

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

**Oral History Project
Interview Transcript**

**Akrevoe Emmanouilides
Interviewed by Linda Arntzenius
November 12, 2010**

**Permission to use this material for anything beyond personal research
must be requested from the Institute's Archives. Please contact
archives@ias.edu with questions.**

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

Oral History Project Release Form

In exchange for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I (the "Releasor") hereby irrevocably give, donate, assign, transfer and grant to the Institute for Advanced Study (the "Institute") all of my right, title and interest in and to all audio and/or video recordings of the oral history interviews in which I participated, together with all transcripts thereof (collectively, the "Materials"). My gift, donation, assignment, transfer and grant to the Institute includes: (i) title to the Materials, free and clear of all liens, encumbrances and interests of others; (ii) the right to all present and future copyrights, including but not limited to, the exclusive right to make, reproduce, publish (in print, on video and in all other formats) and to otherwise exploit the Materials, excerpts of the Materials and works derived from the Materials; and (iii) the right to use my name and likeness as required by the Institute in connection with its use of the Materials. For the avoidance of doubt, I hereby authorize the Institute to use the Materials (excerpts and derivative works) for any and all commercial, educational, research or other purposes.

Public access to the Materials is subject to the following conditions (please check one):

- None.
- Closed for 10 years from the date of the interview*; full public access thereafter.
- Closed under other conditions as stated below*; otherwise full public access:

*I understand that prior to the date of public access, access to the Materials may be given by the Institute to its staff and to others for the purposes of preserving and cataloguing the Materials.

I acknowledge and agree that this is the entire agreement between the Institute and me respecting the Materials and shall be binding upon my heirs, representatives and assigns. It may be modified only by a writing signed by all parties. This agreement shall be governed by the laws of the State of New Jersey and the federal and state courts situated in the State of New Jersey shall have exclusive jurisdictions over disputes between the Institute and me.

Witness:

L. G. Montgenius

Name of Witness: _____

Akrevoet Emmanouilides
Signature of Releasor

Name of Releasor: AKREVOET. EMMANOULIDES

Date: December 27, 2010

Linda Arntzenius: It is November 12, 2010, and I'm here at the Institute for Advanced Study to record an interview with Akrevoe Emmanouilides. Well, as I said, the focus is the Institute, but I would like to talk a little bit about how you came here, which means, where were you before you came to the Institute? I understand you grew up in Philadelphia?

A. Emmanouilides: Yes. I grew up in Philadelphia, the eldest child of Greek immigrants. My mother was from the area near Istanbul – the Greeks still call it Constantinople – and my father was from the Ionian island of Lefkas, which is on the western side of Greece, one of the seven Ionian Islands. My father came to the United States as a young, probably 18-year-old, so that he wouldn't have to serve in the Balkan wars. My mother came as a refugee in 1922, when Kemal Atatürk nationalized Turkey, they burned their town and they came as refugees. A brother had already come, and she and her three sisters and their mother came to the United States, to New York, and then, ultimately, ended up in Troy, New York, where they managed to establish themselves. My mother was quite a beautiful young girl, and my father saw her passing by in Schenectady, New York, and, at the time, marriages were arranged, and he had a cousin who knew who she was. They were married in 1927, and I was born in 1928.

He had a little restaurant in Philadelphia, and she moved there. My father was virtually uneducated. He could sign checks and they never bounced, but he was a dear, kind and a very – there's a wonderful Greek word, *kouvardas*, which means that you are generous to a fault, you are welcoming, and he certainly was that. I have two siblings, but I was the eldest, and I didn't speak English when I went to school, but that's not unusual in the immigrant family, we spoke only Greek at home. I still speak Greek fluently.

Linda Arntzenius: I was going to say, do your children speak Greek, also?

A. Emmanouilides: A couple of them have spent time in Greece – Martha spent six months in Greece, and six months in Dublin, which she loved very much.

Linda Arntzenius: Oh, wonderful.

A. Emmanouilides: But two of the others, Christopher and Sophia, each, spent a year in Greece. Chris worked at a *frondestirio*, which is a tutoring school up in Orhomenos, near Thebes, where he taught English to children. Sophia, the youngest of our children, went to Greece after college because she wanted to find her roots and learn Greek.

She went to the Athens Center, where she met George and Charlotte Draper, who were the incoming directors of the American Farm School –

Linda Arntzenius: Interesting.

A. Emmanouilides: – which is in Thessalonici.

Linda Arntzenius: What I'm taking from this is the adventuresomeness that *you* exhibited, you've passed on to your children, because you were just out of high school, is that right –

A. Emmanouilides: Yes.

Linda Arntzenius: – when you came to work here. Were your parents worried that you were going –

A. Emmanouilides: Well, I commuted for a year, from North Philadelphia to Princeton Junction.

Linda Arntzenius: Well, tell me first of all about how you got the job.

A. Emmanouilides: I was 16 years old and was probably one of the youngest in my high school class. I went to William Penn High School in Philadelphia, which was a girls high school. My father made it very clear to me that I could not expect to go to college. I was going to get a job and probably get married, and that was going to be my life. But I was a passionate reader and, as I say, I was at the top of the class, even though I took commercial courses: shorthand, typing. The counselor at the high school, probably in May (I don't remember whether she called me in or I just went), said that they had gotten a request from the Moore School of Electrical Engineering at Penn that they needed a secretary.

Linda Arntzenius: And that's where the ENIAC¹ was being built.

A. Emmanouilides: Exactly, and so I went to the University of Pennsylvania, a young, red haired girl, and I met Herman Goldstine, who was the liaison officer between the Ordnance Department and the university. There he was in his beautiful Army Ordnance Department uniform, with his gold bars. For some reason – I didn't even know how to do algebra – he hired me.

Linda Arntzenius: Did you feel a little intimidated?

¹ Acronym for Electrical Numerical Integrator And Computer.

A. *Emmanouilides*: I don't know whether I was intimidated or I was just naïve but I got the job. There I was, thrown into a world that, obviously, I had not known even existed, the world of mathematics, the world of thinkers. The young men who were there, the engineers, would answer my questions, "What's an oscilloscope? What's a vacuum tube? What's this, what's that?" because, as I have told my children, and I continue to believe it, if you have curiosity and enthusiasm, you can do almost anything. You don't necessarily need money, and you also don't need, sometimes, formal education, but I have found that you learn a great deal through osmosis.

Linda *Arntzenius*: Well, that will give you more education.

A. *Emmanouilides*: Here I am in my early 80's, I don't know that you would know that I don't have a college degree, and –

Linda *Arntzenius*: No way.

A. *Emmanouilides*: – I think maybe that's a message that needs to be heard. Perhaps today the world is so technological that you do have to have a certain amount of education, but you can be educated in many other ways.

Linda *Arntzenius*: Yes. Absolutely. So, Herman Goldstine, and was his wife –

A. *Emmanouilides*: Adele.

Linda *Arntzenius*: – there, too?

A. *Emmanouilides*: Yeah, she was a mathematician –

Linda *Arntzenius*: She worked there?

A. *Emmanouilides*: – and she was a programmer.

Linda *Arntzenius*: I see.

A. *Emmanouilides*: In fact, I have literature on the women of the ENIAC.

Linda *Arntzenius*: Interesting.

A. *Emmanouilides*: Do you have any of that?

Linda *Arntzenius*: No, I don't. Perhaps you can share that at the end.

A. *Emmanouilides*: Yes, and I can send you copies of it –

Linda *Arntzenius*: Thank you.

A. Emmanouilides: – because there have been papers on the women of the ENIAC, and they were called “computers” –

Linda Arntzenius: Computers, yes, I did know that.

