

**Shelby White and Leon Levy Archives Center
Institute for Advanced Study**

**Oral History Project
Interview Transcript**

**Alice Bigelow, Marc Bigelow, Nick Bigelow, and
George Dyson
Interviewed by Linda Arntzenius
March 23, 2013**

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ABigelow
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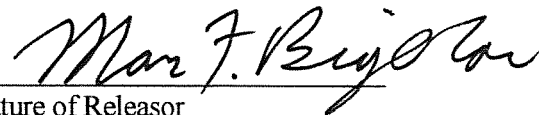
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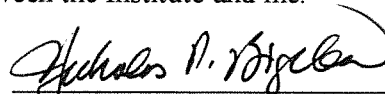
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Name of Releasor: GEORGE DYLAN

Date: 23 March 2013

[recording starts mid-conversation while interviewees are looking at photographs]

Nick: She's a bit bigger.

Alice: She's a bit taller, but she really hasn't changed very much.

Linda: You can have that book¹ if you don't have it.

Alice: Thanks.

Linda: All right. I did a bit of homework, I have some questions to prompt you, but I think the idea is basically for you to talk about your reminiscences of childhood and growing up at the Institute. I want to say that the Oral History Project, as you know, there's a consent form to sign so that you can close the material or leave it open for public access, it's entirely up to you and I guess it depends on what you say whether you wish to close it or wish to leave it open.

Marc: Can I see the picture?

Alice: So after we're deeply indiscreet...[laughter]

Linda: That's to encourage you to be candid.

Marc: What page was it on?

Nick: You can just open it...

Linda: It's page 94. She's down here at the end.

Marc: Oh.

Alice: You've seen that picture before. It's got Ingrid, and it's got Nora Charney, and it's got Esty in it.

George: Taken by my mother².

Alice: Was it taken by your mother?

Marc: Oh, I see. Ingrid ...

Alice: Ingrid, who's about 6 foot taller than anybody else in that picture.

¹ The reference is to a photograph taken by Verena Huber-Dyson on page 94 of the pictorial history *Images of America: Institute for Advanced Study* by Linda G. Arntzenius (Arcadia Publishing, 2011) showing children at the Crossroads Nursery School celebrating Halloween. Alice Bigelow is pictured along with Esther Dyson, Nora Charney, Ingrid Selberg and Katerina Haefeli.

² Verena (née Haefeli) Huber-Dyson (1923-2016), Member in the School of Mathematics, 1948-1949.

Marc: That's Ingrid?

Alice: Yes.

Marc: And where's Alice?

Linda: That's her, in the white.

Alice: I'm being a nurse. I think I'm being a nurse.

Marc: Little...

Linda: She was little, yes. And your sister Esther's in there too. [to George]

Alice: Yes, she is.

Linda: Could I first of all ask you to just go around the table and introduce yourselves very briefly so that we have your voice on the recorder. Nick, perhaps, you just might say a few things about yourself.

Nick: I'm Nick, or Nicholas, or actually what most of the time I would have been here, Nicky.

Alice: You mean not "hey you."

Nick: That's right. I'm the youngest of the group, seven years younger than Alice and five years younger than Marc. And I now live in upstate New York.

Marc: Two years younger.

Alice: No, you're not.

Nick: Excuse me, two years younger than Marc. Well, I thought I'd try and see what happens. [laughs]

Linda: All right so Nick was born in '59, Marc in '56, Alice in '52...

Alice: Hang on, that's not right.

Nick: I was '58. December 26, 1958, the day after Christmas.

Alice: So there's a two year gap. Hi, my name is Alice Bigelow. I was born in 1952. I am the oldest of Julian³ and Mary's three children, with the respective gaps [laughs],

³ Julian Bigelow (1913-2003), Member in the Electronic Computer Project, 1945-1956; Member in the School of Mathematics, 1951-1970; Member in the School of Natural Sciences, 1970-2003.

depending upon how you interpret it. I now live in London, England, and have done so for quite a few years.⁴

Linda: What do you do there?

Alice: Oh, you didn't want to ask that. [laughter] I am at the London Metropolitan University where I'm a principal lecturer in housing and regeneration, part-time, and I'm an independent consultant in regeneration and community the rest of the time.

Linda: And Nick, I forgot to ask you that. What do you do now?

Nick: I am a professor of physics at the University of Rochester.

Linda: O.K. George?

George: Yes, George Dyson.⁵ I was born in 1953. And my older sister Esther was Alice's friend. Now I live in Bellingham, Washington.

Linda: O.K. And...

Marc: Marc Bigelow, I'm the middle kid. I was born in 1956. I'm a semi-retired musician in Vermont for the past 35 years. Well, not retired for the past 35 years [Alice laughs], but I've been living in Vermont for the past 35 years, and glad to be here!

Linda: All right. Well I thought first of all we'd move on to just general talk about your time growing up at the Institute. Perhaps you might start with where you lived when you were growing up at the Institute.

Alice: A lot of different places.

Nick: Let me jump in as a starting point. Alice and Marc are the better ones to fill in lots of details on this, because probably up until whatever age, about third grade, I think we lived in several places. We lived in a house on Maxwell Lane, which is now where the Oppenheimer house is. And in fact, that house was torn down to build the Oppenheimer house and there was a tunnel that was discovered under it, some interesting history about that place. That was 4-A Maxwell Lane.

Marc: That apparently George doesn't know anything about...

Linda: Do tell.

George: When you say Oppenheimer house...

⁴ When reviewing the transcript, Marc Bigelow clarified this period as being forty plus years.

⁵ George Dyson (1953-), Director's Visitor, 2002-2003.

Marc: The new Oppenheimer house. They took out 4-A Maxwell Lane and built a house for Robert Oppenheimer.⁶ He must have been in his 70s by then. It was a one story house, and it's still there. It's a big, sprawling one-story house, sort of like the Selbergs'.⁷

George: It couldn't have been Oppenheimer, Oppenheimer died in 1967.⁸

Alice: I don't think it was Oppenheimer.

Linda: I think, was it not, were they [the Oppenheimers] not planning to move there but they didn't actually move there because he died?

George: There you go.

Alice: Maybe.

Nick: There was some connection...

Alice: We lived there...

Marc: The Selbergs told me that it was for Oppenheimer. That's how I knew.

Linda: Now the house that you were living in was torn down.

Nick: It was a little shack sort of thing.

Alice: It was one of the original, World War II, army barracks.

Linda: From Mineville?

Nick: That's it.

Alice: But in fact we had lived in one before that, on 6-B Cook Road.

Nick: Now Cook Road was which road?

Alice: It was...

⁶ J. Robert Oppenheimer, (1904-1967), IAS Director, 1947-1966; Professor in the School of Natural Sciences, 1966-1967.

⁷ Atle Selberg (1917-2007), Member in the School of Mathematics, 1947-1951; Professor, 1951-1987, Emeritus Professor, 1987-2007; and Hedvig Selberg (1933-1989), Electronic Computer Project staff, 1950-1957.

⁸ In reviewing the transcript, Marc Bigelow added his thought that the house was built for Oppenheimer but he never lived there.

George: Where the housing project is...

Nick: So we lived on Cook Road, we also lived on Springdale, opposite the golf course, for awhile.

Marc: I remember that; picking golf balls out of the front yard.

Alice: The truth of the matter was that, the Institute housing, aside from the Cook Road property that [we lived in] around the time that I was born--I've got some pictures taken of me crawling around that house, outside that house with a cat, Fuzznuts--I think that living there was shortly after that housing had first been established. But after that we lived in Institute housing at times when, for various reasons, our other housing options had vanished ...

Linda: So did your parents not own a particular house? Did you rent houses?

Marc: My father was building his house, he wanted to build it himself, and he thought he could find time to finish it and...

Alice: He bought a piece of land on Mercer Road, two plots down from the Quaker meeting house.

George: Right. It's complicated.

Alice: [He] moved a building from Clay Street in the center of Princeton, which was a former blacksmith's shop, and moved it down Nassau Street against...

Nick: Hold up, down Mercer Road?

Marc: They tried to stop him.

Alice: All the way down Mercer Road. And the town felt that this was a bad plan because it would take down all the high tension wires and our father measured it, announced that it would clear. They, I think, made him sign some documents saying that if it didn't clear that he was responsible. And apparently it did clear by that much [indicates a sliver]. But this was a project that he was going to finish himself.

Linda: Do you know which year this was?

Alice: Yes, it was 1949, 1950.

Linda: This is before your time, so this is a family story?

Nick: Well, Alice lived in there as a fetus. [laughter]

Alice: I also lived in there as a five-year-old. Dad bought the house, bought the plot, put the blacksmith's shop on it, started to refurbish it, and as Marc said, was unwilling to pay somebody else to do it because somebody else would do it inadequately, so he needed to do it himself. At some point, for reasons best known to the logistics of my parents, we lived there for at least a year when I was four. I know the reason we left was because of the way you accessed it. We were living on the second floor in the house, and the way you accessed the apartment on the upstairs was a ladder, and our mother...

Linda: Oh your poor mother. [laughter]

Alice: Well, she was then pregnant with Marc. And [she] said to my father, "Forget it," kind of. "If you think I'm going to do a four-year-old and a baby and the groceries and the ladder, dream on."

Marc: Nana was up in arms about it.

Linda: Now who's Nana?

Marc: Our mother's mother.

Alice: There was lots of family politics. But basically our mother went out and rented an alternative property at that stage. [to George] Have you found the house?

George: Yes, here's a map of the old buildings on Maxwell Lane, with the Maxwell House.

Marc: That's where they said the tunnel went to, to the Maxwell mansion, or Maxwell house, or whatever, that's what the story was. But this house was gone by 1966 or...

Linda: So you mention the tunnel as having been put there when they were building...

Marc: That's the story I heard.

Linda: ...the Oppenheimer house, is that right?

Nick: I think Marc and I at least remember this part of that story--so this would have been probably the one that's labeled Barron here, number 4--is that we were living in number 4. It was built as a duplex, so there were two houses with sort of a thing, a heater and furnace and what not, in between the two, and it had a basement. And the basement of it was obviously--

Marc: A real fieldstone basement.

Nick: --old and a place that we didn't venture much.

Marc: It was really dingy and old.

Nick: Spiders and that kind of thing. When we moved out a bit later they razed the building to make the property ready. And it's our understanding that when they razed the building and began to tear out all the old furnace work and everything they discovered that in behind the furnace there was actually an opening that had been boarded up and a tunnel.

Linda: That went where?

Marc: There was a room too, there was an extra room, I remember seeing it.

Nick: Exactly.

Marc: It was excavated, there were a few old things in there, like a an old bottle.

Alice: I think it was part of the Underground Railway.

Marc: That's what we were told.

Linda: How interesting! It wasn't a bunker that someone had built in the '50s?

Alice: No. It was part of a network for smuggling slaves out...

Marc: No, it was built in the 1800s, or earlier...

[crosstalk]

Nick: It sort of had the feel that, there was a foundation, and, you know, typical of that period, when the government bungalows were brought in it was something put on top of the older foundation that was there.

Linda: Gosh, I wonder what the Battlefield Society would make of that?

Alice: Well, I assume that they knew that.

Nick: It would be interesting to find out what is remembered about any of that.

Linda: Yes.

Marc: I was too young to remember if there was anything in the paper about it. But we heard about that, and then we heard the story that they thought it was going to the old Maxwell Mansion.

Alice: Because that would have been in about '64, '65, something like that?

George: The Maxwell Mansion was gone by then.

Alice: Yes.

Marc: I believe so.

Alice: Well, where was the Selbergs' house in relationship to that? Because the Selbergs' house is gone now, isn't it, that's also been razed to the ground.

George: Yes.

Marc: Really? I didn't go past the hedge to see.

Alice: Because the Selbergs did not own the land, they owned the house but they didn't own the land.

Linda: They built a home on Maxwell Lane. I'm not sure when.

Alice: Yes.

Nick: So Maxwell Lane goes up and around, but there was the bit that goes back and it was a dead end next to the field. The Selbergs' house was the last...

Marc: It was a nice house. He was Norwegian and he had some Norwegian artifacts.

Nick: It was quite a pretty house; very open floorplan, lots of glass in it.

Linda: So, you lived in various places because your father was building a house on Mercer.

Alice: And he would never sign a lease on a rental for more than a year because he was always going to have finished the Mercer Road house.

Marc: This was a man who mounted his own tires in his seventies. He didn't trust a gas station to mount a tire, he mounted them himself. I remember it was probably the early '70s, and he said "Marc, be useful, stand on this tire for me." You know, I was a big kid so I could, while he pounded the rim around.

Alice: So we moved every year.

Linda: Now how was that with schools? You were still in the same schools, right?

Alice: It was horrible. It was horrible. No, you changed school every year. I went to every single elementary school in Princeton and was not at any school for more than one year at a time. I went to some schools more than once because we would come round full circle, and it was horrible.

