxton's suit with colored powder for the ending of this piece he called *Untitled*. That was '66. So the work on *9 Evenings* was going on that summer but I really wasn't part of it and I didn't know about that. But when it came time—when Bob Whitman started thinking about a piece for it—right, in the summer of 1966—he wanted films. So he asked me to find films for him. In particular, I remember he asked me for a film on penguins. And he asked for a nature film. In those days, a lot of the schools were de-accessioning 16-millimeter films. I guess they were old or they were getting new ones. So I found a place on Fifty-seventh Street where you could buy 16-millimeter educational films. Bob used one of those, a film on a splenectomy, in the *Untitled* piece. Then for the new piece, which he was getting ready to do—probably *9 Evenings* but also he did it for *Midsummer*—he wanted more films. Christophe de Menil sponsored a series of performances in East Hampton called *Midsummer*. That summer Bob Whitman did *Two Holes of Water*. I think Twyla Tharp did something. Tony Conrad showed the film, *The Flicker*. And La Monte Young performed that summer. But she did a whole series and so I worked on that with Whitman.

When the *9 Evenings* started, I sort of naturally came around and worked with him but also I got drawn into being a volunteer. Because it was insane. They moved into the armory on October 5th and the first performance was the 13th. So people had to rehearse while the space was being turned into a theater with bleachers, lights, speakers, the special rigging needed by different artists. It was just totally insane so everyone got involved. One of the things I remember doing

was soldering connectors onto audio wires, tiny plugs onto audio wires. Because even though a lot of the equipment was wireless—there were wireless transmitters and wireless amplifiers and wireless mics—you still had to get the sound from, say, the FM transmitter to speakers that were up in the balcony. So miles of audio cable all of a sudden were needed. And everyone got recruited. Even John Cage spent a session soldering tiny plugs. I also worked with Pontus on the program, helping to edit it and going to the printer with him. Pontus was here at the time and designed the catalogue.

Q: Do you remember the presence of the engineers? I'm not clear on whether you knew Billy personally during that period.

Martin: No, I didn't know him. I didn't know him at the time.

Q: And do you remember the presence of the engineers and how they were in the midst of that preparation?

Martin: Well, they had set up a control room and were working. Everybody was working like mad. So I don't really remember anything specifically.

Q: What about the individual pieces? The Whitman piece was the one with the cars and the projector.

Martin: Right.

Q: Can you describe some of the individual pieces?

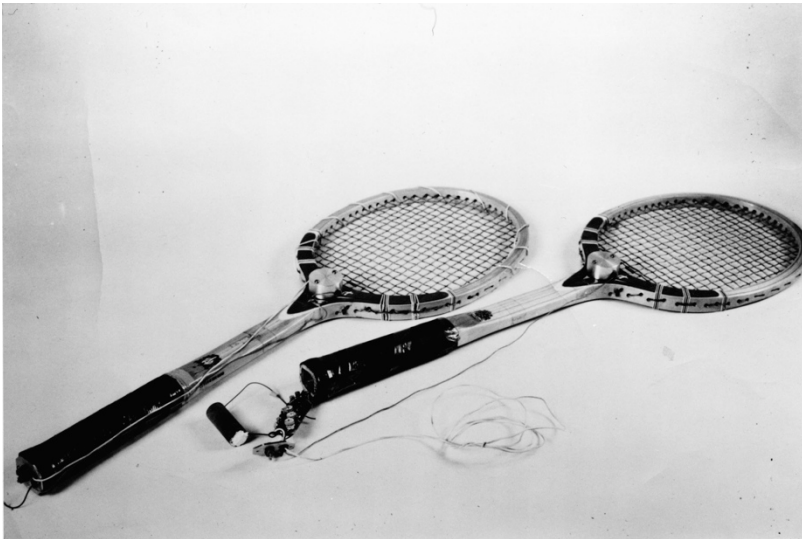
Martin: Bob's piece was extraordinary.

Q: And that one as well.

Martin: Bob Rauschenberg. There were so many Bobs in those days. But Bob Rauschenberg's piece, it started with a tennis game on the floor of the armory. Frank Stella and Mimi Kanarek, who was Frank Stella's tennis pro, played tennis. The rackets had been modified so that the handle was drilled out and a very small FM transmitter was put in the handle of the racket connected to a contact microphone at the head of the handle. Then around the outside of the racket was a wire antenna. So every time the racket was hit, a very loud "bong!" went through the armory and a light went off. Frank and Mimi played until it got completely dark, at which point a crowd of five hundred people that Bob had recruited from the Downtown Community School and maybe another school—he said, by contributing to their scholarship fund, the parents volunteered—and they came out onto the stage in the dark. The space was lit by infrared light and there were infrared sensitive cameras picking up the activity and projecting it to three screens hung above the audience. So you could feel the presence of this large crowd but you couldn't see it. You could only see them on screen. And then Bob had very simple instructions that he signaled from the balcony.



Mimi Kanarek and Frank Stella on the tennis court in Rauschenberg's *Open Score*, 9 Evenings: Theatre & Engineering, 69th Regiment Armory, New York, October 1966. Still from *9 Evenings: Theatre & Engineering* (1966). 16 mm, black and white, 25 minutes. Produced by Experiments in Art and Technology (E.A.T.), New York



Sound-wired tennis rackets used in Rauschenberg's *Open Score* at 9 Evenings: Theatre & Engineering, 69th Regiment Armory, New York, October 1966. Robert Rauschenberg papers. Robert Rauschenberg Foundation Archives, New York

I think David White may have talked about this because he was one of the signalers with flashlights. Two flashlights meant something, three flashlights another. So things like: hug the person next you; take out a white handkerchief; sing a song; turn around. There were very simple movements that people could do. Then at the end—the first time Bob did it, that was the end. The lights came up and the people bowed. But then he said that he felt it was too harsh somehow. So he added a third section. When the part with the people ended, they just went off

the stage in the dark. Oh, one thing. The first night, as they came in, they were asked to say, “My name is—” And so you had this series of names of people—“my name is so-and-so—my name is so-and-so”—that played over the speakers during the section in which they performed. He had also asked the engineers to tape-record the people saying their names and planned to use that tape for the second performance. But somebody lost the tape— No, they recorded over the tape because they were recording every night. So only about eight names were left. So I think he recorded and played the sound of the loud “bong!” the second night. And the second night he also added a third part. When the crowd was finished, they left the space in the dark and a spotlight followed him and Simone Forti whom he had put in a cloth bag that he carried to different parts of the armory floor. He would put her down and then pick her up and carry her to another part of the armory, as she continued to sing a Tuscan love song that echoed throughout the armory. I remember that, actually, this was something they had done kind of for fun at the after party in December, after the performances on Forty-first Street. I remember that Claes and Patty were doing improvised scenes on the stage. The curtain would open and they’d be in a certain position; then it would close and open to another pose. So they were doing sort of an impromptu performance. What Bob did, he put Simone in a bag that was lying around and then carried her through the party while she was singing. He must have remembered that image and then incorporated it into the piece the second night.

Q: That prior December was the after party for Oldenburg, Rauschenberg, and Whitman?

Martin: Yes. When Bob did *Map Room II* and Whitman, *Prune Flat*, right.

Q: So the origin of one part of 9 Evenings. One thing that occurs to me is, do you think that the presence of dancers—so many of the choreographers and performers crucial to what becomes the Judson scene in the early sixties are so close to this group of visual artists, of sculptors, and painters. Do you think that had a serious impact? And Simone—it's partly that some people are together but partly that you have movement artists working so closely with visual artists. I was trying to think of an equivalent. I think of things like [Igor] Stravinsky's Ballets Russes.

Martin: The Ballets Russes and Ballets Suédois but they were not quite the same. In those cases you had strong impresarios—[Sergei] Diaghilev and Rolf de Maré—commissioning artists and composers and choreographers to make very finished works for a very elite audience. The artists were advanced avant-garde artists and some of the work was shocking to its audience, like [Vaslav] Nijinsky and *Rite of Spring* in 1913. But the goal was working together for very finished works for a ballet public. They were professional dance companies.