A. Emmanouilides: – because they were the ones who did the programming.

Linda Arntzenius: Yes. It’s interesting that you worked at the Moore School because I imagine von Neumann was working with –

A. Emmanouilides: I think he was, and we can certainly – that’s in all the history books.

Linda Arntzenius: But how did you get from the Moore School to the Institute? That’s an interesting question.

A. Emmanouilides: Yes. The ENIAC was first exhibited to the public on February 14, Valentine’s Day, 1946, and the Goldstines had made their connection with von Neumann, and they invited me to come along with them, and that was –

Linda Arntzenius: Was that the first time you had met von Neumann?

A. Emmanouilides: I got a letter from him inviting me to join the group. I don’t know if I have a copy. I wrote him a one-sentence letter saying I was very happy to accept a position as the secretary for the Electronic Computer Project. As I say, I started here I think on June 1, 1946.

Linda Arntzenius: So, let me just clarify this a minute so that I understand it fully. Was Herman Goldstine moving from the Moore School to the Institute?

A. Emmanouilides: Yes.

Linda Arntzenius: So, was it a case that the ENIAC was completed and they were moving over to the Institute to work on something new?

A. Emmanouilides: Oh, no. No, I think Goldstine got this position because of his relationship with von Neumann. I don’t think the ENIAC had anything to do with the Institute, and we can clarify that by –

Linda Arntzenius: I know that the ENIAC was a separate thing, but I was just wondering why Goldstine moved at that point.

A. Emmanouilides: Well, I think probably von Neumann realized that he had had all this experience, and he would be, obviously, useful to him.

Linda Arntzenius: And you came along, too.

- A. *Emmanouilides*: And they brought me along. I commuted for a year from North Philadelphia.
- Linda *Arntzenius*: So, you traveled from Philly to –
- A. *Emmanouilides*: To Princeton Junction, and then Princeton Junction on the Dinky. At the time, the Institute had a Ford station wagon that was driven by a man named Mr. Harris, and Mr. Harris would pick up any commuters - there may have been one or two - and he would drive us here to the Institute.
- Of course, that was certainly before the building [meaning the ECP building on Olden Lane] was built.
- Linda *Arntzenius*: So, at that time, the Institute was Fuld Hall –
- A. *Emmanouilides*: Oh, yes.
- Linda *Arntzenius*: – so everything was happening in Fuld Hall, and your office was in the basement?
- A. *Emmanouilides*: Yes – down in the semi-circular basement.
- Linda *Arntzenius*: Was Goldstine’s office there?
- A. *Emmanouilides*: I imagine Goldstine had been given an office. Occasionally I would serve as secretary to Professor von Neumann. I would type some manuscripts and letters, if he didn’t have a secretary or if his secretary was too busy, and I remember doing that in Professor von Neumann’s office.
- Linda *Arntzenius*: Mm hmm.
- A. *Emmanouilides*: What’s amazing is I still remember the names of his secretaries.
- Linda *Arntzenius*: Oh, well share those with us.
- A. *Emmanouilides*: Isn’t that crazy?
- There was Claire Cray, who was a pretty girl. She lived in Pennington, and I must tell you, Linda, I haven’t thought of these things for 60 or 70 years, and yet they come back, and Claire Cray was kind of a flighty young woman, and she met a graduate student here from Bolivia whose name was Jaime DeZavala, and then she moved to Bolivia. I don’t know what happened to her. And then there was another secretary whose name was Louise Delsasso, and I think her husband was someone in the Ordnance

Department, and, as I say, occasionally, if they needed extra help, then I –

Linda Arntzenius: Do you remember your very first day?

A. Emmanouilides: Oh, my. My first day? I think I was wearing a blue/purple dress. I can still remember that dress. I don't know that I remember, I wish I did, but I remember lots of other days.

Linda Arntzenius: Now, when you first started, the director was a man –

A. Emmanouilides: Frank Aydelotte.

Linda Arntzenius: – called Frank Aydelotte.

A. Emmanouilides: Yes.

Linda Arntzenius: Did you get to meet him?

A. Emmanouilides: I've started to write a memoir, but one of the interesting things about Dr. Aydelotte was he always shook hands with his left hand. He would reach out, and I – yes, he would reach out –

Linda Arntzenius: How strange.

A. Emmanouilides: – isn't that? Yes, and I don't know whether he had some disability, but that was something that really stays with me that I remember. He had been the president of Swarthmore and was a Quaker, and he had a beautiful white-haired wife. But I do remember that, and I wouldn't call it an idiosyncrasy, it may just have been his way, but he reached out with his left hand.

Linda Arntzenius: He did that to you? Did you see him doing it to other people, as well?

A. Emmanouilides: Oh, no, I don't mean just to me. I mean I would just observe him doing that.

Linda Arntzenius: So, it was something he did more than once?

A. Emmanouilides: Oh, yes. Yes, it seemed to be his –

Linda Arntzenius: Interesting.

A. Emmanouilides: – and von Neumann, he always looked at girls' ankles.

Linda Arntzenius: How interesting. So, was he a bit of a ladies man?

- A. Emmanouilides:* Well, I don't know. I was too young obviously – but it was so interesting. His eyes would go down to women's ankles.
- Linda Arntzenius:* Okay, and all the women wore skirts in those days.
- A. Emmanouilides:* Trivia. Yes, of course.
- Linda Arntzenius:* – so no trousers.
- A. Emmanouilides:* All this trivia.
- Linda Arntzenius:* Yes. Well, these give color to the scene, shall we say? Yes, Frank Aydelotte. I've done some reading, and he comes across as quite a sympathetic person.
- A. Emmanouilides:* Oh, yes, and what he did one year at Christmastime. He invited all the secretaries of the Institute, and they drove us up to the mansion. Professor Einstein's secretary was a woman named Gwen Blake, and she was very interesting because she had some – do you mind my just chattering on?
- Linda Arntzenius:* No, please. Please, we love to get names of people.
- A. Emmanouilides:* Her name was Gwen Blake, and she had something that I have learned is called DiGeorge Syndrome. One of her eyes was blue and one of her eyes was brown.
- Linda Arntzenius:* Oh, how interesting.
- A. Emmanouilides:* Yes, that's a syndrome, and then there was another girl whose name was Mary Ray, and then there were women from the economics department. So, Dr. Aydelotte, before Christmas, invited us to the mansion for tea.
- Linda Arntzenius:* Tell me, were there women computers as there had been with the ENIAC? Were there women computers on the Electronic Computer Project that may have been invited, too?
- A. Emmanouilides:* Well, it wasn't finished.
- Linda Arntzenius:* Oh, it hadn't reached that stage yet?
- A. Emmanouilides:* Yes, then, it was still early.
- Linda Arntzenius:* I see.
- A. Emmanouilides:* He invited us there, and there was a knock on the door and Professor Einstein and Miss Dukas came.