Marc: But we all went to the nursery school that was off near Springdale, it was like 50 yards or something from...

George: It's where the bus stop is.

Alice: Crossroads.

Linda: Crossroads.

George: And you also lived in one of these houses at one time, right, at the end, the bottom end.

Alice: Springdale Road, yes.

Marc: On Springdale. It was not another 100 yards down that hill.

Alice: All of the houses that we lived in on the Institute compound were those World War II barracks.

George: This is Olden.

Alice: Which were quite nice, actually.

[crosstalk between Marc and George re: von Neumann pronunciation]

Linda: I understand there was sort of a good community there. Were there lots of kids?

Alice: An awful lot of the people that were there rotated, so there wasn't continuity between living there on Cook Road or living there on Maxwell Lane or living there on Springdale Road, there would be three or four years in between, and yes there might be kids there, but they would be completely different kids, so one didn't have relationships with those kids, I think, by and large.

Linda: So who were your friends growing up that were related to the Institute in some way?

Marc: Lars Selberg.⁹

Alice: Yes, Lars and Ingrid Selberg.

Marc: He was a year younger than me, Lars was the year in between us. [indicating Nick] He was both our friend.

⁹ In reviewing the transcript, Marc Bigelow added Sally and Emily Whitney as childhood friends.

Alice: George's sister Esty. I kept in contact with Nora Charney, Jule Charney's¹⁰ daughter; a little collection of people who were at nursery school at the same time. We remained in contact with the Estrins, Gerry Estrin,¹¹ who worked on the Computer Project. And we spent a year in California in '67-'68?

Marc and Nick: '66-'67.

Alice: Gerry and Thelma were at UCLA, so there was a kind of continuity there.

Marc: You didn't spend a year [there] but, you went to college in '69-'70, but Nick and I spent a year in Needham, Massachusetts...

Alice: But there wasn't an Institute connection there [as in the L.A. instance].

Nick: Dad was at the Neuroscience project at MIT. I assume they were there because...

Marc: That's what Dad was doing at the time, what was Mom doing? She was helping out at the hospital or something?

Nick: She wasn't working in any formal way, I don't think.

Alice: I think she took a year off work in order to... She took a year off work the year we were in L.A. and she took a year off work the year you were in Boston, outside Boston.

Linda: Can I ask you in turn to tell me about growing up in the Institute, and in Princeton, and some of the people that you remember? I mean was Einstein someone you recall? Did you play in the Institute Woods? Did you walk to town? Did you swim in the pool that's here in the woods? Visiting friends... Perhaps we could go around?

Marc: What was that big tank way out back in the woods? What was that big tank way out, right back past Springdale golf course, down that dirt road and into the woods?

George: The water works, the Princeton Water Works.

Nick: There's a water works and the swimming pool was back there.

Linda: Right, what do you call that?

Marc: It was a scary place with a huge tank, looking like a smaller version of the oil tanks that are in Newark or Elizabeth.

¹⁰ Jule G. Charney (1917-1981), Electronic Computer Project staff, 1948-1956.

¹¹ Gerald Estrin (1921-2012), Electronic Computer Project staff, 1950-1953, 1955-1956.

George: It's still there. It's the Princeton Water Works, where the drinking water comes from.

Linda: So did you spend a lot of time?

Marc: It still looks like that?

George: Oh yes.

Nick: We explored this...

Linda: Marc, did you spend a lot of time in the Institute Woods as a child?

Marc: We did. We used to go to the swinging bridge. The swinging bridge I didn't like – because I don't like swinging bridges – but I always went and challenged myself to go over it. It was a nice walk.

Nick: Is it still there?

Linda: It is still there.

Marc: I asked the guy [Director Robbert Dijkgraaf] last night.

Nick: We would go out and explore and walk with our parents around there.

Marc: She [Alice] showed me where it was the first time.

Alice: It was a weekend outing. One of the things is, because we moved every year but always stayed in Princeton, there were only certain times and certain places when you were self-mobilizing. So I remember when we were at Maxwell Lane being old enough to go off on our own down wherever, in the Institute Woods, around those fields.

Marc: Cut through the fields to the Battlefield and play out there.

Alice: But previous when we were at Springdale Road I think we were young enough so that you didn't go off on your own. And then other places we lived in Princeton it was too far so you didn't, there wasn't the kind of continuity, but going to the Institute Woods was definitely a summer time, family activity.

Marc: Plus it was a great place to ride a bicycle and it still looks like it is.

Linda: What about Fuld Hall, coming to Fuld Hall? Were you drawn here at tea time, because I imagine they still had tea in the afternoons?

Alice: Only rarely.

Nick: I don't have a memory of coming and participating as a regular thing, and I think for me at least in the phase of my father's life that was because I don't think at that point he was a regular presence at the tea.

Alice: No.

Marc: The Christmas party every year at Fuld Hall, of course. That's where I remember George mostly from.

Linda: So that was a children's Christmas party?

All: Yes.

Linda: And did a Santa come?

Alice: Did a Santa come? One has really strange memories of those things. I remember dishes that had hard candies in them that were just around, you know like nuts at a cocktail party, except it was candy, which was a just extraordinary thing. And there were little, I think they were raspberry, little red things that had sort of goop inside. Do you remember those?

George: Yes.

Alice: And that was a feature, and cookies.

Marc: It's funny, that picture in the book, I imagine that right behind Fuld Hall, like through the double doors. I just imagined that was where the picture was taken.

George: It was taken out on the terrace.

Marc: I just got that from the picture.

Alice: But you went to Fuld Hall at Christmas time and occasionally if Dad had to do an errand then you would be parked there in the Common Room...

Marc: I remember that.

Alice: ...while he went to see somebody or do something or whatever. So you would sit there feeling quite small and rather out of place and slightly intimidated by any adult that might...

George: Yes, they outlawed children at a certain point and the letters are in the Archives here where Oppenheimer says children are not to be in Fuld Hall unsupervised and that was....

Alice: Presumably why...

Linda: It may have been.

Marc: Here, here I was one of those children. If the doors weren't locked I'd head into 'em. Most of the doors around this whole place were never locked.

George: Never locked.

Linda: Did your father ever give you any instructions, "Now when you go here you have to sit and be quiet and..." Were there any instructions given to you?

Alice: Oh, probably, but parents [are] always doing that with children so you don't remember a particular... But more often one would go to the Computer building because that's where Dad's office was. So Fuld Hall didn't feature heavily, you'd go to the Computer building.

Nick: I remember that building, and the secretary there was very nice and that we would just go in there and go find Dad when we wanted to.

Linda: What was her name, do you remember?

Marc: His office was very cramped.

Alice: Yes, but that's because he had so much stuff in there.

Marc: Oh, he had stuff in there.

Alice: I remember spending much time in the machine shop at the end.

Nick: Oh yes. I've got one, I'll bet this has got you beat. I've slept in the Computer building.

Alice: O.K. How come?

Nick: So I came back with Dad a couple of times for example while we were in Massachusetts, and we slept on the floor in his office in the Computer building.

Alice: He had a very nice, really, really, really crappy old leather sofa.

Nick: Right, he slept there a lot.

Marc: It was covered with papers and books for twenty years.

Nick: I can remember the secretary there was very friendly and I can remember funny things about it. You know before they put in air conditioning they used to have drinking fountains everywhere, with a thing on the wall that you could turn and

salt tablets would come out of it. So this was at a time when people actually took salt tablets in the summer. Now forget about it, right?

George: And again, there's a letter here where the Director complains that they're asking for too many salt tablets: we don't need them in Fuld Hall, why do they need them in the Computer building; not knowing that those guys were working.

Linda: They needed those salt tablets.

Marc: My father regularly used the machine shop even after my first child was born, she's almost 33, I had a car where the brakes were going, and we used the Institute lift down there. He always had a few project cars¹² down there.

Alice: And there were some very very nice guys.

Nick: As you probably know, my father had a quite constructive, positive relationship with many people on the grounds staff and the maintenance staff. Not all, but many of them. Certainly at the time that I remember there were really two components to the staff, there were the people who were like the facilities/maintenance people and ran things and then there were the people that were the grounds crew and the grounds crew was essentially all African American. I don't know but I had the impression that my father was the only one who was quite friendly with many of the people on the staff, particularly on the grounds crew.

Marc: He would talk to anybody, he was a polite man.¹³

Nick: They helped him, he'd be working on his car and they'd come in and help him if he needed a hand or he would help people.

Alice: And certainly when our mother was ill, Elizabeth Anderson, who was the widow of the guy who was one of the motor pool guys, who was called Jim Anderson, effectively volunteered herself as a housekeeper, and said to my mother and father that you were the only people that didn't treat us differently because we were black and I will come and work for you. Because I cannot imagine my father having actually taken the initiative to go and find someone to help despite the fact that my mother had had a stroke and was not in good condition and Elizabeth saved their lives, I think it's fair to say. My mother, our mother, lived for another 10 years or something...

Marc: 13.

Alice: And was not well, was very not well, for the last four or five years of it.

¹² In reviewing the transcript, Marc Bigelow clarifies that these were "aka junk cars."

¹³ In reviewing the transcript, Marc Bigelow adds: "Dad would be a quick friend to anybody but he had few real friends. Freeman Dyson was one."

Linda: I was interested in that aspect of your father's life simply because the blacksmith shop he bought was on Clay Street, which is right in the heart of the Witherspoon neighborhood, which is the black community of Princeton, and I know that quite a few of the people from that neighborhood worked at the Institute so one of my questions was going to be about your observations about race in Princeton.

Marc: My parents encouraged me to have black friends.

Linda: And did you?

Marc: I did, but not so many. I remember being the only white kid at a black kid's birthday party and remembering Mom had bought a nice present, a Tonka toy. And I was thinking "Oh, you could buy one of these for me." [laughter]

Alice: She was a mean and horrible mother and she didn't. [jokingly]

Nick: Growing up I think it's fair to say both of my parents had very strong feelings about inequities and racial equality and that was something that from a very early time was just simply part of the currency of how we were raised. And a trivial example of that but one I had very strong memories of, my father was on a first name basis, for example, with many people on the grounds crew so he would go to work on his car or something and bring one of us along to hold the flashlight, pass tools, something or other and I can remember very distinctly one time my father was talking to the guy and he called the guy John or whatever his first name was, I sort of forget, and I remember doing the same thing and him [my father] taking me aside and saying, "No, he is Mr. So-and-So." And it was that kind of view of people that showed up both in terms of the details of just interactions around the Institute but also within the town of Princeton. Marc says this, I mean fifth grade I spent the night down on John Street with a friend of mine. Anything that I can remember with my mother or father that ever I did that indicated I was sensitive to race they would both sort of say, "Why are you telling me that this friend of yours is black?" They had very strong feelings that all people should be treated the same way and Princeton, of course, as you know, is strangely segregated.

George: Well, it was really, strictly segregated then.

Alice: Very much so.

George: [unintelligible]¹⁴ black school, that's why there's a Borough and a Township.

Nick: There's a piece of Princeton that reflects the connection to the South that for many people, unless they've actually lived here, don't recognize.

¹⁴ In her review of the transcript, Alice Bigelow pointed out that George Dyson was most likely referring to the school on Nassau Street.

Marc: There's the mansions on the west end and the servants live down Witherspoon Street.

Alice: The university was the northern university for Southern white kids.

Marc: [unintelligible] Lane, an Italian gardeners section for the West end.

Alice: A lot of the dormitories have got rooms where you could house the slaves that you brought with you.

Linda: Thinking about your parents, and this is the '50s and '60s, the era of cocktail parties and so forth, I wonder if you could say something about your parents in connection to Institute society.

Alice: Well, I think there's a number of things. Our mother was a much more sociable creature than our father. For anyone who knew them, that's square one. She liked parties, she liked socializing, she was comfortable with it and one assumes reasonably competent, whereas I think our father would really rather have sat in a corner with a book at most of these events. I also think that there was a, well, hindsight makes one question the degree to which it was our father's unsociability or the fact that he was not one of the in-crowd at the Institute, but there were certain cocktail parties that they were invited to and our mother was always quite keen to go and I think our father went slightly reluctantly.

Linda: Would these be at the Oppenheimers, for example?

Alice: Yes, regularly at the Oppenheimers, and the von Neumanns.¹⁵

Marc: He considered Freeman Dyson a good friend. That's the only place, to the Dysons, that my father took me to any of the other Professors, what do you call them, around here.

Alice: But I remember, that's the age thing, I mean I remember they were also quite friendly with the Charneys, and all of that. By the time you [Marc] were around or would remember they were all gone.

Marc: Right, well I recognized a lot of the names.

Nick: Many of the people like the Charneys, that's an example of the Computer Project community.

Alice: Yes, the Charneys, the Estrins...