Q: But it seems like there are a lot of dancers around and then you start having people like Rauschenberg and Frank Stella moving in ways that might not have happened twenty years or thirty years before.

Martin: Well, Bob asked Frank Stella to play tennis in *Open Score* with Stella's tennis teacher. Bob may have considered tennis as dance but Frank played it seriously. But of course, the history is—the Judson started with young dancers and choreographers working in new ways finding new ways to make dance. Yvonne and Steve and people. Well, [Robert E. "Bob"] Dunn, Judith [Dunn]'s husband, Bob.

Q: Of course it's Bob.

Martin: He was a musician who was working as a piano accompanist at the Cunningham Studio. He'd been at the classes John Cage gave at the New School [New York] in 1957 and '58 and Cage asked him to give some classes in dance composition at the Cunningham Studio. Dunn used many of Cage's ideas and techniques in the composition assignments he would give the dancers in his classes. And a lot of the younger people took this class: Steve Paxton, Yvonne Rainer, Deborah Hay, David Gordon, Elaine Summers, and Lucinda, a bit. Dunn told them to bring finished work to class. As they got more and more interested in doing this kind of work, they wanted to show it somewhere. So Steve and Yvonne went to see the Reverend Howard [R.] Moody at the Judson Memorial Church, which was an activist liberal church in Greenwich Village. Tom Wesselmann, Claes Oldenburg, and Jim Dine had had a gallery space in the basement of the church in 1959 and 1960 and had done some performances there before the Reuben Gallery opened. In 1962, they met with [Alvin A.] Al Carmines [Jr.], who had been hired to work with the arts, and they welcomed the dancers, gave them the space to rehearse and then to do performances in the gymnasium and later in the sanctuary. In July 1962, they performed the First Concert of Dance at the church. And I don't know when Steve got together with Bob but Bob and Steve were living together during this period. And I don't know how involved Bob was in this Judson thing. Yes and no. But I think he did some lighting or helped with what costumes were used. So he began to know the dancers.

But he made his first performance, *Pelican*, in 1963. The story is that it was almost by accident. Alice Denney was doing a Pop art show in March of '63, again, through Billy. Billy had gone to see her in Washington in the fall of 1962 during a technical conference he was attending and when he heard she was planning a show for the Gallery of Modern Art in D.C., he put her in his car and they drove to see the show he had helped organize in Philadelphia called *Art 1963—A New Vocabulary*, a sort of proto-Pop show, which included Bob R. and Johns as well as Breer and Fahlström and the more classic Pop artists like Roy and Claes. Her show was called *The Popular Image* and had Bob and Jasper as well as more of the pure Pop artists. Billy worked with her and made interviews with the artists in the show and produced a 33 [1/3]-rpm record with the interviews with a cover by Andy Warhol. And I think he already knew about the performances and dances at Judson and I think he encouraged her to do performances. So she began to organize performances for what she called the Pop [Art] Festival. And Bob R. says that his name was put down as choreographer by mistake on a press release so he decided he had to do something. And that's how *Pelican* was born. That was rehearsed a lot at a skating rink in Brooklyn. He decided to make it hard for himself—put himself on skates—and he asked Per Olof Ultvedt, a Swedish artist, to skate with him. But then he enlisted Carolyn Brown, who was this gorgeous dancer with Merce, and he put her in a sweatsuit and back *en pointe* so he was playing with these idioms of dance.



Rauschenberg performing his *Pelican* (1963), First New York Theater Rally, former CBS Studio, Broadway and Eighty-first Street, New York, May 1965. Photo: Peter Moore © Barbara Moore/Licensed by VAGA, NY. Courtesy Paula Cooper Gallery, New York

From the very beginning, *Pelican* was called dance. He had taken part in other performances before *Pelican*, in an event in Paris in 1961, *Homage to David Tudor*, a collaborative work. He and Johns and David Tudor were joined by Tinguely and Niki de Saint Phalle and in March of the next year, he joined Tinguely and Niki again and made a set for Steve and Viola Farber as part of Kenneth Koch's play, *The Construction of Boston* [1962], where Billy also participated—he and Öyvind playing Napoleonic soldiers. So by the time of *Pelican*, Bob was ready to do performances. He has said that painting began to lose its power to put him on the spot. He was attracted to live-ness of performance. As he said, he wanted “that awful feeling of being on the spot, having to assume responsibility for that moment, for those actions that happen at that particular time.” He began to make pieces for Judson Dance Theater and in his pieces, he asked friends to participate. You ask Trisha, you ask Steve, you ask Alex and Deborah Hay to be in your pieces. I don't think they thought, “Oh, I'm a dancer—I can't be in something where I don't dance.” You know, someone asks you and you come and you do it. It did change these categories but I don't think anybody was thinking that way. They were thinking, “I'm a friend of Bob's. I'll

be in his piece— I'm a friend of Whitman's. I'll be in his theater piece." Steve was in this theater piece in the summer of 1966 because Steve was around and Whitman asked him.



Niki de Saint Phalle,
Rauschenberg in costume, Jean
Tinguely, Marion Javits, and
unidentified man after
performance of *The Construction
of Boston*, Maidman Playhouse,
New York, May 4, 1962. Photo:
Billy Klüver



Jean Tinguely, Henry
Geldzahler, Marion
Javits, and Billy Klüver
after performance of *The
Construction of Boston*,
Maidman Playhouse,
New York, May 4, 1962.
Photo: Sam Kron

Q: Another way to narrate it would be to say that it originates in Black Mountain and that kind of cross-media collaboration that is so prevalent in that space in the fifties. And even more specifically, you could argue that it comes out of a Cage-Cunningham aesthetic. I wondered

whether either of those—whether you would say that this kind of cross-fertilization originates with the Black Mountain scene or originates specifically with the Merce Cunningham [Dance] Company? And that you have Cage and Cunningham working so closely together and then people like Rauschenberg, Andy Warhol, coming through and working with the company. And then some of those people spiral off but keep collaborating.

Martin: No, I think it comes out of themselves. I mean, obviously, people talk about the first Happening was this thing that they did at Black Mountain where they put together—Merce danced, people stood on ladders and read, and Bob hung his *White Paintings* and showed films, possibly. They're not quite sure. Either he hung *White Paintings* or showed films, or both. But they did other theatrical performances at Black Mountain. Cage played [Erik] Satie. And then Bob worked with the Merce Cunningham company from 1954 on, for ten years, doing sets and costumes and lighting, through the world tour in 1964.

I think it's more natural to people that are really interested in the world around them—interested in doing interesting things. Obviously, Cage was really important. I mean, Bob talks about this idea of permission—that Cage, in a sense, gave people permission—but permission to explore things that interested them. And I think people like Steve and Trisha, Lucinda—they were dancers, choreographers. They were making dances. It's possible that the fact that Robert Dunn was teaching Cagean ideas applied to dance composition, you can read—I'm not an expert on what they actually did—it sparked something in these younger people to make dances based on new ideas, on normal movement—on task, not on virtuosity. But I think it also came out of them and it was sparked possibly by this open situation, or openness to all possibilities. But I'm not an

art historian so I don't like to draw this line. And of course, Cage and Cunningham, although they worked closely, Cage did the music and Cunningham did the dance. And somebody else did the sets. And that, of course, goes back to Diaghilev and Ballets Russes so you can go all the way back to that. Picasso's sets and costumes for *Parade* [1917] and all throughout the twenties.

But I think Cunningham had his own very specific aesthetic for collaboration. He incorporated chance methods into making his dances and asked composers to make music for the dances but the two processes were completely separate and only came together at the rehearsals. The same for the sets and costumes. They were developed independent of the choreography and music. And the Judson Church situation, they were all taking a step into the unknown and it was more fluid and it was more about friends working together, exploring together. They were all younger and they would be in each other's pieces and they would help each other out.