- Linda Arntzenius:* Oh, that's lovely.
- A. Emmanouilides:* You know, what a privilege for those of us, and, stupidly, I don't remember anything that was said, but my guess is some of the older women, the ones who had been here the longest, talked to him about his music, and he sat by the fireplace, and those are images that you never forget.
- Linda Arntzenius:* Was he smoking his pipe, do you recall?
- A. Emmanouilides:* I suppose.
- Linda Arntzenius:* Yes. Fascinating. That's a wonderful story. Was that the only time you sort of interacted with Einstein?
- A. Emmanouilides:* Once, Professor von Neumann sent me down to the director's office to cash a check or get some money, and I bumped right into Professor Einstein, and he very sweetly said, or I said, "Excuse me," and he smiled, and of course we would see him coming here all the time, coming down the walk with Gödel.
- Linda Arntzenius:* Gödel, yes. Tell me about Gödel. Do you remember much about him?
- A. Emmanouilides:* No. As I say, just seeing them together, but I do remember John Kemeny. Do you know John Kemeny?
- Linda Arntzenius:* Was he Einstein's assistant?
- A. Emmanouilides:* He was Einstein's assistant, and, of course, he was apparently one of the most brilliant students that Princeton had ever had, and –
- Linda Arntzenius:* I think he was a Member² here at one point.
- A. Emmanouilides:* I met him through a roommate, a girl that I went to live with after the commuting stopped. Her name was Judy Braude, and she worked as a research assistant for Oskar Morgenstern. She was an economics graduate from Swarthmore and she met John Kemeny. He would come to our apartment and we would cook for him and we would go to the movies together.
- Linda Arntzenius:* Was this a date?
- A. Emmanouilides:* No, just another friend.

² According to *A Community of Scholars*, John G. Kemeny was an assistant in the School of Natural Sciences.

- Linda Arntzenius:* Just hanging out together.
- A. Emmanouilides:* And then, of course, he went on to become the president of Dartmouth.
- Linda Arntzenius:* What kind of movies did you go to see?
- A. Emmanouilides:* We would go to foreign movies in New Brunswick.
- Linda Arntzenius:* So, that was another education.
- A. Emmanouilides:* Yes.
- Linda Arntzenius:* Yes, a lot of exposure to a lot of different aspects of life.
- A. Emmanouilides:* Oh, yes. Yes, and also you have to realize, Linda, that during those years there were extraordinary people at the Institute: T.S. Eliot was here and [Arnold] Toynbee.
- Linda Arntzenius:* Yes. Did you have an appreciation at that time that this was very special?
- A. Emmanouilides:* Oh yes, you cannot possibly not know that, but I was also very fortunate. I'd been commuting, and Salomon Bochner, who I don't think was a Member here, but he was in the –
- Linda Arntzenius:* He was.
- A. Emmanouilides:* Was he?
- Linda Arntzenius:* He was an IAS Member from '45 until 1948³.
- A. Emmanouilides:* Okay, so you see that was synchronous. He lived on Springdale Road, 184 Springdale Road, and he was going to have a sabbatical at Harvard. He had a seven-year-old daughter, Deborah. He wanted someone to stay with his wife and his daughter, and they asked Dr. Goldstine if I would be interested.
- Linda Arntzenius:* That was wonderful.
- A. Emmanouilides:* So, I got to live in this beautiful house.
- Linda Arntzenius:* And you could just walk to work.

³ According to A Community of Scholars, Salomon Bochner was a Member in the School of Mathematics, the Electronic Computer Project 1945-48.

A. Emmanouilides: Walk here. They had a maid, and I had my own room that I didn't have at home, and my own bathroom, and all I had to do was make the orange juice for breakfast. And Mrs. Bochner, whose name was Naomi, I think she was a Smith graduate, took me in hand, and she told me what colors I should wear. She told me I looked like a Renoir painting, and she taught me about chamber music and classical music, and the Impressionists, things that I had no way of knowing.

Linda Arntzenius: It seems though, that you were a sponge, and you were really ready to take all this in.

A. Emmanouilides: I was, and she encouraged me to go to Rutgers, and I would take the bus from here, on Nassau Street, and took an English class at Rutgers one night a week. I didn't know anything. But you're right, it changes your life.

Linda Arntzenius: Yes, it's a wonderful thing.

A. Emmanouilides: And what is ironic is I recently looked up Salomon Bochner to see what had happened to him. He'd gone on to be chairman of the Department of Mathematics at Rice University in Houston. He had passed on as had Mrs. Bochner. Deborah, their daughter, was at UCLA.

Linda Arntzenius: Oh, around the corner from you, practically.

A. Emmanouilides: I wrote to her, and I asked her, "You probably don't remember me," and I got a phone call within a few days. She said, "Of course I remember you. You had red hair, and you used to read me stories."

Linda Arntzenius: Oh, how lovely.

A. Emmanouilides: And we met, and we –

Linda Arntzenius: That's wonderful.

A. Emmanouilides: But can you imagine the irony of that?

Linda Arntzenius: Yes, that's great.

A. Emmanouilides: I'm sorry to –

Linda Arntzenius: No, no, no, this is great, but I will draw you back occasionally to the things that I must get from you. Von Neumann, how did he sound? Did he have a strong accent?

- A. Emmanouilides:* Oh, he had a beautiful Hungarian accent.
- Linda Arntzenius:* Did he have a high-pitched voice or a deep voice?
- A. Emmanouilides:* I don't remember, except that he spoke very rapidly. Hungarian accents are very unique because of the language, and they emphasize I think the last syllable. Do you know Hungarian?
- Linda Arntzenius:* I don't. No.
- A. Emmanouilides:* Yes, but see if you can find a few Hungarians.
- Linda Arntzenius:* Yes.
- A. Emmanouilides:* It's a very distinct accent in the way they speak, and of course his English was flawless.
- Linda Arntzenius:* So, if you heard him in the corridor, you knew immediately –
- A. Emmanouilides:* Yes, I can still identify a Hungarian accent, I think, and John had that, too, because he was from Budapest, as well.
- Linda Arntzenius:* Did he speak in a fast way, or –
- A. Emmanouilides:* I think so. I think very quickly.
- Linda Arntzenius:* Now, when you began working here, it was right at the end of the war, not long after the end of the war, and there were many Europeans at the Institute, and it was around about the time just after the Nuremberg Trials. I wonder if people talked about the war and talked about the Nuremberg Trials, and whether –
- A. Emmanouilides:* My guess is that they certainly must have talked about it among themselves, but if you're only the secretary, nobody is going to –
- Linda Arntzenius:* But, say, in the cafeteria, for example, what were people talking about amongst themselves?
- A. Emmanouilides:* But, you see, I wouldn't be in their company.
- Linda Arntzenius:* So, when you went to the cafeteria, which, again, was on the fourth floor –
- A. Emmanouilides:* Fourth floor, yes.
- Linda Arntzenius:* – of Fuld Hall, would you tend to sit with your colleagues?
- A. Emmanouilides:* Probably other secretaries. Yes.

- Linda Arntzenius:* Right. Do you remember –
- A. Emmanouilides:* I doubt that I – first of all, when you’re so young, as you say, you’re intimidated. You don’t feel that you have a place there, and what would you say to them, or what would they say to you, as well. No, I think the schools, you know, the economists sat with the economists, the humanists, Professor Panofsky, I think they would stay together –
- Linda Arntzenius:* They formed separate groups.
- A. Emmanouilides:* Yes, and the mathematicians together, and what was interesting is, you see, the engineers really had – and I asked Willis and Jack this week. I went to see them because I knew I was coming.
- Linda Arntzenius:* That’s Willis Ware and Jack Rosenberg.
- A. Emmanouilides:* Willis Ware and Jack Rosenberg, and I asked them how much contact they had, and they had very little with the –
- Linda Arntzenius:* The faculty.
- A. Emmanouilides:* – Institute. Yes, you know –
- Linda Arntzenius:* So, they were pretty much –
- A. Emmanouilides:* – they stuck together –
- Linda Arntzenius:* – working, working, I would imagine.
- A. Emmanouilides:* Yes, and perhaps they just didn’t feel that they were welcome.
- Linda Arntzenius:* Oh, really?
- A. Emmanouilides:* In a sense, in the beginning, you know the histories, we were not welcome. That’s why they built that building across the way.
- Linda Arntzenius:* So, when you first came, was that new building under –
- A. Emmanouilides:* No.
- Linda Arntzenius:* – it hadn’t been completed yet?
- A. Emmanouilides:* No.
- Linda Arntzenius:* So, you were crammed into Fuld Hall?
- A. Emmanouilides:* We were down in the basement.