¹⁵ John von Neumann (1903-1957), Faculty in the School of Mathematics, 1933-1957; and Klara Dan von Neumann (1911-1963).

Marc: The Estrins, Gerry Estrin, I remember that.

Alice: There were loads of people connected with the Computer Project. There was a lot of socializing that went around, that I remember from being very young. And by the time I was older, so I guess before both of my brothers were born, I remember there being, sort of the smell of Chanel No. 5 and the high heels and our mother had, there were certain outfits that she wore when she went out--I can't even visualize them but I can hear the sound of the...

Nick: Weren't there a few people that did things like musicales, that had parties and people would play different instruments?

Alice: Yes, there was a regular social circle of that sort of stuff.

Linda: Who would be your babysitter on those occasions?

Alice: We had a particular babysitter who first started working for our parents when I was 16 months old, which I guess was when our mother went back to work. She was a clinical psychologist and initially had a private practice along with Eileen Berryman, who was wife to John Berryman, the poet, since you're such a poet. And when our mother went back to work they found a woman who worked for our parents until Nick was 12, 13...

Marc: A little bit younger, I think.

Alice: ...so the best part of 20 years.

Linda: What was her name?

Alice: Her name was Helena Pierre.

Marc: They called her Pia.

Alice: In fact, Nick's middle name is Pierre.

Linda: Oh, I was actually going to ask if you were named for Nick Metropolis, because I remembered the name. No, you don't know?

Nick: I've asked where my name came from and I was never given a particular answer.

Alice: His birthday's also the 26th of December, and I remember saying very crossly, I expect very crossly because there was another new baby, "Why didn't you just name him Santa Claus and be done with it!" [laughter]

Linda: When you were growing up was there a feeling, you're all growing up in the early, mid-'50s, '60s, was there a feeling that the Institute was divided along

generational lines, that there were young families with kids contrasting with the older stuffy professors?

Marc: There was a feeling to me that the professors did their own thing and rarely, I mean my father and Atle Selberg rarely spoke, we were just talking about that earlier, they just weren't of the same groove, you know.

Nick: But as a little kid when we did live here, certainly, I can remember having a different perception of people living in any of the project space compared to, when we lived on Maxwell Lane, I remember playing with the Selbergs, I remember playing with, uh...

Alice: The Whitneys.

Nick: One of the Whitney children.

Marc: Whitneys, Sally and Emily.¹⁶

Alice: And that was it really.

Nick: Neither of the Whitney parents¹⁷ seemed to interact with my parents, but they were in houses, they were in houses that were mature spots and there were people that lived in them. And then you would go adventuring down here [where] there would be all kinds of people and interesting stuff to see, but it seemed quite separated.

Alice: But it was all transient, it had that feeling of being transient.

Linda: Because Members were coming and moving on?

Alice: Yes. And I babysat because I was then old enough so that I started to capitalize on the babysitting market and the Institute project was a real goldmine as far as a teenage babysitter was concerned.

George: Yes, I used to get called in when Esther got double-booked.

Alice: You'd put a notice up in the laundry room or somewhere and you'd get phone calls and it was great.

Linda: Lucrative too, I imagine.

Alice: Absolutely, very lucrative.

¹⁶ In reviewing the transcript, Marc Bigelow adds that Hassler Whitney was a relative of Eli Whitney.

¹⁷ Hassler Whitney (1907-1989), Professor in the School of Mathematics, 1952-1977; Emeritus Professor, 1977-1989; and Mary Barnett Whitney, 1924-1988.

Marc: That little laundromat looks the same as it did 40 years ago.

Linda: It does?

George: The same.

Nick: Alice mentioned sort of the effect of the age difference, one of the things for me personally in terms of the family, I don't have the same--we've talked a lot about this--I don't have the same problem memories with the fact that we moved around, I just remember all these different houses that we lived in, some of which were quite, we had an indoor swimming pool one year, and I remember the Institute as being a relatively transparent and open place. When we lived in Springdale Road, Marc and I went and made friends with the caddy that ran the driving range before they built the stuff that was there. When we lived in Maxwell Lane, Marc and I used to ride, the back of, remember his name, the farmer, he used to let us ride the back of his baler and my father, of course, thought this was nuts, right, two little kids riding on the back of this tractor doing stuff, but that people were quite friendly and simply Fuld Hall was...

Marc: Was it Carr, Mr. Carr?

Nick: Mr. Carr, well done. That's right. Fuld Hall was a place not of, it just didn't seem...

Linda: It didn't draw you.

Nick: Strictly out of bounds but, of course, property out behind it was interesting, out through the woods was interesting.

Linda: So were there barns and things down there?

Nick: Oh yes.

Linda: Tell me about those.

Nick: You could get, this is one that transcends many generations, well depending on what you call generations. I remember, and reading some of the stuff that George has written, the same thing from 7 or 8 years before, going and digging around in that stuff, and every so often my father or somebody would find out and scold us, you know we weren't supposed to be back in there, and of course a bunch of stuff that was in there he'd put in there. [laughter]

Marc: Dad didn't want to leave us at home alone. He took us to the IAS and then he got busy and he said don't get into trouble.

George: [unintelligible] professors' stuff...

Nick: All kinds of interesting stuff...

Linda: What was in there that attracted little boys?

Alice: Little boys, because me, no.

George: Well, there was old farming equipment, old milking equipment, and then there were all these printing plates, from one of the professors who had printed, must have been Herzberger, one of these, so plates of classical Greek pottery stuff he dug up but we didn't know what printing plates were, we thought these were ...

Alice: Of course you don't really know what the stuff is, it's just stuff.

Marc: ...weird stuff...

Nick: ...electronics...

Marc: You didn't want to touch some of that stuff because you might get it on your hands.

Alice: Wasn't there a metal shed?

Nick: Yes, Dad occupied some of that space.

Alice: He occupied and then was told to vacate and it had all kind airplane parts, circuit boards, stuff that...

Nick: I'm sure some of the stuff that in fact we gave when, I forgot to bring it, I've got another one for you, whether it's a shift register or whether it's, a box yay big with tube sockets and...

George: Yes, that's what I want to see. It could be really [important].

Nick: We did bring one or two pieces over here when we came...

Alice: There was also stuff that went...

Linda: So these are pieces that came from your father's stuff that was stored in the barn?

Nick: And clearly was part of the Computer Project I remember one of two of them still had aluminum...

George: Probably since he saved everything else he knew the important things...

Alice: But he saved the unimportant things too.

George: See that's the problem. When he built that first shift register, which is like a really historic thing, I'm sure he saved it and that's the one that's in the photographs and you can identify it.

Linda: So perhaps you've got something there.

Alice: He did save everything, I mean literally everything.

Nick: As Alice was putting it the other night, right next to that were two old posters.
[laughter]

Marc: And washing machines.

Alice: And washing machines. When our mother was dying in Princeton Hospital and she had had a second heart attack and was in a coma and it was clear that she wasn't going to make it, and Nick and I both came to Princeton and were hanging out effectively waiting for her to die, which is a fairly strange head space to be in, and our Dad was quite disengaged. Now previously if you went to throw anything away, he would spot you, he would spot you even if you thought that he hadn't spotted you, he would spot you trying to sneak out of the house with a bag of old newspaper to take to the recycling center. But this fortnight Nick and I got away with murder, it was terrible. I mean on one level we were keeping ourselves sane, on another level we were exploiting the fact that Dad was in a not particularly engaged mode. But we did things like went through paper shopping bags that he had emptied his desk at the Institute out into when they had said it's time to give up the office.

Nick: They had moved him out of the Computer building into one of the old houses. And then out of the old house into...

George: Yes.

Linda: On Olden.

Alice: And he had then moved all of these shopping bags underneath the piano in the living room so Nick and I entertained ourselves on these.

Nick: We were in our twenties, you were probably late twenties and I was in early twenties, so that was the timeframe.

Alice: And we entertained ourselves by going through these paper bags and we found unopened junk mail from 1958, around the time that Nick was born, so clearly we don't bother to open the mail because we've got a new baby.

Marc: Armenian newspapers from the '50s that Dad was going to use to learn to how to read Armenian.

Nick: Armenian Friendship Society.

Alice: The Armenian Friendship Society, courtesy of [Kavafian], who was a friend of Dad's, and who obviously took him to some event some time at the Armenian cultural center, and he got on a mailing list and was sent a newsletter monthly forever that he carefully tied up in string and put in the attic, in Armenian.

Nick: In case he'll ever learn it.

Alice: In case he ever learned it.

Nick: Just before it escapes me, to shift gears completely, this is probably not in George's reference place, but in fact, some details from reading some of what you've written, George, I've put pieces together that I hadn't before, one of the other things we'd go to would be, in the summer, go to a picnic at RCA.

Alice: Yes, the RCA picnic.

Nick: Because, you know there was a relationship between the Institute [Computer] project and RCA through memory storage tubes, but also a number of other layers of things and I think even some of the, possibly, what was it, some of the security clearance things were done through ...

Alice: RCA.

Nick: RCA, or I'm not sure how that happened.

George: But your Dad did work for RCA where he had to have clearance.

Nick: Right.

Alice: And there was a big staff picnic.

Nick: There was a social connection there.

Linda: Between people working on the ECP and the ...

Marc: In the late '40s they came out with a smaller vacuum tube, a 9-pin and a 7-pin miniature, which, you could have built the computer with bigger tubes but he even went from then on to make it smaller it was still quite a large machine but [it would have been bigger if not for the 7- and 9-pin tubes].

George: But he kept working for RCA.

Nick: Right. But what I was getting at is there was some interesting, and you know more about it than I do, some interesting dynamics going on, decisions about the computer's architecture, some of the hardware that would be used on it for

the memory systems and yet at the same time my father brought us through some of the social connections that he had through this appointment at RCA and I always wondered how that had worked out. If I'm correct to mention that they were building what the Selectron tubes for the memory and the Williams tube was developed in the UK and then...

George: Well, it was developed here, in terms of random access.

Nick: Right.

George: But I think your father was very, mind I say I'm reading between the lines, but I think he was very nervous about Oppenheimer, who was like ready to, was looking for an excuse to kick Julian out completely, and too much outside consulting would have been a... So there are several letters where he's writing stop sending me mail at the Institute because you know Oppenheimer would say well, you're doing too much consulting, you've lost your position. Unlike von Neumann who did nothing but consulting and never got questioned.

Nick: Wow.

Marc: I never knew that.

Linda: If I can just backtrack, I want to go in that direction a little bit more, but if I can just backtrack for a minute, when I read your father's description of the Computer Project which was quoted last night, "it was happening here...we were lucky to be involved in it. John von Neumann cleared the cobwebs and things would never be the same afterwards," I wondered if you as children had any feeling that there was an impact on you of that kind of joyful feeling that they were all, or was it just that your father working all the time?

Alice: Well, you have to bear in mind our respective ages and the Computer Project's age. So I was born after and I'm the oldest by 5 years, so actually by the time, and, you know, you don't remember what's happening when you're 2.

Nick: It was shut down in '57?

Alice: It was shut down in '57.

George: Well, it had gone to the university in '57. It was effectively, Julian was out of it by '56 really.

Linda: But do you remember a change in atmosphere?

Alice: No, really not. Because Dad worked all the time anyway, I think Dad worked for his whole life, whatever he was doing, he worked all the time. And whether he was working all the time, whether he was doing outside consulting, whether he was working on the computer, or whether he was fixing a car, when you're a kid,

you don't know the difference. He's working. And he worked very hard and long hours, and wasn't traveling then, he wasn't going away, that was later.

Marc: He was kind of a loner and that always fed into his thing. He made small noise about his achievements.

Alice: And he didn't talk about what he was doing.

Nick: And neither did our mother.

Alice: Mummy did much more, Mummy did much more. There was much more, I mean she was quite gossipy. [laughs]

Linda: Did he talk at all about the computer?

Alice: No, no, no. I mean I remember, O.K., and I have no idea how old I was, I think relatively small, I remember going to the Computer building escorted by Dad, and I think therefore it was either before Marc was born or when Marc was an infant so that it was a, you know, take the child with you kind of thing, and he would go and check stuff and I think that must have been when the computer was still running, so maybe that was even before Marc was born. And I remember being small enough so I was carried.

Linda: George talks about him being a role model for himself, for George. Was that your experience? What was he like as a dad?

Alice: Come on, but George also said "it was not my father"¹⁸ and I think that's kind of part of the definition, isn't it? Your father¹⁹ doesn't fill that function [of role model].

Linda: Did he help you with your homework?

Alice: Oh God, you never, ever asked Dad to help you with your homework because when you did, four hours later you would still be there because he would be explaining why, he would be telling you why

Marc: But he'd teach you a different method than the teacher, a better method.

Alice: And really what you really wanted was how to solve this math problem, not why, aged eight, 11:00 at night and Mummy saying I think maybe you should let them go to bed now.