Q: Coming back to the engineering and art connection, is it your sense—I should have asked you this before—that it's unprecedented? In the 1920s, you think of something like *Ballet Mécanique* [1923–24]. A composer like Stravinsky or Satie, they could have been hanging out with engineers, but is your sense that this is the first time that you really had somebody from a place like a Bell Labs, a person like a Billy, coming into an art scene and working directly with artists? Did it ever happen before?

Martin: Again, I'm not an art historian so I can't—I mean, people who built things like Gabo, the early Gabo. Who knows? He could have done it himself. Calder himself was an engineer. Gabo did it and [inaudible]. It's also a Bauhaus idea. The Bauhaus people who came over and ended

up in Chicago with the New Bauhaus, and then architecture. So some of these ideas of the melding of disciplines came from this Bauhaus influence. But it's funny. There was a resistance to this melding of mediums. If you talk to Alfred Leslie, I remember he was a painter and then in 1959 he made a film, *Pull My Daisy*, and then *The Last Clean Shirt* [1964]. And he remembers that there was a lot of criticism: you can't be a filmmaker and an artist, you can't do this. This was like '59. Early on, there were these—you are separate. You're a filmmaker or you're an artist or you're a dancer. So something shifted and I don't know if there were engineers. But I think specifically some of Billy's ideas—it probably was the first time someone thought about the idea of using non-art technology in art. I mean, art has its own technology—paint chemistry, sculpture, mold making, bronze casting, printmaking, the whole thing. There's a huge amount of technology in art itself. But this idea of technology that comes from outside art and is incorporated into it, I think this probably was a new idea. And certainly people responded to it. I mean, it got responded to quite extraordinarily.

Q: Let me ask you to tell the E.A.T. story, which we haven't quite done. Because it precedes 9 Evenings. So why was E.A.T. founded? The Swedish Festival of Art and Technology initiative falls apart. Can you narrate how—

Martin: Recently, the Foundation for Contemporary Arts—which was initially called the Foundation for Contemporary Performance Arts and was started by Cage and Jasper Johns in 1963, initially to support a season of Merce's in New York but then expanded to support performance in general—had their fiftieth anniversary. So they started looking at their archives. I was very interested in it and they came to me because actually, the Foundation for Contemporary

Arts was like what would now be called fiscal sponsor; we didn't have those words in those days. They helped sponsor it and the money went to them so that people who donated to it could take a tax deduction.

I think very early on, as soon as the artists got started, Billy kind of wanted the American group to be independent and he saw that there wasn't the kind of support or enthusiasm for what they were doing in Sweden. So very early in May, he started going to people to raise money for the American side. Walter [K.] Gutman, who supported dancers, and Vera [G.] List and people like that, people he knew. He began to raise money and it went to the Foundation for Contemporary Arts and then was spent by them. Looking at the chronology, at the point when the Swedish trip collapsed and the group decided to produce the performances here, it was already being called 9 Evenings: Theatre & Engineering. And at that point, the foundation started an independent bank account for 9 Evenings. That was in about August so I think the idea began to be discussed—"Well, we should have our own organization that can take grants and get tax deductions." So I think the talking plus the excitement about what they were building and the possibility of other artists being able to use the equipment—it was, at this point, pretty much focused on that situation. So on September 26, I think, it was incorporated. I think they wanted to call it something like Engineering in Art or Art in Engineering. But Frank Konigsberg, who was a lawyer, said when he either went to Albany, or researched it, he found that you're not allowed to call something engineering if you didn't do engineering. So he came up with the idea of Experiments in Art and Technology. And when everybody heard it, they thought, "Oh, god." But it was too late, or they just sort of accepted it.

Q: Why did they react that way?

Martin: Well, I think Billy's idea was that artists don't experiment. He had a more rigorous definition of experiments. If you're a research engineer or scientist you make experiments and those experiments—they can fail as well as succeed. And you often learn even more from failure. If you do an experiment where you know the outcome, it's not very interesting. But he didn't think that's what artists do; they don't experiment. I think that was the main thing, that it's not experiments. You're making works of art. You're making finished works. You're not—so that was the main objection, I think.

Q: But then they had to go with it.

Martin: They went, "Well, we can change it later." But of course, you never change it. So it did start before the 9 Evenings but I think it was very much around the 9 Evenings. The people that pushed it were Billy and Bob. Bob Whitman was very active. And Fred Waldhauer, who was one of the engineers who really got it, so to speak. I mean, he had been very involved with jazz and had worked with some other musical people so he really understood about the collaboration.

Q: And it was those four who founded it?

Martin: The founders, so to speak, yes.

Q: Whitman, Rauschenberg and the two engineers, Billy and Waldhauer. Who both were at Bell Labs, right?

Martin: Yes. Fred was more hands-on technical. He was one of the people designing the digital switching system, the T1 [transmission] system, working on developing that. And later he developed the first digital hearing aid. He had the idea. He said he realized it when he was driving his rattley Toyota, that no matter how loud he made the sound, you couldn't hear the jazz he was playing. He realized it was about which frequencies need to be amplified. His mother was going deaf as well so he had that experience. He realized that it was the frequencies and if you could tune a hearing aid to raise the frequencies that were missing in the ear that it would be more effective.

Q: Was there a distribution of roles in that initial founding?

Martin: No.

Q: There wasn't someone who was the president or someone who was the secretary?

Martin: No, I think once E.A.T. was founded, the officers were: Billy was president, Bob R. was vice president, Fred was secretary, and Whitman was treasurer. Later, when Billy joined E.A.T. full-time, then Bob R. became chairman of the board. But these titles didn't mean much because everyone worked together.

Q: And so how did it become more of, rather than just an organization that was meant to support the development of 9 Evenings, how did it become the kind of clearinghouse and much more instrumental—?

Martin: Well, what happened was after 9 Evenings they decided to find out whether this was something that was interesting to the art community in general—interesting to the artists in New York. There was an enormous amount of interest in the 9 Evenings. A lot of artists got involved helping their friends, and were part of it and came to it. Marcel Duchamp even came. Chuck Close remembers sitting next to him at one of the performance evenings. So the artists and engineers decided to hold a meeting for artists and put out the word—invited artists to come to a meeting at the Broadway Central Hotel [New York]. The artists and the engineers who had participated in 9 Evenings spoke and talked about their experience and asked the audience, “Is this something that’s interesting?” About three hundred people attended the meeting and there were something like eighty requests right away for projects that artists needed help for. So the response from the art community was quite large and spontaneous and the interest in working with engineers was also large. So really from the beginning the ideas for what E.A.T. would do and be went beyond just using the equipment from 9 Evenings.

The early working out of what E.A.T. would do was, I think, an attempt to respond to the expressed needs of the artists whom they had contact with combined with the more general ideas about the societal possibilities inherent in the artist-engineer collaborations that inspired all four founders of E.A.T. It represented the coming together of the larger ideas that Billy had had since the early sixties about the artist being able to invigorate engineers’ ideas about their own work,

with Bob R.'s ideas of the value of the collaboration to close a gap—the isolation of the two communities from each other. For both Whitman and Rauschenberg you had the understanding of the need for the artist to work with new technology—to participate in the developing technological society—and Fred recognized the value of the artist working with engineers who were developing the technology that was increasingly surrounding us. As Billy and Bob R. began to write about the organization—its goals, its structure, and its activities in the first newsletters, they articulated the larger goals: a joint statement in the second *E.A.T. News* ended with the sentence—let me read it—“E.A.T. is founded on the strong belief that an industrially sponsored, effective working relationship between artists and engineers will lead to new possibilities which will benefit society as a whole.”

In terms of the organization of E.A.T., I think they were working it out as they went along. In the first newsletter, they wrote that setting up the organization would rely on the “experience derived during the formative period.” And then in a sentence that I’m convinced was largely Bob’s, “The thought behind E.A.T. is that the organization should be generous, adaptable, and helpful.” So then, responding to the artists’ requests, the practical activities of E.A.T. in the early years was to begin to recruit engineers—to find engineers who wanted to work with artists. And then that was going to be the main ongoing effort of the organization, matching artists and engineers to work on the artists’ projects.