- Linda Arntzenius:* Yes.
- A. Emmanouilides:* Yes, in the basement, and there must be records of when the building was built, so perhaps the idea of building a building was already in flux.
- Linda Arntzenius:* Yes. Yes, I think it probably grew out of necessity.
- A. Emmanouilides:* Oh, yes. They couldn't put that dirty machine here.
- Linda Arntzenius:* Well, that was another question I wanted to ask you. How long after you began working here did you actually move to the new building?
- A. Emmanouilides:* I'm sure as soon as it was ready, and as I say, I don't remember dates that accurately. But I'm sure, as soon as it was ready, we were there. You know the building, and each engineer, or two engineers would have an office together. Goldstine's office was the corner office, with the corner windows, and my little office was right next door to that. There was a drafting room in which there were two draftsmen, a woman named Helen Hart, and a fellow named Peter Panagos, so here we were, two Greeks.
- Linda Arntzenius:* Did you speak Greek to each other?
- A. Emmanouilides:* I don't think he spoke Greek. I wonder what happened to him. He lived with his mother in town. And then, to the other side of the door, there were more offices and, in the back, were the laboratories, where they did the building. In the book that you did, you have that photograph of the draftsmen, the machinists. There was a little Scotsman, his name was Mr. Duncan, and he would bring shortbread.
- You know, it's amazing that I can remember all that.
- Linda Arntzenius:* That's amazing. Did you have cause ever to go to that back room?
- A. Emmanouilides:* Oh, yes, and Mr. Duncan once made me cookie sheets. He had leftover pieces of aluminum, and I still have them. He bent up the sides. I still have those –
- Linda Arntzenius:* So, these were men that were used to working with their hands –
- A. Emmanouilides:* Oh, yes. Yes, they were.
- Linda Arntzenius:* – and could cook, as well. Maybe his wife made the shortbread. You never know.

- A. Emmanouilides: Yes, but the point was there was such a wonderful connection with these people. It wasn't aloof in any way.
- Linda Arntzenius: So, there's Herman Goldstine, and there's the engineers sharing – now the engineers, that would be Bigelow –
- A. Emmanouilides: And I think Adele must have shared her office with her husband –
- Linda Arntzenius: Interesting.
- A. Emmanouilides: It was a larger room.
- Linda Arntzenius: That back room there, can you describe what it was like? Was it noisy?
- A. Emmanouilides: I imagine it was. There was a man named Richard Melville, who was in charge of the fabrication, I think. I suppose it was. You know, they must have had machines there and tools that had to be noisy, but I don't know that I observed all of that.
- Linda Arntzenius: All right.
- A. Emmanouilides: I stayed in my little corner.
- Linda Arntzenius: Okay. Yes, I'm just trying to get a sense of what the atmosphere was like, and I was wondering, there's quite a lot of women who worked there, but a lot of men, too, and I imagine –
- A. Emmanouilides: My guess is the women came after, because when I was there, I and this Miss Hart, and Adele, I think we were the only women that I remember. There were no women engineers.
- Linda Arntzenius: So, you were right in at the beginning when it was being physically built?
- A. Emmanouilides: Yes.
- Linda Arntzenius: That's interesting, and so, presumably, pieces of the machine were arriving, as you said, vacuum tubes and things like that.
- A. Emmanouilides: But then again, I don't – because I'm not a technician and I don't know how it was being constructed, and I guess I was too busy doing what I was doing.
- Linda Arntzenius: Right. Well, then, maybe you can take me through perhaps a typical day for you.
- A. Emmanouilides: There were letters. You know, obviously, there were letters to write. In fact, when they had the exhibit here, ECP 50 Years, I

happened to come that time, and there were letters with my initials at the bottom, the carbon copies.

Linda Arntzenius: That would be A.K.?

A. Emmanouilides: A.K. just A.K.

Linda Arntzenius: Just to mention, your maiden name –

A. Emmanouilides: Oh, it was Kondopria.

Linda Arntzenius: Kondopria.

A. Emmanouilides: Kondopria.

Akrevoe Kondopria Emmanouilides. There were letters that I had typed, and I know that I typed that report, the “Planning and Coding of Problems for an Electronic Computing Instrument.”

Linda Arntzenius: When you typed a report like that, I think the idea – well, from what I’ve read, those reports were quite widely distributed.

A. Emmanouilides: Apparently not. I don’t know how they were reproduced. Have you ever seen a copy?

Linda Arntzenius: That was my question. I was going to ask you.

A. Emmanouilides: Have you seen a copy of any of them?

Linda Arntzenius: No. I was going to ask you how they were reproduced.

A. Emmanouilides: Well, you know you can – in fact, the Institute ought to – there’s a man up in Novato, California whose name is Jeremy Norman⁴, and he has copies of those, signed by Herman Goldstine. I ran into him at the Antiquarian Book Fair in Los Angeles, where he has exhibits. He had an auction at Christie’s in New York on the origins of cyberspace, and the price for that report was \$30,000.00. So, the Institute ought to, I think, for their archives – and I can give you his –

Linda Arntzenius: Yes, contact information.

⁴ In reviewing the transcript, Ms. Emmanouilides provided Mr. Norman’s contact information: Jeremy M. Norman, P.O. Box 867, 936B Seventh Street, PMB238, Novato, CA 94948-0867; Tel: (415) 892-3181; jnorman@jnorman.com; www.historyofscience.com [dealer in autographs, manuscripts, medicine, natural history, science and technology].

A. Emmanouilides: – because I think that’s the kind of thing you ought to have, if you don’t have it here.

Linda Arntzenius: Well, then let me rephrase my question. If you had to type a report, and someone wanted two copies or several copies, did you have to just keep retyping it, or did you use carbon –

A. Emmanouilides: They had a mimeograph machine. I think that’s it, but my guess is when I have seen even the outside cover of those reports, it looks as if it possibly, perhaps it was sent out or duplicated in another way. There may be records someplace of purchase orders, or something, but I believe they didn’t duplicate too many. Yet, again, they might be scattered around someplace.

Linda Arntzenius: So, you would be writing letters, typing letters–

A. Emmanouilides: Yes, and I didn’t know what I was typing. You know, you had “sigma equals,” and you had to be, obviously, very careful to write mathematical equations, and that’s why we bought that Verityper, because it had disks that you could turn around and go from English to Greek to mathematical symbols.

Linda Arntzenius: So, it could take you quite some time.

A. Emmanouilides: Oh, yes, that’s why it was so tedious, and I hope somebody proofread it. I hope they... But, as I’m saying, Linda – what an education.

Linda Arntzenius: It could take you some time to type out a report like that.

A. Emmanouilides: Yes.

Linda Arntzenius: – and, presumably, I would imagine you would have occasion to go back to the author and say, “Is this right? Is this what you mean?”

A. Emmanouilides: You see, they wrote it in manuscript, and even Professor von Neumann wrote by hand. If I had been a smart girl or astute enough, instead of throwing the draft away, you keep it and, who knows? But my guess is that so many treasures have been discarded.