¹⁸ Refers to an introduction to a talk by George Dyson in which he expresses his admiration for Julian Bigelow as the man who could do anything and the person he looked up to in contrast to his perception of his own scientist father Freeman Dyson.

¹⁹ In reviewing the transcript, Marc Bigelow added: "Dad would have treated George or someone else's kid different than me."

Nick: There's that famous joke where a little kid says, "Mummy where do I come from?"

Alice: Do I care?

Nick: "Timmy says he's from Trenton. Where am I from?" What was the question?
[laughter]

Linda: Too much information.

Alice: He was a good teacher but not capable of cutting short the explanation.

Marc: But then again he did at the dinner table ask us to solve math problems in our head. I was upset because my two year younger brother most of the time got the answer just before I did, but we weren't allowed to write them down, we weren't allowed to count on our fingers. To this day I can go to the grocery store and they ring it up and they show how much change to give you back and I already know what's coming back. Instantly.

Linda: Did his habit of to-do lists rub off on any of you?

Nick: Sure.

Alice: Oh yes.

Linda: You're all to-do listers?

Alice: Oh yes. But I think more significantly is things like, we all grew up, Marc was saying earlier jump on this tire, hold the flashlight, there's a flash of recognition that all of us will ...

Nick: Mind on the job!

Alice: Mind on the job. We all grew up holding the flashlight for the car engine, we all learned how to jumpstart a car as soon as we were old enough to see over the dashboard.

Marc: Change a tire.

Alice: I wasn't allowed to even begin to learn to drive until I could change a tire, I mean just incredibly flat.

Marc: Remember when you drove to New York, you were like 17, and the fan belt went and I changed it?

Alice: Yes, I do, I do.

Nick: I'll give you another. So you get a group of siblings and there's an age spread and certainly I probably benefitted from a lot of different things, one of which being the youngest ...

Alice: We'd broken them in.

Nick: They'd broken them in. But I actually have lots of fond memories of going to the shop and watching my father do stuff. Of watching him weld things on the car, of watching him use the lathe and do things, and him being very patient with my watching and explaining all this stuff. I think that's made a huge effect on the kind of person I am and how I do things. Some of them the neurotic ones as well, but many of those things, it was just really cool, it was really neat, and I have to admit in that frame of things, and again it's because of seven years difference. At the time I had no idea what my father did, really. I mean he was at the Institute.

Marc: He was working, in his office.

Alice: What does your father do? He's a mathematician.

Nick: And I knew he'd worked with somebody famous named Wiener and sort of that kind of thing.

Marc: von Neumann.

Nick: I did go on several trips with my father when he went to things. I remember he was consulting for, it was probably the NOAA, the National Bureau of Standards, maybe doing weather stuff and I drove with him to Colorado, went to a conference that he was at. Of course, in hindsight I understand better and better that he did a lot of those kinds of things, and I think he did them for a variety of reasons, including the fact that they supplemented his income, but that he actually really probably never dug deeply and threw himself into anything after the Computer Project.

George: And almost all of those engagements were people-driven, they were people that had been here as part of that core group, who were like living on a two-year camping trip together. Like Ralph Slutz,²⁰ who went and started the National Atmospheric Laboratory in Boulder.

Alice: And he was the connection with Boulder.

George: Those people knew Julian and knew how difficult it was to get him, and they would just drag him out there.

Alice: And he would go.

²⁰ Ralph Slutz (1917-2005), Electronic Computer Project staff, 1946-1948.

George: In fact that's how he went to UCLA with the Estrins. All those connections later were the ones he formed here.

Alice: Yes, and those connections were quite enduring. The Estrins--we were in contact with the Estrins, they used to come to London every year, and so they knew my children quite well, they remained in touch. But I was going to say something else to follow from Nick's--

Nick: By the way, this picture in the upper left, my father took me to that. I spent the day here.

Linda: Interesting, that was Stephen Hawking at the Einstein Centennial. You came to that with your father?

Nick: I just remember being stunned by this mostly paralyzed guy giving a talk, the patience and admiration, just the audience was silent as if they were in church. But these are the kinds of other bits of my father's...

Marc: I would call my father mechanically gifted. And growing up during the Depression living on a farm, they were poor, he had to fix everything at a very young age, and he was very competent with his ability to fix things. In fact later in life, when you live in Princeton every once in awhile you have to have a furnace inspection and some guy came in and tried to sell him a new furnace 'cause there were little pinholes and, you know, "my brother-in-law sells furnaces." And Dad said "Well, I was a welder in the Navy." And he wasn't. He welded the furnace.

Nick: He wasn't.

Alice: He wasn't in the Navy!

Marc: And the guy came back...

Nick: He brought it to this shop and welded it here.

Marc: Right. The guy came back...

Alice: And we sold that house last summer with those home repairs. You talk about father and role model. On one level the answer is, of course not, he was our Dad. The relationship with your dad isn't like that. But he was also, as I think was true of many families in the '50s and 60's and '70s, and our mother was not a small personality, but the household revolved around my father's personality, I would say. Despite the fact that, when we were, not very small but sort of middle school aged, he was away a lot, he traveled a lot and was away a lot, and when he wasn't away he was working quite long hours so our mother was much more of a dominant carer than our father. He didn't cook.

Marc: He was a patent testifier. At one point I run into some guy that "Oh, you're Julian Bigelow's son? Julian Bigelow was the guy they called up and wanted to know whether this thing or that thing was going to work or not," you know. And that was my father. Living in Vermont you have to stay warm in the winter, that's where I've lived for 35 years, and I found out about a perpetual heat machine and my father instantly said nonsense and told me there are so many physical things, how it was not physically possible, in saving money on that you'll end up spending the same amount on this and that. I think it was one of those infrared heaters. But physics he had it all right there.

Linda: It seems your father had a lot of jobs and I'm wondering if it was, was it driven by his multiple interests, or was he driven to support a family? I mean, was there financial consideration in there?

Alice: Well, I mean...

George: They never gave him a raise here. So he had to take outside consulting, and I think he was scared of taking too much from one, you know, that if he had taken a half-time contract from RCA or something. I think that's one reason he was scared to stay at UCLA because then they would [object] and not let him back. They [meaning the Institute] were looking for excuses.

Alice: Right, but one mustn't over, when we were kids our father always had a bit of the culture of 'this is the Depression,' there's never enough money, how can we ever afford to do X, Y, and Z, and actually he provided extremely well for himself, for his wife, for his second wife, for his grandchildren. They could have spent more money, or he could have worked less hard to earn less money and they would have been just fine.

Linda: But was it something that worried him?

All: Yes.

Linda: And you think it was because he was born during the Depression years. It's quite a common thing.

Nick: Probably a mixture.

Alice: A mixture.

Nick: That certainly fed things. Just to give you one answer to a piece of that, very late in his life he said to me, "I wish I hadn't worried so much about money." It was a very interesting and extremely insightful thing. He also, when I first got a job where I asked him what to do with it, you know do I just put it in the bank, and he told me some things about investment and he also conveyed clearly that he considered money, he had some sort of feeling that you should be able to live off the check that comes in the door and any other assets, and any other savings

that you have, things in the stock market and those places are sort of hypothetical, that the way you should plan your life is that if you've got a certain amount of income, you should be able to live off of that.

Alice: He didn't buy anything on credit.

Marc: He didn't believe in credit cards at all.

Alice: Or any other form of credit, credit cards, credit anything.

Marc: He didn't spend any money on anything unnecessarily.

Nick: Things that I didn't know and that have been revealed through some of George's research and the documents here are things that to me are incredibly key things when I think now about that story. I wouldn't have known that the Institute flatlined his salary, that the basic message was that von Neumann had pushed and got Goldstine²¹ and Bigelow permanent appointments here, but that the leadership, the vast majority of the permanent members weren't very supportive of this, and that one of the actions was not to really give them raises, and to create a very unfriendly environment in some ways or at least not supportive, and I'm sure that exacerbated Dad's behavior a lot. I wouldn't have known that.

Alice: And [that] fed the "we don't have financial security" culture which certainly was the culture that he subscribed to. The degree to which that was true or false is sort of irrelevant.

Linda: Did he, was he concerned, I know that von Neumann, when the computer was working and advances were being made, he wanted that information out quickly, to get it out as quickly as possible and he was not keen on the sort of patenting of advances that went on with the ENIAC in Philadelphia. Did that disadvantage your father?

Nick: I don't think we will ever know. I believe the answer is surely yes.

George: He was very bitter about that.

Nick: He didn't talk with us about it.

Linda: So how do you know about that and they don't?

George: No, he wouldn't talk about it. The interview that he gave with Nancy Stern that is embargoed now, I mean he asked that it be destroyed, but there is a copy here, a copy in your father's papers, he says "if you turn the recorder off I will talk about this."

²¹ Herman Goldstine (1913-2004), Electronic Computer Project staff, 1946-1956; Member in the Schools of Mathematics and Natural Sciences, 1951-1958; Member in the School of Natural Sciences, 1972-1985; Member in the School of Historical Studies, 1977-1985.

Linda: Because clearly he could have made money from patenting some of his advances. Correct me if I'm wrong.

George: Well, no. All those guys signed on to a patent policy, he brought in these guys who all were young, had families, were at the stage in their careers where they could go work for IBM and do really well or they could come here and make a whole lot less. And the agreement was that the Institute would bring in a patent attorney and file patents in a timely manner on all inventions and then von Neumann made an unbelievably generous split with the engineers and that's the basis on which he brought in all these young guys in here. And then mysteriously that agreement was unilaterally eliminated and nothing was put in, and the engineers who have spoken about this, say Julian called a meeting and brought us all in and said look this is the way it is, we can't change this but you need to know, and you need to choose, are you staying on board or are you leaving? And they decided we'll stay, this is exciting enough. But what was unfair was that ...

Alice: That was a mistake.

Nick: Right.

George: ...was that through all that von Neumann was privately consulting for IBM and got paid, he got a \$50,000 honorarium from IBM for one patent taken out by IBM in von Neumann's name and nobody else got anything and I think your father was particularly, and this is the part I don't understand, he was very unhappy with Herman, Herman Goldstine, who got the same deal here, left to IBM and then when after a career at IBM when he wanted to sort of retire, he was welcomed back here as a permanent member and that was somehow, I think, hurt your father more.

Alice: Yes, I don't...

George: But he wouldn't talk about it.

Nick: He wouldn't talk about it.

Linda: But he didn't talk to any, did he talk to your mother?

Marc: I remember my mother saying to me that he got screwed when I was a kid, I just... Is there a bathroom in here?

Linda: There is.

George: Out through the hall that we came in. To the right.

Nick: Maybe Alice knows different, but I am unsure. I am unsure the degree to which some of the details of what was going on my father brought home. Now that's not

to say he didn't bring it home in his behavior, or in his sense of happiness and those things that make such a big difference.

Linda: Was he a happy man? I don't mean all the time...

Alice: He could be. Sometimes.

Nick: But I would say very much from my point of view as one of his children, I don't remember him complaining about anything ever.

Alice: Ever.

Nick: Ever.

Linda: He just worked?

Nick: He didn't bring stuff home, he didn't talk in a negative way about anybody that I have memories of. He didn't talk about those things period.

Alice: He was very, oh he had an extraordinarily strong code of what was right and what was wrong in terms of what you say about other people, what you. He was the antithesis of gossip. He would have felt it was to be deeply disrespectful and would belittle his own sense of self and that was quite closely held and I think it colored, now I think he said some stuff to our mother, I think our mother observed quite a lot of stuff and had a perspective on what was going on, but I don't think it was necessarily because he unburdened himself to her. I think he probably did not.

Linda: Now when Ware²² left, Goldstine departed, von Neumann had died by this time, your father really was the lone individual working in this rather complex and multi-interdisciplinary area. But you didn't find that he was lonely? Did you feel that he was not accepted? Did he feel that he was not accepted by the rest of the Institute?

Alice: Yes. Yes.

Nick: Again I don't know but I believe so.

Alice: I believe that from him, not from mother.

Marc: But he talked about this place in a good manner, he talked about Freeman, he loved Freeman.

George: But Freeman feels very sad now, he has real regrets about it, why didn't I talk to Julian more and even I sort of, not ignored him, but didn't go out of his way.

²² Willis H. Ware (1920-2013), Electronic Computer Project staff, 1946-1951.

Linda: So your father didn't talk fondly of the Institute?

Alice: He didn't talk. When you talk about somebody being isolated, he wasn't a hugely social person. The friends that our parents had were largely friendships that were cultivated by Mummy. That isn't to say that he didn't have relationships.

Nick: Although I do have a memory of, in situations in which there was engagement that he seemed to engage very well with people. So it's one thing to be antisocial or to be non-social and I have a feeling that once in those modes he was probably quite an engaging guy to interact with.