I also want to say that the response was not only from the New York artists but we began to be contacted by artists and engineers around the country who wanted to form E.A.T. local groups. So we said go ahead, and tried to give them advice on ideas and activities we had developed.

You could say the idea of artists and engineers working together was an idea whose time had come.

Q: And E.A.T. was funded by individual donors or by governmental grants?

Martin: Barely funded, as we say. I think one of the things that got it going was a grant from John Hightower at the New York State Council on the Arts. In those days it was really much more informal. I think they made a request and we got I think eight thousand dollars from the New York State Council on the Arts. Somebody else made a request to the Rockefeller Brothers Fund and we got some money there. And I think there were some individual and corporate sponsors. In the beginning there was emphasis on working with industry and within industrial laboratories to have industrial sponsorship for artist-engineer projects. We even hired a person to be director of relations with industry, Jean[-Jacques] Erlichman.

Q: You told me this before but let me ask you again to describe the first offices. Were the first offices on Sixteenth Street? And how were they set up?

Martin: Yes. The first thing they did was to get an office. They rented a loft on the sixth floor of a building at 9 East Sixteenth Street. It was 5,000 square feet, so it was really huge. So they built a small space in the front southwest corner, toward the front windows, and that was the administrative office. And then they put a wall maybe a third of the way up from the back windows with a fairly large opening and back there was the technical part. Ralph Flynn, who had been a TA at Bell Labs, came to work full-time for E.A.T. as their technical director, helping

artists with loans of equipment and with simple technical problems. Carolee Schneemann borrowed some for her piece *Shows*. Max Neuhaus was there, I know. So they lent stuff to different people. Then the middle space was left open as a meeting room. We began to have open houses on Sunday so artists and engineers could come together and talk. Just meet and begin to talk. Then we organized a series of lectures for artists on technology in the main space. So that was it. That was the office up until 1969, when we moved the administrative offices to 235 Park Avenue South when we took on the Pepsi Pavilion project. We still kept the loft on Sixteenth Street and some of the equipment for the Pavilion was designed and built there.

Q: And you came in 1967 to work on the newsletter? Is that when you got in?

Martin: Apparently. I mean, I didn't remember exactly when I started but the first *E.A.T. News* on which I'm listed as editor was published November 1, 1967. I had been working for television. When I finally left Columbia—I got my master's in the fall of 1965—and I worked for CBC [Canadian Broadcasting Corporation] in Ottawa on a program on the Russian Revolution from winter '66 to spring '67 and then in fall 1967 at Channel Thirteen, also on a program on the Russian Revolution. During the spring of 1967, I was at CBS, where I worked on a program called "The Walls Come Tumbling Down," a documentary on several contemporary artists, including Tony Smith and Marta Minujín, an Argentinean artist who was working with E.A.T. engineer Per Biorn on an interactive telephone booth she called the *Minuphone*. Another of the segments was on Rauschenberg and they filmed in the chapel at 381 when the *Revolvers* were delivered to him from the fabricator and he and Brice Marden, his assistant at the time,

were looking at them assembled and working for the first time. Somehow later I got hold of that piece of film and it's now in the Foundation's archives.

So I guess Billy and Fred knew what I'd done from the 9 Evenings, helping Pontus with the program and then later helping Simone with her article for *Artforum*. I joke and say that most artists are terrible spellers and they knew that I could spell so I had a rare skill to contribute. So they asked me to come and join E.A.T. as editor of the newsletter. And so I did and worked on the newsletter and then more publications like the *Some More Beginnings* catalogue and *Techne*, which was a more general publication, which we published when we split *E.A.T. News* into two parts: *Techne*, which we called a "projects and process paper," and *E.A.T. Information and Operations*, with news and information for artist and engineer members. *Techne* was the Greek word that meant thought put into practice, practical application of knowledge. I think Billy thought *techne* could refer to both art and technology, and the subtitle "projects and process" emphasized the commitment to active collaborations in the world. We put out two issues of *Techne*, which published news about E.A.T. and some of the artists' projects but also had articles about everything from [Gottfried Wilhelm von] Leibniz's ideas for an exposition of marvelous machines, to an interview with Claes Oldenburg, to some artists' projects that might interest engineers to figure out, like [Peter] Pete Seeger's request for a tunable steel drum, or a paint that youngsters could use to paint on buildings that would disappear in cold weather. It was in this projects section of *Techne* that we published Bob R.'s suggestions, almost a manifesto, for neighborhood cultural activities.

During this time, the Pepsi Pavilion project started and I stayed on to work on general projects through the years.

Q: And the newsletter, the idea of it was to, once you had this network—putting artists in touch with engineers—it becomes a vehicle of keeping that network in communication. Was that the idea?

Martin: Yes. I mean, the early days, it was mostly about E.A.T.—the plans, ongoing activities like talks at industries, open houses, what we were doing, asking people to sign up as members. I know there's a very funny notice where Billy says, "Would you please fill out the artist's application slip? Little names on little pieces of paper are not too easy for our engineers to decipher." So it was getting the organization going and articulating what should be done. He and Bob worked very closely together on a lot of these things. Billy always trusted Bob's aesthetics, so to speak, or his operational aesthetics. In the first three issues of *E.A.T. News* they wrote the goals of E.A.T. and in the first months hammered out ideas of collaboration and what the organization would concentrate on. Billy very much collaborated with him or would ask him, "This? Should we do this? Should we do this?" He would ask Bob to design the heading of the *E.A.T. News*. Bob chose the E.A.T. font. "How should we do it?" This kind of thing. They worked closely together on this I think.

Q: Well, I wanted to talk more specifically about Bob Rauschenberg and some general memories of his personality and then to go through some of the stuff we were talking about over email about the later projects. But if you could just give us—it doesn't have to be specific anecdotes—

but your sense of him as a person. So here's someone—imagine you're describing him to me. I never met Bob Rauschenberg. What was he like? What was it like to be in the room with him? What was his personality like?

Martin: I'm really not good at this. I think the thing about Bob is incredible directness, straightforward. I mean, he would make a comment about something and he'd be right on. And he didn't let you get away with any bullshit. He would—his comments or reactions to things that could just turn it just a little bit so you saw another side of it or you saw it clearer or you saw a way to do something clearer. He had very little patience for obstacles or people trying to put obstacles in your way. He was funny, amazing humor, amazing storyteller when he got going. But when he focused, the focus was absolutely right on. Working with him was extraordinarily easy and quite fulfilling.

Q: It seems he must have been driven and focused because he produced such an enormous amount in such a remarkable range of media. But he seems to have been a really socially remarkable figure, too. He wasn't a recluse who goes into the studio and shuts the door. He seems to have been so open to interaction and collaboration and hanging out with people, working with other people. Is that an accurate impression? Is that the way you'd describe him?

Martin: Oh, yes. Well, I think the door closed when he went to work. I mean, I didn't know. But I think there were people around a lot but I'm not sure there were extra people around when he was working. But you can talk to people who worked with him. But when he was not working,

he was—the TV was always on, not always the sound. People would come. He liked to sit around and talk and he was interested in people, interested in new people.

Q: And in terms of the collaborative aspect, just to go back to that, what we were talking about before was his idea that you would be in the same room working on projects together, calling over every few minutes, “Oh, look at this.” Or was it that he would say to Billy, “Go off and do this and go do it on your own and come back a week later with something?” Was collaboration actually working together, or was it go off and do your thing and I’ll do mine?

Martin: I think the collaboration was more you’d talk together, decide what you wanted to do and then the engineer would go off and build something they had talked about. I mean, I know that Robby Robinson talks about, in the article that Billy wrote about *Solstice*, that Bob said, “I want this, I have a certain idea.” And then Robby remembered the doors at Amsterdam airport and suggested that. They suggested things, suggested how to carry out Bob’s initial ideas. But once it was about building it, once they decided on it, then maybe the engineer would build something to a certain point and then come back to Bob. But I don’t think Bob was there soldering, for example. But of course, later, when he was making his prints he was very hands-on. Again, you’d have to talk to people who worked with him because I really didn’t. But I think with the engineering, Bob very much let the engineer do their part and then he would see it. And Billy always wanted to check with Bob, “Is this all right?” Particularly when the time for restorations or renovations came. You know, Per Biorn would build something and then he or Billy would make sure it was all right. Or, “How do you want it?”