Linda Arntzenius: Did you also answer telephone calls –

A. Emmanouilides: Oh, yes. Yes.

Linda Arntzenius: – for Goldstine or von Neumann, or –

- A. Emmanouilides:* Yes, wherever it was necessary.
- Linda Arntzenius:* Was there a switchboard anywhere?
- A. Emmanouilides:* Not where we were, no. It was telephones. Just telephones. No, we didn't have a switchboard.
- Linda Arntzenius:* Was there one in Fuld Hall? Was there a main one?
- A. Emmanouilides:* Oh, I suppose. I don't –
- Linda Arntzenius:* I wanted to ask you a few questions, again, about the general atmosphere. Because Fuld Hall was the only building and the sort of center of everything, and it was a time, sort of the post-war boom and lots of children – were there lots of children around?
- A. Emmanouilides:* I don't remember a lot of children. Let's see. The people in our project – wait, I brought the list. Maybe you've seen that.
- Linda Arntzenius:* No. Oh, this is great.
- A. Emmanouilides:* George Dyson gave me that, but you see, here's the whole staff, and it's specified what they were, who they were. Oh, you have to realize that, for example, Bigelow, of course, had a wife, Mary, and perhaps they had children, I don't know. And see, Miss Cray, I don't remember this lady, and this young man, he brought from the ENIAC. He came with the ENIAC. Melville. Pomerene was an engineer. Robert Shaw was an interesting man. He was an engineer, also, and I have a photograph at home of a few of them. He was an engineer, and he was an albino. He had pink eyes and white hair, and I think he would send me flowers. I think he was hoping –
- Linda Arntzenius:* You had an admirer.
- A. Emmanouilides:* Willis probably was just newly married, and then this was the draftsman, then Jack Rosenberg came later, and he also was newly married. So, these young men were probably 28 years old, you see? They were very young.
- Linda Arntzenius:* Do you remember when Jack came? Do you remember when he came along?
- A. Emmanouilides:* I just remember how handsome he was –
- Linda Arntzenius:* Really?

- A. Emmanouilides:* – and he gave me a picture, the last week, of himself. I have a photograph of him now, and he gave me this photograph of him taken when he was a strikingly handsome young man.
- Linda Arntzenius:* Did you know about his friendship that developed with Einstein? I think that may be later, after you'd gone, but –
- A. Emmanouilides:* No, not when I was there.
- Linda Arntzenius:* No? It wasn't?
- A. Emmanouilides:* No. Apparently – well, let me see. Oh, it may have been because it was – have you seen his manuscript?
- Linda Arntzenius:* I've seen parts of it, yes.
- A. Emmanouilides:* I'll make copies and send them to you, because it's so – and he just gave me an additional –
- Linda Arntzenius:* More of it? Oh, wonderful.
- A. Emmanouilides:* Yes, so I think you should keep these things.
- Linda Arntzenius:* Yes, gathered all together. Absolutely.
- A. Emmanouilides:* But, you know, he made this hi-fi set for [Professor Einstein.]
- Linda Arntzenius:* Yes. Yes.
- A. Emmanouilides:* Professor Panofsky asked him to do that, and then he and his wife became friends with the Einsteins.
- Linda Arntzenius:* A very nice story.
- A. Emmanouilides:* But my guess is half of Princeton, or the older generation, must have an Einstein story.
- Linda Arntzenius:* I think so. During your typical day, were there any interruptions, pleasant interruptions? I mean did you stop for tea in the morning or coffee in the morning?
- A. Emmanouilides:* I would walk to the Common Room and come here and have tea.
- Linda Arntzenius:* In the afternoon?
- A. Emmanouilides:* In the afternoon, yes, and come to the dining room upstairs for lunch.
- Linda Arntzenius:* Tell me about that.

- A. Emmanouilides:* Yes. I remember there was a couple, and I think their name was Mr. and Mrs. Dills (or Dilkes), although I read in George's book, he talks about the Rockefellows, who apparently worked maybe serving tea.
- Linda Arntzenius:* I don't know. What do *you* remember?
- A. Emmanouilides:* I remember this Mr. and Mrs. Dills –
- Linda Arntzenius:* D-I-L-L-S.
- A. Emmanouilides:* L-L-S.
- Linda Arntzenius:* Dills. Okay.
- A. Emmanouilides:* And they were the people up on the fourth floor who served in or ran the cafeteria.
- Linda Arntzenius:* So, were they cooking the food or –
- A. Emmanouilides:* I suppose, and I remember Mrs. Dills made wonderful rhubarb pie.
- Linda Arntzenius:* Oh, very nice. So, what kind of fare, what kind of thing might you have? This was your lunch –
- A. Emmanouilides:* Lunch. Yes.
- Linda Arntzenius:* – in the middle of the day, so that wasn't your main meal of the day, or was it?
- A. Emmanouilides:* Well, I guess while I was commuting, I just would go home for supper, and yes, it was whatever was served. But I seem to remember that it was nice, healthy food – sandwiches. I'm sure you're aware of it, but the floor up there is cushioned.
- Linda Arntzenius:* I didn't know that.
- A. Emmanouilides:* – because it was built over the library, and the linoleum was kind of soft and cushioned so that there'd be no noise in the library.
- Linda Arntzenius:* Very smart. Yes. It must have felt strange, though.
- A. Emmanouilides:* A little awkward, but isn't that strange to remember all these things?
- Linda Arntzenius:* These are the things that stick in your mind.
- A. Emmanouilides:* Maybe. If you go upstairs to the fourth floor, see if the flooring is the same.

-
- Linda Arntzenius:* Yes. That's fascinating. It's a strange place for a cafeteria, I think. There is an elevator that goes up to the fourth floor and down. I'm wondering if they used that to bring the tea down for teatime?
- A. Emmanouilides:* But isn't there a kitchen? Isn't there a kitchen outside –
- Linda Arntzenius:* Yes. Do you think that's how they made the tea downstairs?
- A. Emmanouilides:* I have a feeling that the Common Room delicacies came from – because they didn't do any cooking there. They needed hot water and cookies.
- Is it more elaborate now, this tea service?
- Linda Arntzenius:* Well, I don't know. I mean, what do you remember?
- A. Emmanouilides:* Just tea and –
- Linda Arntzenius:* Were there teapots or –
- A. Emmanouilides:* – I don't remember even if it was poured. I don't know if someone sat there -
- Linda Arntzenius:* If someone served?
- A. Emmanouilides:* – but I remember a lady in a white uniform, and there were cookies out and plates, I guess plates, and tea.
- Linda Arntzenius:* Were there cups and saucers?
- A. Emmanouilides:* Yes. This was, let's see, '46, '48, there was no Styrofoam.
- Linda Arntzenius:* So, no polystyrene.
- A. Emmanouilides:* No. No, styrene. No, of course, and you have to realize this was elegance.
- Linda Arntzenius:* Yes, very nice.
- A. Emmanouilides:* No, I think there were metal spoons and china.
- Linda Arntzenius:* Yes. Up in the cafeteria upstairs, I know that people – Faculty and staff, I think, and Members – often had dinner in the evening up there.
- A. Emmanouilides:* Did they? I didn't know.
- Linda Arntzenius:* I also think there's a little sort of balcony up there off the –

A. Emmanouilides: Is there?

Linda Arntzenius: – cafeteria. I wondered if that was ever open, whether you'd ever gone out there.

A. Emmanouilides: I don't remember.

Linda Arntzenius: The other question I had about the cafeteria was, because I've seen a lot of photographs and I know from movies of that period that people smoked a great deal, and I'm wondering if –

A. Emmanouilides: Oh, I imagine. Yes. I don't think there was any restriction on smoking. As you say, that knowledge and that restriction certainly came much later. Yes. Or perhaps they didn't smoke, perhaps the Members.