Marc: He didn't say a lot, but when he started, you know you might get a two-hour lecture you know. But he was quite happy with himself as a loner.

George: He kept taking classes at the university, which is the other heartbreaking letter in these files. The deal with, another way they were able to get these young engineers here was they made a deal with Princeton University where Princeton University could use the computer and in exchange all the computer guys could take classes at Princeton toward their Ph.D.s, which was a great way of bringing in these bright young people. And Julian took advantage of that and kept going. And then there's this letter where they finally say "Mr. Bigelow you've been taking classes for X years and unless you submit your thesis you no longer are welcome to take classes." A big part of his life was attending, just learning here.

Marc: Were the classes at Princeton or here?

George: At Princeton.

Linda: And yet he did go out to the West Coast, a lot of the people from the ECP project ended up on the West Coast. I get the feeling that because he was so accomplished he could have gone anywhere. So why did he stay at the Institute? Does it puzzle you?

Alice: No.

Marc: No. He liked living here, I think.

Alice: I think, and this is a completely gut analysis rather than evidence-based analysis but I think he was fundamentally not terribly confident of his ability to secure a secure position and I think the position at the Institute was, it didn't make him feel as secure as he would have liked to have felt, but I think it was a safety net.

George: Right.

Nick: But he also never left anything that wasn't done and he didn't finish many things. And this was part of that as well.

Linda: You mentioned that towards the end of his life he said to you he wished he worried less about money, did you ever feel that he regretted that he didn't leave the Institute and forge, go off somewhere where he might have been better appreciated?

Nick: Yes.

Linda: You do feel that? Did he say that to you?

Nick: No.

Marc: He told me that he wanted to live in Princeton one time. He said this is where I want to live, in the town of Princeton.

Nick: So in that sense, the answer I gave is of a concept. I think he regrets that he didn't have that kind of vibrant academic intellectual life that he might have if he'd taken any of those positions or if the Institute story had been different. I do think that's true, although he never said so. You know I went off to a university and he was clearly, through much of that, delighted with this choice and I couldn't help but feel that part of the delight was connected to that for him as well, not just how you feel about your children's things.

Linda: You all went off, you all left Princeton, each one of you.

Alice: Yes, well.

George: The other sad comparison is Piet Hut,²³ who's a physicist here who they also tried to kick out, but he, unlike your dad, he fought back, and got a lawyer and won. He said well, I have a permanent appointment, you can't kick me out. By this time, things were so, there was so much tension, none of the schools would have him, so he said not only am I staying but you got to give me my own school. Here's--what would have worked so well for Julian--a little school of people, he brings in, he has some allotment, he brings in three visitors a year and they come and work with him and it's worked out pretty well now.

Linda: I think it is a parallel situation. Clearly when your father and Herman Goldstine were made Permanent Members, there must have been an intention that work in computing would continue in some respects, and that didn't happen until much, much, much later.

Nick: That seems the case but, you can frame it in many different ways, but von Neumann died.

²³ Piet Hut (1952-), Member in the School of Natural Sciences, 1981-1984;), Professor in the School of Natural Sciences, 1985-2002; Professor in the Program in Interdisciplinary Studies, 2002- .

Linda: von Neumann died.

George: And they [were] unhappy with him [von Neumann] too.

Nick: But his many characteristics were able to keep that rolling in a way that certainly my father didn't, and my father, again this is my perception, my father didn't ask for things readily.

Alice: No. No.

Linda: What was his relationship like with von Neumann?

Nick: I only really know from what I've read.

George: Yes. The documents show just tremendous respect both ways but not a [deep friendship], you know, von Neumann was so aristocratic. It was very unusual for von Neumann to hang out with an engineer from New Jersey under any circumstances. What I do know is that when von Neumann was dying in the hospital, in Walter Reed, and again this is all documented, von Neumann goes to the highest levels of the AEC and gets your dad's security clearance put back.

Nick: So that he can come and talk.

George: ...and also a small travel budget to go down there every week.

Linda: So that Julian could visit him.

George: Yes.

Nick: The only way I knew that is that my mother told me.

Linda: And presumably von Neumann must have asked for him and created the route to that.

Marc: But I got the impression that Dad did the most visiting of von Neumann when he was dying.

Linda: That's interesting. Is there something else you want to say before we move?

Nick: This was just a completely tangential one, but I can remember in whatever the appropriate year would have been maybe, high school-ish, I bought my father a programmable calculator, one of the first ones.

George: An HP-75?

Nick: Exactly. I bought him this thing, with books and everything like that. It wasn't cheap, but I just thought, and my father was, it was Christmas or I don't know what. I gave him this thing.

Linda: Don't tell me he took it apart.

Nick: No. He never opened it.

Alice: No. Much more heartbreaking.

Nick: He never opened it. Now for me that was heartbreaking, not in a big way, it wasn't one of those great things that has nagged at me in an angry or upset way. You know the event happened, he was pleased with it, he beamed at it, he stared at it, he looked through some of the stuff. And then I just noticed it never got opened. I tell you this story simply because, again I suspect there's a long conversation with this, but as I've read, for example, in George's work and started to think and look at it, I'm understanding much more what he was interested in about the Computer Project, that this object that could do all this cool stuff in a little thing was fine, but it wasn't being able to sit at home and play with the computer that was of interest to him, it was aspects about what computation could do for you, aspects about what were the limits of it, how it interacted, what it meant, how it fit into the way you think about and do problems, and I read this and now I understand completely he didn't want to fiddle around with this thing.

Alice: He never wanted, he never learned to use a PC.

Linda: He and Gödel²⁴ should have been on the same wavelength. Did they have any [interactions]?

Nick: I don't know.

Linda: Not that Gödel had anyone on his wavelength. But clearly he must have admired...

Alice: And as my husband pointed out yesterday, he [Julian Bigelow] never even learned how to program the video. It's just, none of this technology that is so much the descendant of the work that he did, had the slightest interest for him, because that's not what it was about, as far as he was concerned.

Linda: Do you have knowledge of whether he and any Gödel had any interaction whatsoever?

Nick: I don't. Have you found any in the?

²⁴ Kurt Gödel (1906-1978), Member in the School of Mathematics, 1933-1935, 1938, 1940-1953; Professor, 1953-1976; Emeritus Professor, 1976-1978.

George: No, not really. They were friendly but in a way they were both sort of outcasts in a sense.

Marc: He never said anything bad about Oppenheimer, but you said that Oppenheimer moved to try to get rid of him.

George: Yes.

Marc: He never said anything bad about Robert Oppenheimer.

Linda: May I ask what it was that prompted you to donate your father's papers to the Institute?

George: It was probably me.

Linda: They're all looking at you.

Nick: George.

Alice: Yes, it was George.

George: And I would say it's the fact that there is an archives.

Linda: There's somewhere for them to go.

George: When this question came up, there was an argument for the fact that they hired, finally, a full-time archivist, two full-time archivists, set up this facility, there was a whole. They would never have...

Nick: I can give a version of this that's a little bit of a context, and again should this be in the public archive.

George: You can edit pieces out.

Nick: I understand. In a couple of phases after my father began to be ill. It was sort of like the time that Alice described of us coming back when my mother was quite ill, to sort of be there but also doing things, and one of the things that my father did in his many collections of many things is he collected car tires. He wanted to make sure to have a lot of spares.

Linda: Car tires, all right.

Alice: Oh, yes.

Nick: And one of the places in which he had stored lots and lots of car tires was, in the house, the house doesn't have a basement, it had a crawl space, it was a crawl

space, and so one phase of things for me personally was I was going down and spending time there, and to keep his second wife, Elizabeth, and add some sanity, and my father agreed that it was O.K. to get rid of car tires, I was pulling car tires out of the basement. And one of the things that surfaced in the basement were all these boxes of papers, and I actually can't remember the particular intervening set of dots. And it may have been I was emailing back and forth with Alice or something about this, but somehow or other, and maybe it was because you had come and talked with Elizabeth, but somehow or other [I] discovered that George was either coming to or was here at the Institute as the Director's fellow at the time, and just thinking what do we do with all these papers.

Linda: It was the same time?

Nick: You could just leave it in the basement, but it was clearly. You know, we were trying to clean stuff up. And George said, something happened, we got in touch with you and you came over with your little wagon or whatever it was...

George: Volvo.

Nick: Your Volvo, that's right, and you took a look and said I'll go through this.

George: And that happened two weeks before I was leaving, so right when, middle school graduation, all kinds of things, night and day.

Nick: That's right, I remember that, graduation. And he took away leather briefcases that were falling apart...

Alice: Moldy stuff.

Nick: cardboard boxes that had roots of vines that had snuck into the basement, you just took it all away. And it was so good because it was a way of deciding and learning.

Alice: That was off the back of, just cranking back a little bit in time, because before that was the emptying of the garage and the finding of those blueprints.

Nick: Right, although I knew those were there.

Alice: You knew those were there?

Nick: And those were the ones that went to the Smithsonian.

Alice: Yes, they went to the Smithsonian.

Linda: What were the blueprints of? The computer?

George: The computer. Probably a full set.

Alice: The computer. Part of the point in this is that the house in Princeton was very, very full of stuff. When Nick says that our dad collected tires, this is like the understatement of the decade. There were hundreds and hundreds and hundreds of tires.

Nick: 370 some total by the time we were done.

Marc: A lot of people that have a father that grew up during the Depression in this country have the same stories – mayonnaise jars full of washers and screws and nuts. Dad had that.

Alice: But the point being that there was a point at which the realization came that not all of it was just old crap, and that somewhere in amongst the old crap was some pearls, and therefore one had to find a way of distinguishing between...

George: When I got those boxes over to the apartment it was just unbelievable, I opened them up and it was just really, really important stuff that had the answers to all these questions.

Marc: I remember Nick telling me that George is going through all this stuff, this guy's taking the time to go through all this stuff, and I was impressed.

Nick: And just to add a thought to that record, I don't know if it's really true but I believe it, is that Elizabeth Merkelson, his second wife, her thinking had a very positive aspect to what was going on as well. You know, when two people are married for a huge period of time and have kids together and things, there's all kinds of context to the relationship, so without unpacking it, just looking back on my father's relationship with my mother and how I remember the piece that I was sentient for, that component of Dad's life and its significance didn't live large in just the family view, the way my mother described my father and talked about it. There were just so many other things about everything. Elizabeth didn't have that, she came much later on the scene when he was quite old and she had been through a whole life, had kids, and she was convinced that there was importance to many of these things as well. And she encouraged that behavior. I think in the cleaning out she was very supportive as well and deserved credit.

Alice: Yes, she was, but she also...

Nick: She wanted it out. [laughs]

Alice: Just a very interesting, different dynamic and I think

Nick: Because Flo Conway and whatever had come and did the interviews [she kept it all.]

Alice: There was a lot of things that started loosening stuff up, because the other thing was that Elizabeth also felt able to say let's start going through this stuff, whereas somehow, you know when we were kids, until the Mercer Road house burnt down, whenever that was...

Linda: '80-something.

Alice: ...every time we moved when we were kids, you would, we all, I mean I can pack...

Marc: She can. She can.

Alice: ...like nobody's business because if you move, and we didn't ever have movers, oh no, no, no, no, we always moved ourselves.

Nick: Often with the Institute pickup. [laughter]

Alice: Often with the Institute pickup. One of the memories of the Institute is the Institute pickup truck, which you borrowed every year to move. Now moving constituted packing up everything, but it was also a process of triage. So there would be the stuff that would go to the new house, and there would be the stuff that would go to the basement of Mercer Road.

Linda: So Mercer Road was really an important part, you had all these other places, but Mercer Road was always there.

Alice: It was where you put... It was full of stuff.

Marc: It was full of stuff.

Nick: Marc and I were taken there every couple weekends to mow the lawn.

Marc: Oh God, it was miserable too.

Alice: And it was full of all this stuff. There were all kinds of overtones going on with this. My father's tendency to hoard was restricted by the fact that you moved every year. Our mother was angry, she did not want to move every year. It was a source of some conflicts between them and sometimes that conflict flared up and was more visible than others. The amount of stuff that was lugged around from place to place and/or was stuck in the Mercer Road house also was a source of some conflict. You know I have very early memories of, for instance, my mother putting a coffee table over a car engine that was disassembled in the living room and putting a tablecloth over the top to hide it because she'd have asked my father 57 times to move it, and somebody was coming to dinner or to have a drink or whatever, and so your solution was that you covered it with a table and tablecloth.

Linda: Very enterprising.

Alice: It was enterprising and it didn't make her happy. It was not happy-making and it didn't make him happy. It was not happy-making between them. So this kind of push/pull went on for certainly as long as I can remember. One of the things that happened when our mother got very ill was that, in a sense, she was no longer putting the coffee table and moving the car engine or the piece of airplane or whatever it was, so he ran riot and there was a period of time between when our mother was still alive but not very well and before Elizabeth moved in, when every time you would go to the house--you know I would come back from England for ten days--and there was nowhere to sit, because every single surface was covered with things.