Q: I think it's with *Solstice*—I remember a comment, I think in the piece you co-wrote with Billy about his decisiveness, that Rauschenberg, when it became time to put the images on the doors, that they were stunned by how quickly Rauschenberg says, “Okay, I need to do twenty”—however many it was—“I need to do twenty-four and these are going to be the”—just laid them out in an afternoon.

Martin: Well, that was his job, in the sense that Bob did know visually what he wanted to do and he probably had the idea for a long time. That was his part of it. But he didn't interfere or have anything to do with the building of the frame or the moving mechanism of *Solstice* until it was ready. And then he did his part and I'm sure he knew that he wanted to do some of those color separations of one image on each panel so when the doors opened and closed, you got a four-color image appearing and disappearing, et cetera, et cetera. Of course, to the engineers, that's amazing to be able to do the silkscreening that fast.

Q: The other element of his personality that you had mentioned to me that you thought you could say something about was his generosity. And you were talking about a particular episode in the 1970s. So I wanted to ask you to recount that story.

Martin: I think Bob's generosity in terms of not only helping friends—which he did, I think, a lot, but other people can talk about that—his support for E.A.T. and his support for what Billy and the others were doing was constant. You could always come to him. You could talk to him. You could ask him. So it wasn't just money or things. He was available and if you had an issue, he would listen, and his take on situations was extraordinarily clear and extraordinarily helpful.

I was thinking about what I hadn't mentioned to you during the other interview. When we did the New York Collection for Stockholm in order to buy the works from the artists and then donate them to Moderna Museet we needed to find a way to raise funds—because it got harder to raise money when the collection was going to a foreign museum. The artists were totally in favor of it but it became more abstract for American patrons. Billy and Bob came up with the idea of a portfolio of prints. We asked each of the thirty artists in the collection to donate a print to a portfolio and the prints were made. At a certain point, Adi Rischner needed to be paid. And so there were about twenty-seven portfolios, maybe more, that hadn't been sold. So we started talking to a collector couple in Philadelphia about the possibility of their buying it quite inexpensively, et cetera. But they began to make all these conditions—this, that. Bob just got angry. He said, “Forget it. I'm buying them.” He bought them and Adi got paid. Then he wanted to donate them—all of them—to different museums and universities. He asked me to find the places to give them to, which was really great. So I found university museums, colleges, smaller museums, to receive the portfolios, which were great teaching portfolios, with so many artists in it. So it was that kind of thing he just didn't want to put up with. He didn't want money or irrelevancies to get in the way of doing something. When you're committed to do it, you do it.

Then of course, when he could, he started Change, Inc., which was to provide emergency funds to artists for finishing work for a show or for a medical emergency and it operated with no bureaucracy. As the funding people were getting more and more bureaucratic, his organization asked the artists only to say, “I'm an artist, here are my slides, I need X to do a show,” and if the

money was there, the artist got what was needed. So Change, Inc. had this kind of very direct, hands-on—generosity.

[Note: Change, Inc., founded in 1970, provided small sums of money to artists for non-art emergency expenses such as rent and medical costs.]

[INTERRUPTION]

Martin: Bob's generosity. I was talking about Change, Incorporated and the fact that it was very direct. If an artist had an issue with health or was trying to finish a piece or finish something for an exhibition, they could apply and there was no paperwork. "I'm an artist, here are my slides, I need X," and then if the money was there, the artist got it. So this kind of generosity but with no fancy stuff around it.

Then, of course, he founded the Rauschenberg Foundation and I believe expanded the causes he gave money to. And of course, Bob made posters—an enormous amount of posters for events and causes throughout his life. This kind of donating work, but also making statements, using his art to make statements. I think his interest in E.A.T. was very much that—the idea that art and artists can make a difference. Working with Billy and then the experience of 9 Evenings and his experience working with engineers on the works he made incorporating technology, he understood that the artist-engineer collaboration can let you make art that can make a difference in the world. This was a common thread throughout his life, finding different ways for art to make a difference.

Q: Would you say that these qualities that you're sketching for us are ones that Billy had, too? I wonder about the depth of their relationship. Because Billy worked with a number of artists. With Warhol and Jasper Johns. But my impression is that his relationship with Rauschenberg was especially close and continued over decades. What was the glue of their relationship? What did they like about each other? Why did they get along so well?

Martin: Early on Billy worked with a number of artists, like Johns and Warhol and Cage and Tudor, and continued to help artists with projects all his life. But he had close and sustained relationships that went beyond working on art projects with two artists, Bob Rauschenberg and Bob Whitman. Both of these relationships developed in the context of E.A.T. and then continued throughout their lives. The basis for these relationships was a moral sense—a commitment to the role of art and artist to contribute to the common good in society. My favorite words: commitment, responsibility, the individual.

To answer the second part of your question, I think one of the reasons that Billy and Bob R. got along so well on a practical level were some of these characteristics I was talking about. I mean, when you start a project, you're committed to it. You're committed to doing something and you don't want these irrelevancies—"Oh, the budget. We don't have a budget. We don't have this"—to get in the way. Of course there are always limitations but you don't let that stop you at the beginning. I think the sense of commitment, the sense of wanting to make the world better, belief that what you do can make a difference; that was very strong in E.A.T. and in Billy and very strong in Bob. Billy approached it from the engineering side—wanting the collaboration to affect

engineering in some way, at least one person at a time. Billy was an engineer and followed that logic.

Bob was an artist and he stayed an artist and through his art he affected the world around him. I think at his core was this strong moral sense and spirituality that runs through all his life and work, from his early paintings like *Mother of God* [ca. 1950] and the *White Paintings* that were intensely spiritual and transcendent. In his paintings and in his sculpture, he could go from the individual, the personal, to the cosmic in the course of one painting, and he never lost the sense of the person. He was always working in the now, alert to and responding to and shaping the world around him. He had an enormous appetite for life and for all the images and ideas life brings, always pushing himself to expand the possibilities for himself and the people around him. It was these ideas of morality, commitment, personal responsibility, and always pushing forward that united them. And, I have to say, united them and Bob Whitman and Fred Waldhauer—the strong moral sense of wanting to change the world, make it better for each person.



Robert Rauschenberg
Mother of God, ca. 1950
Oil, enamel, printed maps, newspaper, and copper
and metallic paints on Masonite
48 x 32 1/8 inches (121.9 x 81.6 cm)
San Francisco Museum of Modern Art
Fractional purchase through a gift of Phyllis
Wattis and promised gift of an anonymous donor

Later when E.A.T. got involved in the Pepsi Pavilion project, Bob Whitman became more active on a day-to-day basis. We met Vikram Sarabhai, who was head of the Indian Atomic Energy Commission and part of the Sarabhai family that had sponsored Merce Cunningham to come to India in 1964. Billy accompanied him to the World Bank in Washington to make proposals on developing communications networks and out of that grew an invitation to E.A.T. to put together a team to come to India to develop methods of creating education programming for education in India. Billy and Whitman began to develop the idea of projects in which E.A.T. put together interdisciplinary teams to work on projects in areas of society outside art, which we called Projects Outside Art. It started as a request for proposals for projects for an exhibition but grew organically into a series of projects: Children and Communication for developing telecommunications centers between schools, City Agriculture for rooftop gardening, developing modules on areas of vocational education, et cetera. Bob R. wasn't involved in these activities

but both he and E.A.T. were following the same trajectory of wanting to affect change in the society, Bob with his art, with Change, Inc., with the ROCI project and on and on.