I do remember one thing so vividly in the cafeteria. It was the time when T.S. Eliot was here. He was here, I think, as a visitor for a short period of time, and he came into the cafeteria. He carried his tray and served himself. It was the day that it was announced that he had won the Nobel Prize for Literature. He walked over to the table where his colleagues were seated and they all stood up in unison. I'll never forget that image.

Linda Arntzenius: Did you know what that was about?

A. Emmanouilides: Yes, I knew. Even then, I knew who T.S. Eliot was. But can you imagine? So, that's what I'm telling you, my dear, how can anybody be so lucky?

Linda Arntzenius: That's great.

A. Emmanouilides: I tell these stories to my children, and they really are interested.

Linda Arntzenius: Well, I mean, you know, here are people like Dirac and Niels Bohr, these names are –

A. Emmanouilides: Yes, I remember Dirac.

Linda Arntzenius: You do?

A. Emmanouilides: Yes.

Linda Arntzenius: What was he like?

A. Emmanouilides: Well, I just remember him walking around.

Linda Arntzenius: Tall?

A. Emmanouilides: Yes, tall and –

Linda Arntzenius: Thin?

A. Emmanouilides: – rather stern, I think. Yes, and –

Linda Arntzenius: Preoccupied, perhaps?

A. Emmanouilides: I suppose, yes.

I don't know if it was Dirac who had two little girls, (did he have?) two beautiful little girls, and then there was another French professor whose name was Queney, I believe Q-U-E-N-E-Y, and Toynbee was here, Arnold Toynbee was here, and I don't know whether he was in the process of writing *A Study of History* or whether he had done it, but we would see him walking around. I wasn't that uneducated that I didn't know who he was – and Niels Bohr was here, and Norbert Wiener came, and they would come to the [Electronic Computer] Project because they wanted to see what von Neumann was doing.

Linda Arntzenius: So, people were curious about it –

A. Emmanouilides: Yes.

Linda Arntzenius: – and would come over and get a tour?

A. Emmanouilides: Yes.

Linda Arntzenius: Who would give them the tour?

A. Emmanouilides: I think von Neumann would come, and Goldstine.

Linda Arntzenius: Before we move on from Dirac, when did you see his daughters?

A. Emmanouilides: I think on the grounds. There were two little girls, very pretty. I seem to remember two pretty little girls, but it's funny, I thought he was French but he wasn't, was he? He was –

Linda Arntzenius: No, he was English.

A. Emmanouilides: – English. Yes.

Linda Arntzenius: Yes. Yes. I think Freeman [Dyson] was there in '48?

A. Emmanouilides: Oh, yes, he told me last night, when I met him. He said he came as a postdoctoral student.

Linda Arntzenius: Did you remember?

- A. *Emmanouilides*: No, but apparently we may have passed each other.
- Linda *Arntzenius*: Another question I have for you is did you have any sense that there was any security on campus? I mean if you go into any place today, there are security personnel. Did you have any sense of that being there?
- A. *Emmanouilides*: No, I think everything, as far as I could tell, was very open. In fact, last night, when I came, we walked right into the lobby, and nobody said, “Who are you and why are you here?” No, I never had that feeling, and even though I don’t – well now, come to think of it, for a while, Nicholas Metropolis – do you know those names? And Stanley Frankel. They came from Los Alamos. George [Dyson] talks about them in his book⁵, and they were from Los Alamos. Nicholas was, I think, a mathematician, and Frankel, I suppose, was too. But they came here, and from what I have read subsequently, they were working on the hydrogen bomb, and they were going to use the computer. Nicholas was a Greek from Chicago, also very handsome. Their office was sort of in the same area where the engineers were, and there were constant correspondence, letters between them and Post Office Box 1663, Santa Fe, New Mexico, which was the address of the Los Alamos labs.
- Linda *Arntzenius*: Did you write those letters?
- A. *Emmanouilides*: No, I think these were his own personal –
- Linda *Arntzenius*: Hand-written personal?
- A. *Emmanouilides*: Well, whatever it was. There were big, brown envelopes, and then letters, correspondence would come back addressed to him, because they were, I would assume, obviously working on very secret –
- Linda *Arntzenius*: Yes.
- A. *Emmanouilides*: But I didn’t have the feeling that the building, or that they needed any kind of security, and perhaps it was an innocent time. Do you think that might have been? I mean now we’re so paranoid about security, but I think those – oh, then another fellow came. I think his name was Robert Richtmyer, and I think he was maybe involved in Los Alamos, as well.

⁵ George B. Dyson, *Darwin Among the Machines: The Evolution of Global Intelligence*, Addison-Wesley, 1997.

- Linda Arntzenius:* I wonder what they were doing, because – well, when you started, they were building the machine, and I don't have a sense of when it became operational.
- A. Emmanouilides:* I think in the '50s. I think it –
- Linda Arntzenius:* So, perhaps little bits of it were operational, who knows?
- A. Emmanouilides:* Yes, and as I say, my lack of education – yes, you have Nicholas Metropolis there.
- Linda Arntzenius:* Also Gilbert Hunt.
- A. Emmanouilides:* Yes. Gilbert Hunt was a meteorologist. His wife's name was Mary Hunt, and I wonder what happened to him, and Philip Duncan Thompson. He was an army officer, and he was brought in to the meteorology department. I found out later, he's also passed on, and he was head of the meteorology department at University of Indiana.
- Linda Arntzenius:* And these are people that you met here?
- A. Emmanouilides:* Oh, yes. Yes.
- Linda Arntzenius:* Gilbert Hunt and Jule Charney.
- A. Emmanouilides:* Charney, and Charney's son went on to be editor of the Saturday Review of Literature. I'm full of trivia, my dear.
- Linda Arntzenius:* Oh, no, this is wonderful. It gives a lot of background.
- A. Emmanouilides:* And also Erwin Panofsky's son was a meteorologist, and he was there, too.
- Linda Arntzenius:* I didn't know that. He was here, too?
- A. Emmanouilides:* His name was Hans Panofsky.
- Linda Arntzenius:* Interesting.
- A. Emmanouilides:* My guess is there must be records here.
- Linda Arntzenius:* Oh, yes. Yes, but firsthand accounts are irreplaceable.
- A. Emmanouilides:* Yes, there were all there, and they came a little bit later, and then a man came from Scripps Institute of Oceanography to work with them, and his name was Carl Rossby, R-O-S-S-B-Y, and I think there may have been another meteorologist.

Linda Arntzenius: Did you observe von Neumann working with any of these people?

A. Emmanouilides: No.

Linda Arntzenius: Did you observe any of the –

A. Emmanouilides: Oh, the interchange?

Linda Arntzenius: – interactions? Yes.

A. Emmanouilides: Probably not. I don't know. I think he and Bigelow probably had much more contact than with the other engineers, the younger men.

Linda Arntzenius: So, Bigelow was the chief –

A. Emmanouilides: The chief engineer. Yes.

Linda Arntzenius: – engineer, and he and von Neumann would meet –

A. Emmanouilides: Oh, yes. Yes, and Goldstine.

Linda Arntzenius: – yes, and Goldstine. Interesting. Willis Ware, what was his job? Do you remember?

A. Emmanouilides: He was one of the engineers, yes, and he left here – I've forgotten when Willis left, but he went on to RAND in Santa Monica, and became head of the computing section at RAND. He's very prominent and wrote a number of books there.

Linda Arntzenius: When the engineers were talking about the machine or working on the machine, what did they call it? Did they call it the machine?