Marc: Well, they moved his office into his house.

Alice: Yes, in brown paper bags. So just everything starts to go out of hand, and out of kilter.

Linda: Do you think he had, in modern times we send our kids off to school and if they're not sitting focused on their books they're ADD. Do you think your father might have had something like that?

Nick: I'll volunteer an answer, but it's obviously a loaded answer. He might have been diagnosed that way now. That says something about my opinion of those diagnoses. By the way, just to finish a similar thought, so George went through all these papers, and he came back and said several things. The ones that particularly stand out for me is that he put into blue boxes, blue plastic tubs, Walmart, Kmart things, a bunch of stuff and said this is all interesting. And then he put into some cardboard boxes that had "A" on them, letter A, and he said these are really interesting and important papers. And I believe you said something that stuck with me, and you said these are valuable, you could probably sell them on E-bay or something, and you could make money off them.

George: Like millions, I mean a serious amount of money.

[Alice laughs]

Nick: And time goes by, the blue boxes went into storage at the house, and at the time I took George seriously and stored the other boxes carefully, so carefully that when we moved the blue boxes I forgot about them, and to get them into the Institute's hands.

George: There were really actually three categories.

Alice: And then there's the rubbish.

George: Then there's stuff that is valuable, like a maintenance manual for the ENIAC that is extremely marketable but it exists in other places, and then the A stuff was stuff that, as far as I know, exists no where else.

Nick: That's right, you had A, B and I think, an unmarked or C, category.

Linda: So you [George] took the material from them, sorted it, and then gave it back to them.

George: I hired, actually Linda Geraci's son and fiancée were here and they photocopied, so all the "A" stuff got photocopied.

Alice: At that stage.

George: Something like 9000 pages or something.

Alice: A lot of photocopying.

George: ...and then I took those back with me.

Nick: ...and then we sold the house recently, and I don't think we actually sat down and talked about what the potential value of any of it was.

Alice: No.

Nick: But Alice was here and I was here and we said this should go to an archives somewhere and I think we checked with you at the time...

Alice: We asked George's opinion.

Nick: You had even before said it. And it was clear that things had really developed here. We just decided, we gave Marc a call and said "Is this O.K. with you?" and Marc said yes and we did it. Right?

Alice: And that was that, really. I don't think any of us stopped and gave any serious thought to how one could financially maximize. It would have been so colossally at odds with our father's attitude to any of this stuff that it was unthinkable. So the question was: what was the best home for it, and that was...

George: But you didn't do, and now this maybe should be off the record, but you didn't do what the Institute did with the Woods, which is sort of ransom.

Linda: You mean the Institute Woods?

George: Yes, which was threaten to put them on the market and then bring in the philanthropic to save the Woods and that's what many families do with the

papers, they threaten: these are going to go on E-bay unless a benefactor comes in.

Marc: Didn't I sign something that says if these are to be sold...

Nick: We signed something that says they can't be sold, they have to come back to us.

Alice: They cannot be sold.

Nick: But you're right, we didn't go down that road. Being at a university that has a whole wing, department, dedicated to such activities.

Alice: Again, my father would have hated it.

George: Right, he would have just said burn them or give them.

Alice: Burn them or give them. For God's sake, he gave away the Mercer Road house, which was his own big love, actually, that house and the potential for that house, which he spent many years not fulfilling but nonetheless...

Nick: He gave it to the Friends School.

Alice: He gave it to the Friends. And he was not a Quaker.

Linda: Oh, so that house is still there?

Alice: No, the house is gone. The house burned down, but there's a piece of land worth quite a few dollars.

Marc: He would never sell it for years, he got offers every week...

Alice: And he wasn't a Quaker, he wasn't religious, he did not believe. He gave it to the Quakers. Just bang like that. So it would have been just colossally inappropriate to have done anything else. So the question was, does it go to you [IAS], does it go to the Smithsonian, who does it go to? And that was the line of discussion rather than do we give it, sell it, wherever.

Linda: I've just got one last question about your father, talking about the archivist, Christine, last night said that she looked at the papers and she had a strong feeling for his personality, they reveal a portrait of the man. We've talked so much about his work, was he all work and no play?

Alice: No, he could play. He played.

Marc: He was a serious person most of the time, but when he loosened up he was the life of the party.

Linda: Tell me about some of those times.

Marc: He didn't allow himself to loosen up very much. We went to California, Nick was 8 and I was 10, or 9 and 7. We went for a walk and we found a cave and we had Raisinets and Goobers and we were pretending we were cavemen and Dad said what are we eating little round bird turds and I said "me no know, make me little round bird turds." And it was one of the first times I remember my father loosening up and being fun. When he loosened up he was fun. Sometimes with his family, we went to our aunt's, the only surviving one of his generation, for Thanksgiving every year and sometimes he would loosen up there, but most of the time he was a pretty serious person.

Alice: He had the ability to be quite silly.

Linda: Silly?

Alice: Silly. I think silly. And he didn't do it often, as Marc says, and I think that's because he was one of, many people I've known really, for whom life was about responsibility, I guess, maybe, and responsibility in the broadest possible sense, to your family, your children, but also to your work, to what you've embarked upon, to what you've started, to completing. All of those things were what drove him.

Marc: And the Depression in the background. He always thought there was going to be another economic depression.

Alice: But all of that was about doing what you have to do, doing what you're supposed to do, doing what you need to do, and that weighed heavily on him. But he did have a light side, it is a side that we saw sometimes when we were kids, it was a side that our mother would refer to sometimes. He would forget birthdays, he would forget anniversaries, and then he would do some really silly gesture. Like one, I think it was their anniversary, and we had gone to the supermarket and he wandered off to some other store, and he showed up and he had an ice cream cone, which he gave to Mummy and said "kumquat may I'll always love you," which was sort of the cheesiest little, you know. [laughter] I think it was their anniversary, and it was a really silly thing, and just occasionally he would be really silly, hugely entertaining, and again he didn't do but sometimes he would engage in social interaction, and would be funny and talkative and completely mesmerizing, everybody would stop and listen to him We would very regularly see it when he was with his large and argumentative family. He's the second youngest of five. We went to Thanksgiving at the farm that he grew up on when we were kids and there would be all of his siblings...

Linda: Is that in Vermont?

Alice: No, it's in Massachusetts, outside of Boston. And there would be our cousins and he was often the life and soul of the party on those occasions. He would really

have quite a huge influence on those debates, those arguments. They would stay up, my cousin Steve who was at MIT and is 10 years older than me, so is substantially older than all of us, and I remember them sitting around the dinner table, constructing things involving dinner plates and sticks and bits of pie, some sort of large elaborate. And he was very fond of his sister Barbara's husband, Ralph Ward, who was a lovely, lovely man, and who was an aeronautical engineer. And they would just have long and joyous ...

[side talk Marc and George]

Linda: I have a Heath Robinson image...

Alice: Very Heath Robinson, actually. Very Heath Robinson. Full of completely bizarre concepts. And they were having fun, that was fun.

Nick: They'd argue politics and science and math and all number of things.

Alice: Everything under the sun. Everything under the sun. That was a bit that would occasionally just come completely out and it was not something that was there loads. It was something that was there though.

Marc: Our cousin was here visiting last night, and she said what I remember about your father was him trying to teach me how to use a slide rule and she's a teacher but she's no good at math, she said I never learned and I was too polite to tell him that I just wasn't interested in learning. But my father would take like two hours and try to teach her.

Alice: How to use a slide rule. One of the things that was quite sad really was that our mother had a stroke when she was about 58, 59, like that, and died just before her 70th birthday. And you guys were 13 and 15, kind of like that?

Marc: When Mom had a stroke? I was 15.

Alice: O.K., 15 and 13.

Marc: '71, I think it was.

Alice: And the period between her stroke and when he married Elizabeth was shit actually, it was a really tough time. For a while our mother was functional but she ceased to be the person that she had been at the point when she had the stroke. It was just a very long slow decline. And he kept her at home, kept her out of institutions.

Nick: He kept her at work for the first several years. She was employed by the state of New Jersey, at the State Psychiatric Institute, and he fought to have her job kept. He drove her every morning. Took her to work.

Marc: Saved her pension.

Nick: But some interesting other things during that period. He returned to flying. He took up tennis.

Alice: Well he didn't just return to flying, he rebuilt the damned airplane in his 70s at Princeton airport.

Nick: But even back to '71 was when he was...

Marc: That was a terrible time for my mother. She was an independent woman, she ran her own life, and it was just devastating for her.

Alice: And it really, that point was the end of something. And you know Dad said to me, he said I didn't imagine this. This was not what I planned. I thought we could travel, I thought we could do stuff.

Nick: Well, he and Elizabeth did.

Alice: He and Elizabeth did. But there was a terribly sad time for him.

Linda: And it was a long period too.

Alice: And he was under a lot of pressure. It was quite stressful. It was emotionally quite grueling. And I think that, for me there are several eras of how things went with my Dad. There was when I was very small, before he started traveling a lot for work but was still working quite hard. But I remember riding on his shoulders, he was very good at riding you on his shoulders, riding small kids on his shoulders. He liked little kids, he liked being a father. And then I remember a period, and these all kind of blur a bit, but I remember a period in which he did a lot of traveling, in which our mother by streets was the prime carer although she was working too. So we would go on vacation and he would maybe join us for less than a week of a two-week stint. And then there was the period in which he was looking after her and there was a kind of grimness during that period, I think particularly in this latter half of it, by which time both of you guys were gone. That's two halves.

Nick: I would say, there were four or five years after Mummy had a stroke, actually more than that, that I was the one living at home. Marc was in the process of moving on...

Alice: Phasing out.

Nick: And you were off at school.

Marc: I went to Vermont in '76, came back, went to Vermont in '77.

Nick: But even then you moved out, you weren't based.

Alice: It was really hard. And then there was Elizabeth.

Nick: Sunshine.

Alice: And it wasn't just about having found a new relationship at the age of 72, which obviously is not something that most of us

Linda: No, it's amazing.

Alice: Absolutely. But also rejuvenation. It was seeing your rather straight-faced dad saying, "oh, I've met somebody and she makes me feel like I'm 17."

Linda: Oh my goodness, how wonderful.

Alice: Absolutely. Just with this grin, this shit-eating grin, from ear to ear, and suddenly thinking, "Oh, how nice."

Marc: But I remember you saying at the time of Mom's funeral, "We've got to clean up his house. Nobody's ever going to come visit him if we don't clean up this house."
[laughter]

Alice: Although they did.

Marc: And six months later he's already with Elizabeth.

Alice: Marc, they were there after the funeral.

Marc: I know.

Alice: It was surprising because, you know, I always saw this slightly dour, I think he was slightly dour, and even with Elizabeth he retained the dourness, but after my mother's funeral all these women come with casseroles. People who've been the wives of neighbors who are now single, and me thinking, "Shit."

Linda: It won't be long.

Alice: "They're after him," and thinking why, what is it? Why, why?

Linda: I think he had these blue eyes, didn't he?

Alice: No, he had hazel eyes, actually.

Linda: There you go.

Marc: I remember him coming to Vermont. At the time I had a trailer, not very big place, with two-inch walls and stuff. He brought Elizabeth up. He never wanted my approval of anything he did, he was above that, but without asking he wanted our approval. Of course, she was a wonderful woman and we all loved her, but it made me realize, at 18 or 70s, young love 'cause they were looking at each other and all they could see was each other. I said, "Man, he's having..."

Alice: A new lightness.

Marc: He was in love again.

Alice: And there was a new lightness of being that dominated things and that I did not remember seeing in him since I had been a child. So one of the things that you have to bear in mind I suppose when we talk about him being not a joyous person was that an awful lot of one's most vivid memory of that is at a time when life was not particularly joyous. There was the kind of, the time when he was not feeling welcome at the Institute and was doing a lot of traveling, and was trying to juggle all of his life together and make it work, and then there was a long period of time when he had an invalid wife, and didn't ask for help from other people because that's not what you do.

Marc: I guess that was the end of his tenure at IAS, but he told me that he took out time from his job. You know, tenure you're free to research on anything, there are no constraints, but my mother had a stroke and she had worked for the state of New Jersey. She had a gold watch, for 20 or 25 years, but they were going to lose her pension if they were one year short of getting her pension, and he went and took her to work.

Alice: He drove her to work.

Marc: He helped her do her work, did the typing for her and stuff to save her pension.

Alice: Because, hey, he was such a great typist.

Marc: She lived another 14 years, I believe.

Linda: I just have a couple things that are not related to this, they're things I forgot to ask you earlier on, so I'm just going to jump in with these now, I'm sorry to make such an abrupt change. But three unrelated things. Did you ever as children climb up to the tower on Fuld Hall?