Also over the years I think Bob also saw Billy as this kind of technical resource. Whenever there was something he wanted to do that was a little weird, he would call Billy. He always called on Billy to oversee the updating and restorations of the works that incorporated technology, especially *Dry Cell*, *Oracle*, and *Soundings*. Certainly the people Bob worked with were smart, resourceful, and loved the researching he needed when he wanted to try new things. He assembled a team of people in Captiva [Florida], who were extraordinary, to make his art with him and to work on his art. But there were projects that he called Billy for, like the portable set for Trisha Brown. Bob had been working with Trisha on sets and costumes for many years. In 1989 she was going to perform outdoors in Montpellier [France]. And he had this idea to do a set that provided both lights and sound and could be used outdoors or used anywhere—a set that didn't have to be plugged into a theater system. So he talked to Billy and Billy brought in Per Biorn and they built these aluminum towers on wheels for *Astral Convertible*. It had ninety-six rectangular car headlights mounted on open aluminum towers, which used electric eye technology to be triggered off and on as the dancers moved and broke the light beam. And the sound was provided by battery-operated players so these towers could move around on stage. This was a later collaboration that came to fruition.



Set designed by Rauschenberg for Trisha Brown Dance Company's *Astral Convertible* (1989). Pictured: Gregory Lara, Lance Gries, Diane Madden, and Carolyn Lucas. Robert Rauschenberg papers. Robert Rauschenberg Foundation Archives, New York. Photo: Mark Hanauer

There were several ideas that Bob had that were beyond the technology. I remember he called Billy. He said, "I'm doing this chapel with Renzo Piano in Italy. I would like something that changes as the light changes." That maybe it was transparent and then the sunlight would hit it and it would change color or color would appear. "I wonder, can you paint with liquid crystal?" So Billy got to work. He actually got to the head engineer at Samsung, who was doing a lot of this development at the time. And he said, "No, you can't paint with that material because liquid crystal materials doesn't emit light, but modulate it, and you need to have the liquid crystal material imbedded between a number of glass layers. And for color, each pixel has to be addressed electronically by its own transistor and you needed backlighting or a reflector layer to see the colors." That was the state of the art at that time. [Note: Rauschenberg's *The Happy Apocalypse*, 1999, was created for Padre Pio Pilgrimage Church, San Giovanni Rotondo, Italy, but was rejected by the Vatican.] Later I saw in a ladies' room that there were these stall doors that were clear but when you closed them you connected some electricity and the doors became

opaque. And I remember thinking that that might have worked but by that time Bob was on to something else.



Robert Rauschenberg
The Happy Apocalypse [original artwork for Padre Pio Liturgical Hall], 1999
Inkjet pigment transfer, acrylic, and graphite on poly laminate
96 x 250 1/16 x 2 inches (243.8 x 635.2 x 5.1 cm)
The Menil Collection, Houston
Gift of the artist in memory of Walter Hopps

For one of the latest projects, when Bob was planning his retrospective in '97 at the [Solomon R.] Guggenheim [Museum] in New York, he called Billy. He said he'd like to make a sound piece with sound underwater and then with speakers going up the ramp. Oh, no; it started as something else. Something about a cube of sound large enough for people to be inside the structure. It was where people would talk inside the cube and you could hear it outside the cube; I can't really remember. But the idea of sound coming from the Guggenheim pool was considered and Billy did investigate underwater speakers for the Guggenheim. [Note: This sound piece was not realized.]

[INTERRUPTION]

Martin: I was talking about later collaborations that they did. One was for the [Jacob K.] Javits [Convention] Center [New York]. When the Center, which opened in 1984, was being built, his wife Marion [Javits] wanted to have a sculpture in honor of Jacob Javits. She had always been this huge fan of Bob's and asked that Rauschenberg make the work for the center. Bob designed a piece that would be at the entrance lobby, which was a huge frame, maybe 20 feet long and 10 feet high, with sliding panels on which he would silkscreen scenes from Javits's life and work. And then there would be a control console in front of the sculpture and the public would be able to press buttons to make the panels move. So the public could change what the sculpture would look like. Per Biorn made the design of the mechanism and he made a scale model of the piece. Billy worked on assuring reliability of the movement. He knew that reliability was going to be a big issue for the architects. Billy and Bob went to a meeting with the [Ieoh Ming] I. M. Pei people—Pei's office was building the center—and it just went nowhere. They were totally not convinced that this was a great idea, that it was reliable enough, that the public should have anything to do with interacting with the sculpture, et cetera. So it just didn't go anywhere. Then, just to carry the story further, Marion turned to George Segal and George Segal did a sculpture of Javits but since Javits was already dead, George couldn't do his usual method of direct casting from the person, so he cast an older person—seated I believe—and Marion freaked out at that. "No, he looks too old." So I think what's there is a kind of very boring sculpture.

Q: The other one you had mentioned to me was [the Guggenheim Museum] Bilbao and the Fujiko Nakaya fog sculpture.

Martin: Oh, right. There's a Japanese artist, Fujiko Nakaya, whom Bob met when he traveled with Merce to Japan during the world tour in '64. She spoke English and was an artist and very well-connected in the art community in Japan and she was very active in helping them negotiate Japan in those days. So when we were ready to go to Japan for the first time—Billy and the four artists who were designing the Pepsi Pavilion—he told them to look up Fujiko. She'd help them out. So they did and it turned out that she was working with fog, making little fog sculptures.



Fujiko Nakaya
Fog Sculpture #08025 (F.O.G.), 1998
Water fog generated by 1,000 fog
nozzles and high-pressure pump/motor
system
Site-specific dimensions
Gift of Robert Rauschenberg
Guggenheim Bilbao Museoa

From the beginning the artists had wanted to cover the pavilion with fog. We had been given the dome-shaped building and they all hated what it looked like so they were trying to cover it with fog. We had had some amusing tries in the U.S., like using urea—uric acid fog—or dry ice fog, which would have attracted every mosquito in Japan to the pavilion. So when Billy and the artists heard Fujiko talk about her work, they all turned to her and asked her whether she would make a fog sculpture covering the building. And she said yes. So she undertook that project, worked with Japanese meteorologists, and she and Billy finally found a person who had invented

a nozzle, which, under pressure, could break up the water in droplets small enough to hang in the air—that is, to make pure water vapor fog. It was a physicist, Tom Mee, in Pasadena, actually. He had invented this nozzle but had virtually given up on it, not finding any uses for fog-making. E.A.T. and Fujiko commissioned him to develop the system for the pavilion. It used 2,500 nozzles in pipes that were attached to the ridges and valleys of the dome. Fujiko has continued to work with fog ever since. In '97 Bob went to Japan to accept one of those great prizes, the emperor's prize. [Note: [Rauschenberg received the Praemium Imperiale](#) for Painting, Japan Art Association, Tokyo in 1998.] He was having dinner with Fujiko—she is this amazing cook—and he asked, “How are you doing? What are you working on?” She said, “Well, I'm doing fog sculptures but I have to have a commission in order to do something that big.” Bob immediately said, “I commission you to make a fog sculpture for my opening in Bilbao—it's in two months.” And as Fujiko tells the story she said to herself, “It's impossible.” But to Bob, of course, she said, “Yes.” She worked with a fog-making company in Switzerland, visited the site, made wind measurements, and decided where to place the strands of fog-producing nozzles. She placed the strands of nozzles under the bridge at the back of the lake behind the building. At the opening, this incredible, beautiful fog rolled across the lake in back of the building, rolled across the lake climbing the back wall of the building. Sometimes, when the wind changed, the fog bank would roll the other way and float down the river. It was there for the opening and then Bob bought the sculpture and donated it to Bilbao. So it's permanently installed there. At one point, I guess the day after the opening, Fujiko said she was talking to Bob and Bob says, “You realize you've made a fog, F. O. G.” And she said, “Oh, my god—Frank O. Gehry.” She hadn't seen that but of course Bob did immediately.

Q: And is it still there?

Martin: Yes, it's permanently installed.

Q: So there's continual fog in Bilbao?

Martin: It's programmed, I think. She programs it with off and on cycles. If there is a heavy wind, the fog just blows away. And if there is no wind or the wind blows in a certain direction it fogs all the walkways in the back of the building and it gets dangerous for people walking there. Its behavior is dependent on the weather and the off-on cycles vary the configurations it produces and no one fog cloud stays forever. It is continually changing but it's a definite permanent fixture there. Thanks to Bob.