A. Emmanouilides: I don't know. I mean, did they ultimately call it the MANIAC, or the– no, it wasn't the EDVAC. The EDVAC was the Eckert-Mauchly

Linda Arntzenius: I just wondered what –

A. Emmanouilides: Probably just the machine, or the computer.

Linda Arntzenius: Yes. What did you call it? Do you remember?

A. Emmanouilides: It.

[Laughter].

The machine. I guess we called it the machine.

- Linda Arntzenius:* I notice that the invitation says Miss Akrevoe, Electronic Computer -
- A. Emmanouilides:* Computer Project, yes. That's Mrs. von Neumann's writing, and she spelled my name wrong, and at this party, I remember I had a beautiful black *faille* dress, and it came off the shoulder. It was really very pretty, and I got to dance with J. Robert Oppenheimer.
- Linda Arntzenius:* Oh, for heaven's sake. You know, they [the von Neumanns] are famous for holding rather swanky parties.
- A. Emmanouilides:* Oh, yes. Yes.
- Linda Arntzenius:* Did you feel that this was a sophisticated party?
- A. Emmanouilides:* Oh, yes. I mean when would I go to a party like that?
- Linda Arntzenius:* So, you really got dressed up?
- A. Emmanouilides:* Oh, yes.
- Linda Arntzenius:* Did you have high-heels on?
- A. Emmanouilides:* Oh, I imagine. I probably had a black bow in my hair. Yes, I remember that dress.
- Linda Arntzenius:* They lived off campus?
- A. Emmanouilides:* They lived on Westcott.
- Linda Arntzenius:* How did you get there for the evening? Do you remember?
- A. Emmanouilides:* Who knows? Somebody took [me]. In fact, we passed Westcott on the way to the Chauncey Center, and I think their address was 26 Westcott Road. They were going away, and I once babysat with Marina. I understand she's a trustee.
- Linda Arntzenius:* Yes, she is.
- A. Emmanouilides:* Is she coming today?
- Linda Arntzenius:* I don't know.
- A. Emmanouilides:* We could look at the roll.
- Linda Arntzenius:* Yes. I'm not sure, but that must have been something to receive an invitation from the von Neumanns.

- A. Emmanouilides: Yes, it was. And I think at that particular time, I think they invited many of us.
- Linda Arntzenius: That's nice.
- A. Emmanouilides: Let's see. That was May. Was it May? Yes, it was May.
- Linda Arntzenius: March 13.
- A. Emmanouilides: Oh, March.
- Linda Arntzenius: Tell me a little bit about the party. Were there cocktails served?
- A. Emmanouilides: I think it must have been very nice. I think the house had a balcony, a loft, if I remember, and I'm sure it was not any kind of party that I'd ever been to. I'm sure there was lots of food and beautiful – and Klari, of course, was the hostess, and one of the comments that has been made constantly about Professor von Neumann is that he always wore a suit. He always looked like a banker.
- Linda Arntzenius: You know, I haven't heard that, but now that you come to mention it, he does.
- A. Emmanouilides: I mean in any of his biographies, one of the comments is that he – he came, of course, from a very wealthy, refined, elegant, educated family - and my guess is that he never wore blue jeans.
- Linda Arntzenius: No.
- [Laughter]
- A. Emmanouilides: No, he was always very elegantly dressed in a banker's suit and silk tie, and one of the things that I marvel at in his biographies is his memory, how sharp it was, that he could read a text and verbatim give it back, and he knew several languages, like ancient Greek.
- Linda Arntzenius: Amazing.
- A. Emmanouilides: Imagine what his brain was, and how tragic that he died so young.
- Linda Arntzenius: Very sad. Why did you leave the Institute?
- A. Emmanouilides: I left the Institute, and it was a stupid thing to do.
- I thought, not that I had learned everything, but I thought maybe I should go back – and I think my mother, in fact, George [Dyson in

his forthcoming book about the Electronic Computer Project] mentions that my mother thought it was time for me to get back home. I was still 18 or 19 years old, and so I went back to Philadelphia, and perhaps, as I say, I was very naive and I thought, "I've done as much as I could do." Who knows? It was not a very wise decision. But I went back to Philadelphia, and I got a job at the Community Chest. Not a very interesting job. I left that, and then I went to work for a Jewish settlement house in south Philadelphia. I stayed there perhaps a year. This is personal, but I'll tell you anyway, and then, at an Easter party that our family had been invited to, I met a young Greek Egyptian. I don't mean to shock you.

Linda Arntzenius: That's okay.

A. Emmanouilides: And ten days later, we eloped.

Linda Arntzenius: Golly, that was fast!

A. Emmanouilides: You know, he – oh, it was stupid.

Linda Arntzenius: He swept you off your feet?

A. Emmanouilides: Exactly. I was 21 years old. So, we went to New York, and my poor parents, it was the shame of their life, their nice daughter –

Linda Arntzenius: Yes.

A. Emmanouilides: And I went to New York and I had to, obviously, find a job, and because of the academic experience, I went to NYU and I got a job with Sidney Hook. I was secretary to the Department of Philosophy. Professor Hook had been a student of John Dewey's, and he was one of *the* leading American philosophers, and he hired me. And then, I had a baby and left, went to Washington, and then that dear husband went to work one day and never came back.

Linda Arntzenius: Oh, well –

A. Emmanouilides: We don't need to do this, but what I'm saying is that he – and I don't mean to get into these personal things - but he did me the best favor in my life because I met my husband on a Greyhound bus, and we've been married 50 years, we have four subsequent children, and I've had a very good life.

Linda Arntzenius: All's well that ends well.

A. Emmanouilides: Absolutely.

Linda Arntzenius: That's great. Well, we're not quite ready to leave the Institute yet, because I did want to ask you a little bit more about socializing. I get the impression that the people on the Electronic Computer Project were working hard.

A. Emmanouilides: Yes.

Linda Arntzenius: I wondered what they did in their leisure time. I mean Fuld Hall is here, Princeton is a mile down the road, what did they do in the evenings? Do you have any sense?

A. Emmanouilides: The Goldstines were very nice to me, because they brought me here, and I remember for a birthday they gave me a copy of *Madame Bovary*, and I still have it. Oh, I remember, gradually, as I started to live here, I met Judy and we would go – I can only speak for myself - we would go folk dancing in town. We would stay in our apartment. My guess is that they socialized with each other.

Linda Arntzenius: In each other's homes.

A. Emmanouilides: Yes, and some of them, afterwards, lived in those wooden buildings that were here. I don't think they commuted, even though, in the beginning, these were their addresses in Philadelphia, possibly⁶. But, you see, Bigelow already lived here. Yes, see here? They lived here in Princeton, so my guess is they socialized with each other. I don't know.

Linda Arntzenius: When von Neumanns had a party, I know you only have the one experience to go by, but do you recall whether the music was recorded or whether it was a live band?

A. Emmanouilides: No.

Linda Arntzenius: A hi-fi? Did they have a hi-fi then?

A. Emmanouilides: Oh, my goodness. Possibly.

Linda Arntzenius: I remember Jack Rosenberg building a hi-fi for Einstein, so it must have been something that they did then.

A. Emmanouilides: I doubt that there was live music. My guess is that perhaps it was just background – if, indeed, they had music, or it was just conversation.

⁶ See list attached to this transcript.