Alice: Uh, uh.

Linda: You weren't naughty children? I'm not going to ask you [to George].

George: No, I did not. I never did.

Nick: I wanted to.

Linda: You wanted to but you never did. I'm determined to find somebody, some naughty child that did that.

Alice: You're still looking for the child that did it. I have no one on offer for that.

Marc: There were more people upstairs than there were downstairs in the lobby. We did hang out in the lobby if we wanted to. Go wandering.

Nick: That was an interesting, unexpected question. So what's the next question?

Linda: Summer holidays? Where did you go on your summer holidays?

Alice: Cape Cod.

Linda: With your father?

Alice: Well, some of the time.

Nick: Well, probably the answer was he would be there for part of the time, but not necessarily all of the time.

Linda: And my other question was about the machine, the IAS machine which is on display at the Smithsonian, which is not on display, that's the point, at the Smithsonian. Why is that, do you have any idea?

George: Why is it not on display?

Alice: Why is it not on display?

George: Just they cycle their displays.

Alice: It used to be on display. I saw it.

Linda: You did see it.

George: And when it was on display it was not given the proper historical context.

Nick: It was actually sort of this in-between-two-rooms with a weird label on it. It was actually labeled EDVAC or something, wasn't it?

George: Yes, it was mislabeled. And where it should go, I saw, well, Robbert²⁵ was talking about it last night at dinner, you could see his eyes really light up. But

²⁵ Robbert Dijkgraaf (1960-), Member in the School of Natural Sciences, 1991-1992; Visitor, 2002; IAS Director and Leon Levy Professor, 2012- .

there's no reason, I mean I think the thing to do is to put it back in the ECP building and make that a public...

Alice: A museum, that would be great.

Nick: That would be great.

George: And they can, you know they'd love a new fitness center and it wouldn't bring the general public into Fuld Hall.

Alice: Tainting it.

Nick: Is that space a fitness center now?

George: Yes. You know the interesting thing is how many million times more computational power is in the elliptical trainer than...

Nick: That's exactly right.

Alice: And the nursery school, is Crossroads there?

George: The nursery school is still there.

Nick: But it was funny to go to the Smithsonian and see the machine and see my father's handwriting and stuff.

Alice: Yes, bits of masking tape, with all of these cobbled switches and knobs that clearly, everything came from something else, and then a sign with an arrow or an "On"

Marc: His chicken scratch.

Alice: Yes, in his handwriting.

Nick: We did talk about this last night and it's kind of the obvious thing, maybe you know. You've got whatever records or documents that were associated with that computer ending up there might have a provision for it to come back here.

Linda: You never know. Something to look into.

George: There's this fantastic computer museum in Palo Alto, that has, again has this missing hole, they have nothing for the IAS machine. In fact Marina [von Neumann Whitman] is going to be giving a talk there in April, but the Smithsonian does this all the time. They send, loan out their things.

Linda: Right, I have a question, what did your father call the machine? Do you know what he, how did he refer to it?

Marc: He called it the right, ENIAC, or whatever the correct thing is. What is it?

George: The MANIAC

Marc: MANIAC.

Alice: I think he called it the computer.

Nick: I think he called it the computer. We were building the computer

Linda: The computer. Because we call it the IAS machine but I wondered what the people who were working on it, working on the ground called it.

George: In the notes they called it MANIAC or the computer.

Linda: What did you think of the Director's remarks last night, and I'll remind you. He said that your father's career captured the essence of the 20th century, but he also intimated that the impact of your father's work has not been fully recognized, and he also promised to keep that history alive and make its impact known and he went on to say that history might view the Electronic Computer Project as the major impact of the Institute. And I wondered what you thought about those remarks?

Marc: Hallelujah.

Linda: O.K. Nick?

Nick: I have several thoughts about it, one of which is that Robbert's choice of words were very thoughtful and very much appreciated, so that's a personal response. I think he put it in a wonderful way. I'm heavily biased, obviously, because my father was chief engineer on the project. I do think that when you look at the impact of the Institute, and because of my own kind of field I know enough about some of the other people here, I don't know if I would myself say it would be the most significant thing. On the other hand the simple point that for a variety of reasons that architecture of the computer, the problems that were being run on it when it was running, are phenomenally impactful and reading some things now I understand that in some sense some of the people then on that project might be disappointed to see that all we've ever done with it is make it bigger, faster, and more powerful, but we're really using central processors, storage, programming, we're just...

Linda: von Neumann architecture.

Nick: ...that architecture to the point where it's incredibly powerful rather than, by and large, doing something radically different. But the fact that I carry one in my pocket, I probably have three of them here with me, that's a phenomenally

important thing, and the fact that they were working on weather and neural networks and problems that are still at the forefront of computational problems, says something about just how important the work was at the time. So from that point of view I do think he's right. How history will remember it I don't know, that's a tougher one.

Linda: What would you like to say?

Alice: I guess, Nick is the only one of us, I think, who's in a position to comment on the broader perspective of the impact of the Institute...

Marc: I'd like to say something.

Alice: But in terms of Robbert's other remarks. Robert is a very gracious and graceful person and there has clearly been, since the point in time, I think probably not since our gift of the papers but since George started doing the work that you were doing here, so a trajectory that dates back to then, there has been an effort made to try to and unpick some of what has been perceived as injustice done by the Institute that elicits very complicated feelings. On the one hand, jolly good, well done, it's a good thing to have those things said, and in some ways, having the conversation with Freeman is, which actually is a conversation that was started at our father's memorial, where Freeman wanted to get up and make a statement that the memorial was here, at the Institute and Freeman made a very strong statement about the way in which our father's relationship with the Institute had been and what he felt about it and effectively made a quite public apology, on the part of the Institute. Well actually he made the point that he wasn't apologizing on behalf of the Institute but that maybe the Institute ought to be apologizing on behalf of itself. And that was very moving at the time and a very good balm. But, of course, all of it is countered against the fact that it was after he was dead but that it would have been far more meaningful had some of those statements, not particularly by Freeman because he felt that Freeman was his friend, but sort of more official statements had been made by the Institute while he was alive and last night was a lovely event. There's a really strange thing about feeling like you're involved in some sort of expunging of guilt, that is odd because, it's, aside from Freeman who I think feels that guilt inappropriately heavily, actually, we're all secondhand players, you know, we weren't the primaries in this, we're the descendants of this, and so it's symbolically nice but doesn't, it's kind of not where ...

George: Robbert's remarks were absolutely wonderful, perfect, and well thought out, but they should have been made by Robert Oppenheimer.

Alice: That's the one. The wrong Robert. Robbert is a charming and articulate man.

Marc: Robbert said some nice stuff but I really connected with what George said. I'm not an academic, but I always understood that those people like von Neumann could draw it on a blackboard, the equation, but it took Julian Bigelow as the

missing link to bring it into reality, a mechanically gifted person. And my mother always said he gave the credit away, he gave it to those guys but they could draw it on a blackboard, but they had no idea how to actually build the thing. And I really like what George said, taking it from the abstract to reality, because that's what we all understand that he did. The missing link, it's important. And thank you, George, again.

Alice: But institutions are very funny things, you know institutions are just that. One of the things that Robbert was saying to me last night at some different point is that actually it's all about people and you can't, whatever institutions do or don't do you, can't disentangle it from the interactions between a certain set of people, so whatever the Institute does now, it can't fix what it failed to do 40 or 50 years ago. Similarly Freeman should not feel responsible because he probably could not have fixed what the Institute, it was an institution, it was a set of people, but it was also an institution, he doesn't need to feel, to take the burden of this on himself. For heaven's sake he was the one that, as a person, as a human being, our father related to and maybe what one would hope is that institutions would learn to behave better, but I have little hope that actually that will be. But you know that would be the global lesson that one would like, is that institutions would learn to behave better.

Nick: I'm not sure. I'm far more Pollyanna-esque.

Linda: But presumably you didn't think that you would ever see such an exhibition as is over in Fuld Hall. What do you think he [Julian Bigelow] would have responded to that?

Nick: Oh, he would have been embarrassed.

Alice: He would have been *really* embarrassed. He would have been really embarrassed.

Marc: But secretly very happy.

Alice: I think that's right. I think he would have been embarrassed. He would have been embarrassed by the exhibition, by all of last night, he would have wanted to have gone and hid somewhere.

Linda: Your mother would have loved it.

Alice: Yes, she would have loved it. But he would have been gratified as well.

Nick: To sort of add a piece to that, a much more practical one. I said this last night, but one of the sort of sayings that came to mind was that you can't change the past, and you actually can't change the future, you plan for it, but the only thing you can do is act on the present. So the event, seeing something happen now, in

the present I think is a good thing. I think it's wonderful. I hope maybe by things like: George has written a book that's not going to be going away...

George: People will be going through those papers.

Nick: The papers are now here and visible. This part of history is sort of out of the box and out there and you can't put it back in the box. I hope the Institute chooses, the people at the Institute choose, to continue to put this piece of its history right up front with its foremost accomplishments. That was part of the promise of Robbert's words but what will happen will be dependent on people simply doing it. You know, will two years from now the pictures and exhibits be gone and replaced with pictures of string theory or that represent some other thing? Or will some of this simply now be part of the face of the Institute. I hope so.

Linda: Are any of you, I mean I love the story of your father as a three-year-old taking a screwdriver and taking all the doorknobs off, I think that's so funny. I wondered, there must be other family stories that have been told and retold, and you might share some of those. But my question was to you are any of you thinking of a full blown biography of your father? George?

George: Probably not.

Linda: His gifts, his war work, his contributions to computing, is that something any one of you would take on or envision?

Nick: If you're asking me to speak personally, right now, no. Would that never occur to me, it hasn't occurred to me.

Linda: It hasn't?

Nick: No. Would it ever occur to me, I can't say that's out of the question.

George: Biographies are always better done by somebody outside. The material is there.

Nick: Knowing there's going to be a person like George.

Linda: He's the unsung hero of computing.

Nick: Or somebody in some more formal academic world who realizes that there's a fascinating and interesting project to do and has the ability to dedicate a piece of their life to it.

Alice: The things that made good stories are people who are quirky and odd and a nut job.

Nick: This was what, a decade of your life?

George: Yes, [I] achieved what I would have liked to achieve, but there will be followers. I know, I actually just heard through the sort of literary gossip that there's this guy, I can't say his name, Evgeny Morozov, he's Belarusian and he writes for the Wall Street Journal, he's kind of an angry guy, but he's very successful. Anyway, he just got a huge book contract from my publisher based I think partly on *Turing's Cathedral*, but he's going to, and I'm sure you'll be hearing from him, because he's going to do a book, my understanding is, about the origins of cybernetics and his agenda, which you see coming, he thinks these modern companies like Google and Amazon are completely perverting the original intent.

Alice: Watch this space. That's really interesting.

Linda: Interesting. So now that you're each in a position to look back on growing up here and your father's legacy, what would you like to say that I haven't already captured from you?

Nick: What's in the box? [laughter] From my point of view--kind of a separate thing--I think growing up in Princeton had many wonderful aspects. Growing up in what was then a small town, it's not huge, but with a university that you could just access and prowl through, so to speak, as a child growing up here, was transformative, it made so many impacts in ways I didn't even appreciate. It affected my tastes, my perspective and I think there's another part of all of this, knowing people who are significant, and in this case it's easy to abstract away one level or maybe easiest to abstract. Like Freeman Dyson, as an example, people who people know, and recognizing that this is a person, and when you grow up in an environment where you interact with people like that, they are the people you're interacting with before they're some figure of importance. And there's a humanizing characteristic of that when you grow up as part of what happens in your life. I think for me that's been extremely invaluable.

Linda: You mean it doesn't put limits on what you feel you can achieve?

Nick: But also, this is a person. If you meet and know someone who wins a Nobel Prize, as an example, you discover that this is actually just a person.

Alice: Just folks.

Nick: And maybe that person has abilities and understandings, in mathematics or in an area, that are exceptional and make that person exceptional, but in addition, these are people. Growing up in Princeton, you don't appreciate that when you're little. It's like the funny thing of remembering as a kid seeing Nash.

Linda: John Nash.²⁶

²⁶ John Forbes Nash, Jr. (1928-2015), Member in the School of Mathematics, 1956-1957, 1961-1964.

Nick: Just not thinking twice about it. Growing up when I was a tiny little kid, Marc and I were at a terribly immature small age, hearing my parents talk about something or other with Wiener and going "Hee, hee, hee, hee."

Linda: You were laughing because of his name.

Nick: ...and the going back at some point with my father at MIT and just realizing that these people were actually, you know...

Alice: Seriously significant

Nick: I can remember going to a picnic with my father in Massachusetts and playing volleyball and the people that were playing volleyball included some nontrivial people in cybernetics like Warren McCulloch and people like this, discovering these people that were cooking frankfurters and we were playing with were significant people. And it was just part of the landscape.