I also want to talk about Bob's support of the project to preserve the archival 16-millimeter footage that was shot at 9 Evenings and to make films of each of the artists' performances at the 9 Evenings. Around 1995, Billy found the original 16-millimeter film footage from the 9 Evenings in his basement on the point of decay. We wanted to rescue it and use it to make reconstructions of each artist's work at 9 Evenings. Much of the footage was in small pieces because Billy and Bob R. and Bob Whitman had worked with Alfons Schilling, who shot the footage, to make a film of 9 Evenings in 1967, using about two minutes of each performance. First, we worked with the filmmaker Barbro Schultz Lundestam and a rented Steenbeck [film editing machine] that sat in our living room to divide and re-assemble the film pieces into each artist's performance, in no particular order. Then we had this film material digitized. Billy asked

Bob for help and the Rauschenberg Foundation supported the digitization of the material so Barbro could begin editing the footage. A grant from Swedish sources allowed us to finish the video film on Öyvind Fahlström's *Kisses Sweeter than Wine* [1966]. She and Billy then went to work on Bob's performance. Arthur [J.] Williams at the Tape House, a high-end post-production facility, assigned us one of his editors, [Kenneth] Ken Weissman, to work on the films and also supported the online finishing of Öyvind's film and also the film of Bob's performance, *Open Score*. The film was premiered during the opening days of Bob's retrospective at the Guggenheim in New York in 1997. When fundraising was difficult for the project, Billy asked Bob for ideas for fundraising and Bob generously offered to give E.A.T. a work to sell to finance the films. This made it possible for us to continue the project. I remember we went down to visit him in Captiva a few days after Christmas and thought we should stay over New Year's and discovered that Bob had no feeling for that holiday and was only concerned that the fireworks and extra noise for the celebration would upset the dogs. I remember Bob talked about being invited by one of his collectors to cruise on their yacht for two weeks that winter and he said no, of course, and commented that he couldn't imagine doing nothing for two weeks. I think Bob was never not working.

Also, right after September 11 [2001], I got the idea that Bob could make a print or poster for a benefit that a group of artists was organizing to help artists whose studios and work had been damaged or destroyed. I had the idea that Bob would choose very positive images of New York. But of course, I didn't say anything like that—just asked him if he'd make a print/poster for the benefit. He agreed immediately and ULAE agreed to print it. To my surprise, he had a very specific image that he wanted to realize. He wanted, very simply, a black and white image of the

Twin Towers cradled in the arms of the Statue of Liberty [*I Love New York*, 2001]. Of course, it was an extremely moving idea combining elegy, comfort, and hope. But I remember it was almost impossible to get an image of the Twin Towers good enough for printing. I remember trying to contact the public information department of the Port Authority [of New York and New Jersey] but of course they had more important survival things on their minds. Finally I found something and I believe that [Laurence] Laury Getford or someone else in Captiva had to digitally restore the base of the image of the towers. And Bob was able to realize what he wanted to convey.

Q: I had a couple of other small questions and then we can try to talk about politics. Just thinking, moving from the sixties into the seventies, how would you evaluate the impact of E.A.T. on the art scene? Do you feel like it reverberated out and had a real impact on the way visual artists and performers thought about what they were doing?

Martin: I think the artists who were interested in using technology were interested in using technology. So it made a difference that they began to have access to engineers who could work with them. I mean, art and technology was never an art movement with a recognizable look like Minimalism or Pop art. It was too varied. Some galleries concentrated on works that incorporate technology like Howard Wise [Gallery, New York], et cetera. But it wasn't that kind of thing. From a Rauschenberg *Oracle*, to a Whitman *Red Laser Line* [1967], to a Nam June Paik television monitor with magnet piece, the works incorporating technology were too diverse. I don't think Billy ever thought it should be an aesthetic. That wasn't the idea. It was about

collaboration, a process, a way of individuals working together. The idea was to enable the individual artist to make work that he or she wanted to make.

As we moved into the seventies, we kept the matching system and artists were being matched. We even upgraded it to be key sort cards with knitting needles and holes. And an artist would have a request and then you'd find the five engineers who could work with him and put them together. We began to do things we call Projects Outside Art, which I alluded to earlier, in which the artist was part of a team of experts in different fields to work together on issues in society. As I said, we were invited to India to develop a way to produce educational software for satellite transmission to the villages in India. We did one with Children and Communication in which we experimented with kids getting to know each other without having to leave their neighborhoods. And the other was Rooftop Gardening. We worked with the University of Arizona to design hydroponic pods that could be rooftop gardens with Automation House [New York], and with the UN school [United Nations International School, New York] we tried to introduce it. So these ideas in which the artist was valued, again, for his or her expertise and his or her contribution to problem-solving rather than just making art. I think the difference was, in a way, Rauschenberg was more interested in staying within art. I mean, I think he was more interested in the use of art itself to change the world, the ability of works of art to make this transformation in the individual.

Certainly ROCI—the project when he went to different countries and either made art in the countries or showed art in the countries—his idea was, again, the individual would be impacted, could be changed by looking at the art itself. I think this was his very specific contribution,

slightly different from what Billy and Bob Whitman developed later, I think. Billy worked more closely with Whitman later. Bob Whitman was more involved [with] E.A.T. in the seventies, coming off of the Pepsi Pavilion, and they kind of worked on these ideas.

I did do something with Bob in 1968 where he was going to host a meeting of the New York City Cultural Commission. They were coming to his house. So he decided to write a proposal listing ideas he had for cultural activities and I helped him get it into form. He argued for localized cultural activities, rooted in each neighborhood, to encourage “participation and involvement by the inhabitants in their specific localized environment.” And he wrote, “All cultural activities should be designed to encourage the personal initiative and sense of responsibility in each individual” to foster “a sense of personal dignity, self-respect and community spirit.” All projects should be directed toward expanding possibilities and they ranged from long-term ideas like finding unused spaces in neighborhoods and developing them into cultural centers to more immediate ideas like projecting movies—some made by local film or TV projects—on whitewashed wall sites, establish community gardens, set up a plan for veterinarians to visit weekly, centers for learning to repair everyday appliances. Another suggestion was to bring in costumes and other theatrical equipment and have volunteers help stage performances that would be videotaped and shown back to the community. These were very new ideas at the time. People weren’t doing this kind of thing yet. His proposal began, “You can’t bring culture to people, you can only bring it out of them.” So again, this idea of inspiring the individual was very strong with him.

So we talked about Bob's politics. I don't think he was political in the way of—he wasn't political in the way of joining a group or this kind of thing. But he was obviously very liberal. He made posters for, if not [George S.] McGovern [Untitled (McGovern poster), 1972], at least later [Edward M.] Teddy Kennedy [Untitled (Kennedy Campaign 2000), 2000]. He supported the Democratic politics and he supported causes—very early he made an **Earth Day** poster [1970, the inaugural Earth Day; another in 1990]. And then when Ted Kheel in the early '90s was involved with the **UN Conference on Environment [and Development]** in Rio [de Janeiro], Bob not only made a work of art and poster for that [note: both original artwork and print titled *Last Turn—Your Turn*, 1991] but also attended the sessions. He was using his art in the service of humanity, or in the service of society. I think this was very much his take on it.



Robert Rauschenberg
Last Turn—Your Turn [print for Earth Summit '92 the United Nations Conference on Environment and Development, Rio de Janeiro, Brazil], 1991
 Offset lithograph
 25 x 26 inches (63.5 x 66 cm)
 From an edition of 200, published by the Robert Rauschenberg Foundation, produced by Ivy Hill through the auspices of Universal Limited Art Editions, West Islip, New York

Q: Would you say that that was the same in terms of Billy, in thinking about Billy and politics?

Martin: I don't think Billy thought—no, in the beginning, it's not the art itself. I think for Billy, it really wasn't about the art. I mean, he worked with these really wonderful artists and good artists and the value of art was there but, as E.A.T. developed, anyway, it was more the process of people working together on projects—and projects that were not necessarily art but the artist coming out into the society, going even further than his art. So I think there could have been—there was a little bit of that kind of difference. I mean, they didn't argue about it. But I think in terms of projects that—Bob didn't become part of the Pepsi Pavilion. He came to one of the early meetings and made some suggestions and some ideas. When he heard many of the ideas the four core artists were coming up with, he saw there were many visual elements and he suggested thinking of an invisible environment with less objects or architecture but other elements of sound, light, et cetera—even suggesting a shallow pool in the middle of the floor that visitors would be invited to wade in. That got the other artists thinking. And Whitman, who had worked with mirrors and worked with large mirrors had sort of pushed things in that direction and that became a feature of a kind of invisible but very rich environment that people could experience on their own and compose their own experience. For all the artists it was important that the viewer could compose his or her own experience. They could listen to the sounds from the floor, they looked in the mirror, they could interact with the mirror, they could watch a performance there, but they would see it from different points of view. They would see themselves from different points of view. But also all four of the core artists didn't want anything fixed or set like Disney, where you would ride in a little car through a fixed environment. No, the idea of all the four core artists for the pavilion was to have a really rich environment that the people interacted with. The pavilion started with an idea—with a concern for the individual's experience there.

Q: And so you meant that, as we move into the seventies—not a break but maybe a fork in the path—it's that Billy really is moving towards that Projects Outside Art idea, whereas Bob is more focused on the art world. Is that the way you'd put it?

Martin: Yes, except that with Bob it was never just one thing going on at a time because at the same time, from 1971 to 1973, they did the New York Collection for Stockholm project. I mean, Bob was still involved. I think he was no longer chairman of the board of directors. He decided he had other commitments. But when we started to do the New York Collection for Stockholm, he was very present in that and was part of so many of the decisions. When we decided to make a portfolio, the idea was let's make the prints small; the prints are 9 by 12 inches. And we started out saying only black-and-white, or as Whitman put it, one-strike prints. But of course, once the artists got started, the prints were all over the place. Segal made a record and Andy Warhol a photocopy print that used the copy made by the machine as the original for the next print. And the image, a drawing of Mao, changed radically over the edition. Bob's print was a preparatory drawing he had made for the Combine, *Monogram*, which Billy had encouraged him to sell to Moderna Museet and which the museum acquired in 1964. [Note: lithograph and two-color screenprint for the portfolio titled *Sketch for Monogram, 1959, 1973*] The New York Collection portfolio was to be housed in a Honduras mahogany box, built by Peter Ballantine, who worked in wood for Donald Judd. But soon Honduras mahogany became scarce and was declared an endangered wood. So Bob helped design a cardboard slipcase for the portfolio, choosing the material and colors.

So it wasn't a break. I don't think there's a break. I mean, E.A.T., again—less funding, we weren't as active, et cetera—so there wasn't as much to do.

But certainly with the New York Collection, Bob was right there when we held the dinner in 1972 for Princess Christina of Sweden who was a patroness of the collection. We organized a showing of the works in the collection at the Castelli, [Ileana] Sonnabend, and John Weber galleries at 420 West Broadway, followed by a dinner at Bob's place at 381 Lafayette in her honor. For the opening of the New York Collection for Stockholm at Moderna Museet a year later, we organized a charter flight for the artists and patrons of the collection and of course, Bob came on that flight with us. He came to Sweden, he was part of it. So it varied.

But I do think there are two—they're slightly different. I think Bob really did believe in this. And I don't say Billy didn't believe in the power of art—that's not what I'm saying—but the focus was on getting the people together to make the art. And Bob, as he began to make more and more of his art and then use it in different ways, this idea that it really could change people. Well, with ROCI in particular, he used his art, and showing his art in the different countries, to change people's ideas. I mean, both of them were part of, I think, this incredible utopian excitement of the sixties. I mean, the sixties began—it began in politics as well. You know, the Civil Rights movement and anti-Vietnam War movement, Students for a Democratic Society too. But this idea that we really can change things—the whole thing—all of these groups really felt they could change the society for the better. I think E.A.T. was very much part of that. And the ideas of it—it wasn't about putting lights in sculptures. It was really about changing the society. I think that Billy and Bob shared this. And each one continued to do it in his own way.

Q: There's one other topic that we didn't get to in our email exchange so maybe we can end with that. Unless there are other things you wanted to talk about.

Martin: If we did politics enough, I think.

Q: I think what you just said was really useful and that's to say that politics is very much there. But the other thing that you brought up was his use of language, both in terms of his titles and his writings. I was reading through some of his writings here in the archive.

Martin: They're pretty amazing, right? Bob's writings are just extraordinary. I mean, he didn't write that much but when he would write something, it was amazing. He would compose sentences that operated on three levels and all these levels would come together. I mean, it's just extraordinary. He was very sensitive to words and I remember he hated negative words, or words that had a negative tinge. He would always find the positive, more open way of saying something. Then, of course, his titles are so beautiful, his titles for his pieces. He knew what he wanted to say and he had the titles. As I said, I always thought that if he hadn't been a visual artist, he would have been a poet—and he was a poet in that sense of the language.

The other thing to say about him is this incredible loyalty he had to people and to the people he worked with. And a kind of—it's not sentimental. That's not the right word. What's the word when you remember people and you honor people that you've been with through your whole life? His openings were always family affairs. Literally, his mother Dora [C. Rauschenberg] and

sister Janet [Begneaud] and family always came to his important and not-so-important openings. And you always saw people who had worked with Bob at these openings, who had worked with him over the years. You felt you were a part of a big family getting together to celebrate. I know [Willem] de Kooning died when we were in—where were we? Munich, I think. And he sat and wrote something for de Kooning that he wanted to say. I think Ileana died when he was getting ready for a show—was it in Spain? And he made them stop the catalogue and put a dedication to her in it. So I mean, his sense of occasion, his sense of loyalty, and his sense of marking history was really strong. That's another aspect of his personality.

Q: That's great. Very useful.

Martin: Which comes down to a commitment to people. It's a commitment to what you're doing but a commitment to people, as well.

Q: Fidelity. I can't think of a better word.

Martin: Fidelity. Yes. Great word. This sense of fidelity and of loyalty.

Q: Just a simple question. In your view, how will Bob be remembered a hundred years from now. Easy.

Martin: How will Bob be remembered? Well, art history is extraordinarily fickle and extraordinarily cyclical. But he's a great artist and will be remembered as a great artist. I mean, I

think in terms of the kinds of innovations he did—trying different mediums and openness to work in different mediums. I think one of the things I always felt about Bob was that his talent was so great that he could take anything and make it beautiful and that he was, in a sense, fighting against that. He fought against it. He challenged himself always to not be able to fall back on his talent—not to fall back on something that’s easy but to push himself to do something new. I mean, one of the best examples is, after doing those incredible pieces incorporating technology, which are, of course, masterpieces—*Oracle*, *Solstice*, *Soundings*, and *Mud Muse*—he went back to work with cardboard. He made pieces with cardboard but he set himself the thing that if he used a piece of cardboard, it had to be the whole box somehow. The whole box had to be used. He made it hard for himself in order to make the art better. People who know him better—know the work better—might be able to talk to this as well. But I’ve always felt this—that he challenged himself to not fall back on easy—easy solutions to things. It’s always, “What’s the new solution? What’s the new possibility?” I think this is one of the things he’ll be known for.

I also think there is an incredible gentleness in all his work, not soft but a respect for the materials and using them in this very honest way. And there is his imagery—images that embraced the world, the whole world. Nothing in human experience was foreign to him—images from the cosmic to the intensely personal could co-exist in one piece. It’s the humanity of the work. And the openness, the generosity, the pushing all kinds of boundaries for the greater good in his life and in his work.

Q: Well, that is a great, perfect place to stop. So I want to thank you, Julie Martin, for being willing to sit down for a couple of hours and be on camera and share these thoughts and reminiscences with us. Thank you very much.

Martin: Thank you. Thank you for doing this.

[END OF INTERVIEW]