Alice: I think there's another thing, which is possibly part of the Princeton ambience, possibly about the funny way Princeton sits on the racial, class, cultural divide, partly Princeton's internationalism, because growing up in a community where virtually everybody's parents had a different accent, and where that was the normal, but also that our father was, you know Nick's story about being told to call John "Mr. Thomas," and I remember the respect with which Dad treated Miss Dukas, who was Einstein's housekeeper, a respect due to her age, and it's the same thing with the black guys who drove the car pool, that somehow none of these things made you better, whether you were Einstein or whether you were the guy who drove the motor pool, none of these things made you better.

Marc: Dad would say "Hi" to all of them.

Alice: Dad would say "Hi" and would be hugely respectful to all of them and I remember realizing later who those people were, but they were just people. I didn't know the difference between the people who were breaking ground in science and the people who were their secretaries. Bernetta Miller and her partner...

Nick: Betty.

Alice: Betty Favel. Bernetta Miller was one of the first women pilots

George: Absolutely, so why was she fired?

Alice: I have no idea why she was fired.

George: Because the letters are really, really awful. She's fired and they tell her to clean out her apartment at Cook Road and she writes back saying that she had a contract and she had years and Oppenheimer says no, you have until February.

Linda: Was she a Member here?

Alice: She was a secretary.

Nick: She was staff.

George: She was an administrator. But then she was Aydelotte's [assistant] and then when Oppenheimer came he...

Nick: So I'll ask a question that's completely and maybe should be edited out. Could it be that they discovered she was gay and found that unacceptable?

George: I don't know, I really don't know, but she was just booted out.

Alice: And she was in a long-standing relationship with another woman.

Nick: That's it with the airplane, exactly. My father had a copy of that...

Alice: And she was friends with Dad and these two weird old ladies.

Nick: We'd go and have tea with them in New Hope.

Alice: And even more, when I was about 12, 13 I got sent to stay the weekend with them, in retrospect clearly lesbian old ladies, and there I would be sent, 12 year old girl go and stay with them.

Marc: They lived in New Hope. I remember going there. They were nice old ladies.

Alice: And I don't know why she was sacked from the Institute.

Nick: She was something like the third female pilot in the country.

Linda: And her name was Bernetta Miller?

Alice: Bernetta Miller was an extraordinary woman. And one of the things as a kid was meeting and spending time with the people, who, as Nick said, they were just people, but later you think, wow, they were extraordinary.

George: She started Crossroads.

Linda: She started Crossroads? Bernetta Miller. What about Hetty Goldman – did you have any interaction with her?

Alice: Not much.

Linda: But you knew who she was, right?

Nick: I don't have strong memory.

Alice: Not a strong memory.

Marc: You were telling me earlier how Atle Selberg and Hedi Selberg--Hedi worked actually on the computer project.

Alice: Atle...

Marc: Atle was one in opposition, like the theorists. We don't need mechanics or engineers.

George: He basically thought it [the computer project] should be somewhere else and that it was a mistake to give him [Julian Bigelow] a permanent membership because it kept him from fulfilling his potential as an industrialist, sort of how he put it.

Alice: Yes.

Linda: Do you ever think that he, and I'm playing devil's advocate here, but do you think that he may have had a point, that perhaps in becoming a Permanent Member it did stop him?

Nick: Possibly, hard to know.

Alice: Who's to know? What I think was clearly inappropriate was the ongoing snobbery, which is sort of how our dad felt like a second class citizen at the Institute.

Linda: How did it manifest itself?

George: Well, people wouldn't talk to him and they'd ignore him when he came in the room.

Linda: So it really did manifest itself.

Alice: We talked about the times you would go in and have tea.

Nick: You don't know this but you can pick up on it.

Alice: It's a vibe.

Marc: The same way he didn't hang out with him. I mean he decided, I can't get through to these people.

Nick: This place is different than many universities, for example. In many universities once somebody is given tenure, O.K, if you become inactive or problematic

people respond to that, but people don't typically revisit. Once it's done it's done. And you may have just squeaked through or you may have been one of the strongest cases but by and large once you're given that kind of position ...

Linda: Why do you think he wasn't just left to do, he was a Permanent Member...

Alice: He was an eccentric, he didn't fit, I mean there were lots of ways he didn't fit with Princeton, and this is something he said a lot.

George: But there are lots of other eccentrics here.

Alice: He was an eccentric

George: But to me the most unfair thing was that when von Neumann died IBM gave the Institute \$100,000, which was a lot of money at that time, the entire budget of the School of Math was no bigger than that, with a letter to Oppenheimer, this money's to be used for whatever you want, and that money should have gone into this kind of work, at least to give him a raise or whatever, for him to bring in a visitor but that money just disappeared into the mathematicians, who actually pushed Julian out and I think that was just very unfair.

Linda: So we're not just talking about a sort of *ad hominem* viewpoint against Julian Bigelow. But if what you say is correct, clearly it was against computing as a subject here.

George: As a science here. It was not seen as a science.

Nick: He was an expression of that.

Alice: It was a bit down and dirty. It was not done with chalkboard and chalk, it was done with soldering irons.

George: This was true, there were all these fights. The Institute, they couldn't get Gödel's salary from the mathematicians. That came from a special Rockefeller grant. But anyway I was saying it would have removed a lot of the resentment if, when they money came from IBM, Oppenheimer had said this money will pay Julian's salary, he's no longer a parasite on the math or physics school. His salary's paid by IBM and I think that would have been a real step in the right direction, at no cost to anybody. The IBM money wasn't asked for, it was sort of a thanks for giving us John von Neumann. Really it was thanks for giving us Julian Bigelow.

Linda: And not only would it have continued Julian's studies, it would really have enhanced the future of computing here.

George: It really would have been a gesture that things could have worked out.

Alice: It would have made his status more comfortable. I think there was a lot of stuff about status. I think that our father was not somebody who ever felt that it was appropriate to push for your place. He felt much more diffident about recognition, about 'if you had to ask it then wasn't worth having.' It needed to be granted freely as it were. But in word, in gesture, there was an outsider relationship that I think he communicated to us, that he felt in relationship to the Institute. A little bit like the in-crowd and the out-crowd at school. How do you know? Well you just know. How do you know which kids are the in-crowd kids? You just know. And he just wasn't one of the in-crowd kids and, I think, felt that for his entire time at the Institute.

Linda: I've come to the end of my list of questions, except to ask you if there's anything I haven't asked you that I should have done?

Nick: Well, I think this is a subject we could take you through dinner time, we could take you into the evening. I hope it's been helpful.

Linda: Thank you very much for participating and getting all here together.

Marc: In George's book, there's a chapter called "Rats in the Cathedral." We automatically knew what he was talking about. [laughter]

Alice: You didn't have to read the book to work out which chapter you should start with.

George: A lot of people didn't get that.

Alice: Yes, well. But there is that. You're a little bit too grubby, you just don't fit, your face doesn't fit. And most of us have experienced that at some point in our lives in some context as not having quite the right fit. And I think Dad felt that all the time at the Institute. And, you know, you're right, maybe he wasn't the only eccentric, but I do also think he was an eccentric who cloaked himself in a particular form of eccentricity that exacerbated the not fit-ness.

Nick: He was also an eccentric working on the wrong problem.

Alice: Absolutely.

Nick: Whereas Gödel's eccentricity at least his mathematics fit in to what was acceptable.

Alice: So it was kind of the wrong face *and* the wrong shoes.

Nick: That's it.

Alice: But, yes, he was our dad, we could talk endlessly, as one could talk about the Institute, one can talk about the people, one can look at that picture of the nursery school Halloween party

Marc: One of the last times I talked to him about airplane engines, he was very withdrawn, near the end of his life, he said one word sentences, but he still gave me the right answers in yes or no questions so I knew he was still in there.

Linda: So who stands out in your memory, apart from your father, if you look back on the Institute, is there anyone who stands out particularly? Apart from George, of course.

Alice: Well, George's family. George is significant as a member of his family.

Marc: Never said Freeman Dyson without a smile on his face, never said the name. He considered Freeman to be a friend.

Alice: So for me, the Dysons, the Selbergs. The Selbergs, because for me the Selbergs kind of crystallized a lot of my father's uncomfortableness because I was very good friends with Ingrid Selberg, and Marc and Nick were friends with Lars. And Hedi, who was an extraordinarily lovely woman...

Nick: Was nice to all of us.

Alice: Was nice to all of us and she was one of the people who when my mother was in very bad shape indeed, she kept visiting, when lots of people stopped visiting. And that was quite significant to Dad. Atle and Dad clearly never saw eye to eye and as you become older you become more aware of the subtleties of those relationships. So that family had quite a significance. Dad was inordinately fond of Ingrid, and called her "Ingredient."

Linda: There's his silliness.

Alice: Absolutely, there's his silliness. And was very, very fond of her. She lived in London so he saw her relatively late in his life.

Marc: My mother was friends with the Whitneys and we played with them quite a bit when we were kids.

Alice: I think the Estrins were very important, although they were only in Princeton for a relatively short time.

Marc: What field was Hassler Whitney in?

George: Mathematician.

Nick: He was a mathematician.

Alice: The Estrins were very good friends to both our parents.

George: They were engineers.

Nick: They were all in that circle.

Alice: They were in that group and were lovely people and continued to visit them in Princeton until they stopped traveling. The Charneys, for me, very, very strongly. Possibly because Jule Charney was one of the most charming, and you know he was my dad's age, but even so I remember as an adolescent girl thinking, wow [laughs], I mean he was, he was wow, and larger than life, and just warm, he was really warm and talkative and very, very charming. And again one is now going through the people whose daughters I was friends with, so those are all kind of relationships.

Nick: Funnily enough they were all the people our parents were friendly with, that were in that circle.

Alice: Yes, there was a little cluster of people. Bernetta Miller, very, very dominant person. Miss Dukas and Miss Einstein.

Linda: Margot, you mean Margot Einstein?

Alice: I assume that's her first name, but I have no idea. To me she was Miss Einstein. Both of whom came to my first wedding. Her and Miss Dukas. And when I came back from England, see I went to England when I was 17 and I would come back and my father started this funny little ritual really that he had never done before and I guess it must have been after Nick left home. I would come back and he would take me visiting, which was never something that he had done as a kid, but we would go round and we would call on Freeman, we would call on Miss Dukas and Miss Einstein, there would be this sort of ritual of going around visiting people, which again at the time was simply, "I'm back in Princeton, Dad says let's go and do this." There would never be an awful lot of explanation, you would just find yourself calling, in a very Victorian [way], he had a real Victorian manner sometimes. So all of that involved his priority people, I suppose, the people that he thought were important. And the absolutely lovely Elizabeth Anderson, who had been married to Jim Anderson who worked on the motor pool here, and she took care of Mummy and was...

Marc: At Mom's funeral.

Alice: She was a delightful woman, a really delightful woman. And we still have a small piece, a small reminder of her in Egg Harbor, New Jersey. [laughs]

Linda: Too cryptic.

Alice: Dad bought a piece of land from her.

Nick: She was in financial troubles and she had this little piece of land.

Alice: So he bought it from her.

Nick: So rather than giving her the money he paid her an exceptionally large amount of money for the land. So we still own it. It's just a little dirt patch in, where is it?

Linda: Oh, it's in Egg Harbor.

Alice: Egg Harbor.

Nick: Egg Harbor, New Jersey, down south.

Alice: ...in the Pine Barrens and it was one of those places that when sold in parcels...

Marc: Is it still in the family?

Alice: Yes, our family, we own it.

Marc: I might have heard of it before, but I don't remember.

Nick: I think the assessment's at \$600 by now. Anyway.

Alice: And those relationships that were significant ... Helena Pierre who babysat for all of us, also our father was extraordinarily supportive and good to [her]. So those kinds of relationships of people who work for you, I guess, and again it's about loyalty, I think, really strong values of stick-by-it-ness.

Linda: Well, it looks as if this is a new beginning with this archives. I think the story of how it's all come together is really quite remarkable.

George: Yes, hopefully there won't be a, there were oral histories done in the 1950s that Oppenheimer commissioned, brought in a woman like you, they interviewed everybody and they all disappeared.

Linda: I'll try to find out where they went...

Alice: Gosh.

George: Interviews with Flexner and Veblen, and von Neumann and you wonder what happened.

Nick: This could be something that Marc and Alice might not appreciate and I didn't until Christine [Di Bella] pointed it out to me last night, that given the newness of the archiving process here this collection of papers is the largest one in the archives.

Linda: It's really significant.

Nick: And it's really wonderful to be able to help that.

Alice: There were a lot of boxes. [laughter]

Linda: Well, unless there's anything else you would like to contribute.

Nick: He's going to look.

Alice: He's going to look in the box. Come on, George.

Linda: I'll put this off and thank you very much.