- Linda Arntzenius:* Well, it does say, "Drinks, dance, food!"
- A. Emmanouilides:* Oh, dance. Yes, there was dancing. As I said, I danced with "Oppie."
- Linda Arntzenius:* That's right.
- A. Emmanouilides:* I wish I remembered what – It was very nice. You know, it was a simple foxtrot or something, and I guess his wife was there.
- Linda Arntzenius:* Did you ever meet her?
- A. Emmanouilides:* I saw her and her children.
- Linda Arntzenius:* You saw her?
- A. Emmanouilides:* I don't think I ever met her, and, in a sense, I didn't really meet him.
- Linda Arntzenius:* The Institute, they give parties for many occasions, birthday parties, nowadays – and I was wondering whether, back then was there a party when Aydelotte left, and when Oppenheimer came in?
- A. Emmanouilides:* Yes, and if there were, as I say, there were certainly social –
- Linda Arntzenius:* Levels.
- A. Emmanouilides:* Oh, of course. My guess is that there were all sorts of nice – but, by the same token, you see, the Institute was only 15 years old. It was still very young. If Fuld Hall was built in 1930⁷, and this was not even 1950, perhaps it was in the process of developing itself.
- Is that valid?
- Linda Arntzenius:* Absolutely. I think you're right. Yes.
- A. Emmanouilides:* Perhaps it was in the process of developing itself, and I remember some of the – what did they call them? Members, you know, the young people who had come. I remember one, I don't even remember his name, a young fellow, and one of the things that struck me, as young as I was, was how they lacked social polish.
- Linda Arntzenius:* Interesting.

⁷ Fuld Hall was erected in 1939.

A. Emmanouilides: You know, you're doing mathematics or you're doing physics, and you've been raised to concentrate, and they were rather clumsy young men. Is that unfair?

Linda Arntzenius: No, I don't think so. I think you might find a few like that nowadays. I think I have one at home, actually.

A. Emmanouilides: But I just seem to remember they were awkward, say, with young women.

And I do understand that.

Linda Arntzenius: Yes.

A. Emmanouilides: Certainly, as a mother, you understand it.

Linda Arntzenius: Yes. Yes, I think that's interesting that you observed that.

I think it's attributed to Oppenheimer that he began a series of dances at the Institute. I don't know whether that was after you had gone, but I wondered if you had ever attended an evening dance in the Common Room.

A. Emmanouilides: No. Did he do that for the whole Institute?

Linda Arntzenius: I believe so.

A. Emmanouilides: Oh, how nice. Oh, that must have been lovely.

Linda Arntzenius: So, did you get the sense that you were in a man's world here?

A. Emmanouilides: Oh, yes. Yes. I think there were very few women then – let me see - oh, of course, Hetty Goldman in the School of Classical Studies.

Linda Arntzenius: Did you meet her? Did you know her?

A. Emmanouilides: No, but she lived around the corner from Springdale Road. She lived on one of the cross-streets

Linda Arntzenius: Newlin.

A. Emmanouilides: Yes. I think there was a woman named Olga Taussky. It's funny that name comes up. There may have been a few, but I noticed there's certainly many, many women now, and perhaps mathematics was not a field that women went to at that time. I think there may have been, perhaps in the School of Classical Studies, you know, the archaeology department.

Linda Arntzenius: Back then it was –

A. Emmanouilides: It was Hugh Thompson [ed. note: Homer Thompson], Paul Clemens [Paul Clement], Panofsky, and of course I got interested in that because they were doing excavations in Greece, and I think the school was instrumental in restoring the Agora in Athens. I remember there was a Greek professor here whose name was – oh, my dear, you're digging out all sorts of things. His name was Márkellos Mitsòs, and he was visiting from Athens and stupid Akrevoe. I invited him to come to our house. I said, "You come to visit and my mother will make you a Greek dinner," and he came and –

Linda Arntzenius: I'm sure he was delighted.

A. Emmanouilides: – but it's also naive, isn't it?

Linda Arntzenius: Well, but it's also part of the fact that this place seemed like a little world apart –

A. Emmanouilides: Yes.

Linda Arntzenius: – but an international world apart.

A. Emmanouilides: Oh, yes –

Linda Arntzenius: Did you get the feeling that this was –

A. Emmanouilides: As I say, I think he was the only – Nick Metropolis and Panagos, but they were Greek Americans - but I think he was the only one that I ever ran across from Greece. I understand today it sounds like a Greek professor is going to give a talk this afternoon.

Linda Arntzenius: So, how did he get over to Philadelphia? Do you know?

A. Emmanouilides: I imagine he took the train and somehow he got to our – and you have to realize, my family was, as I say, not at all sophisticated, very simple, but very hospitable, and Greeks from Turkey are different from Greeks in Greece, because the Greeks in Greece were poor. They were villagers, they were peasants, but the Greeks from Turkey had been there several thousand years, they went through Byzantine... I have a wonderful photograph of my mother and her sisters, and my mother – she was probably 15 years old – is wearing a lovely dark dress with a bow in her hair, and her sisters are all in white linen with white stockings and white shoes, so a complete contrast, and the Greeks from Turkey sort of looked down on the –

Linda Arntzenius: The mainland.

A. Emmanouilides: – The mainland. My mother never set foot in Greece, but my husband’s family were refugees, also, and when they came to Greece, they were shocked because they were raised to be very religious and respectful. They came to Greece and the men on the dock would blaspheme God and Christ, and it was terrible shock to them. So, they were outsiders for a long time.

Linda Arntzenius: But they welcomed your guest –

A. Emmanouilides: Yes.

Linda Arntzenius: – and I’m sure he got some very good Greek food.

A. Emmanouilides: Yes, the Greeks from Turkey are the best chefs.

Linda Arntzenius: Fantastic. Now, are you a good cook?

A. Emmanouilides: I give cooking demonstrations at our Greek festivals.

Linda Arntzenius: You do? Oh, that sounds wonderful.

A. Emmanouilides: Do you have a Greek festival here? You have a few Greeks here.

Linda Arntzenius: There’s a few, mostly Italian-American festivals here.

What was your first interaction with the Institute after you left?
When did you first come back for a visit?

A. Emmanouilides: Let me see. My youngest daughter, Sophia, was an intern at National Geographic. She was the first undergraduate geography student to get an internship at NGS, and then she had a summer job, kind of an internship, up in the Adirondacks. I came to visit her and I brought her here because, one by one, I want my children to see this place, and we came back then, and we went to the ECP building, and I think we may have come into the Common Room, but I don’t think I saw anyone. And then, I came back – why did I –

Linda Arntzenius: When was that? What year was that? Do you remember?

A. Emmanouilides: Oh, let me see. Sophia, let’s see, she’s been married 15 years, and 15 from 80-some, I would guess maybe ‘80s. Would that be right? That’d be 20 years ago. Yeah, I think so. As I say, we went there and I think by then, of course, it had been a nursery school, and we may have come in. I may have shown her the Common Room.

- Linda Arntzenius:* The basement of the Common Room, the basement of Fuld Hall, has that changed a great deal?
- A. Emmanouilides:* Well, George took me down there. I don't know.
- Linda Arntzenius:* George Dyson?
- A. Emmanouilides:* George Dyson. I don't know. I mean we walked around and he showed me all the files, that there were all these file cabinets that I guess –
- Linda Arntzenius:* That was some years ago?
- A. Emmanouilides:* No, not too many. When did I meet George? Oh, when the 50th anniversary –
- Linda Arntzenius:* The 75th anniversary?
- A. Emmanouilides:* No, not the 75th. The 50th anniversary of the ENIAC, of the computer, which would have been 52, 82 –
- Linda Arntzenius:* 2002?
- A. Emmanouilides:* I don't know, but someplace we can read that. Oh, I came here – why did I come here? Oh, now I remember. In Fort Collins, where my daughter lives, she annually has a big Greek picnic, and they roast lamb on a spit and they have 150 people, and she said, “Oh, Louie has a friend whose mother is from Princeton, and you have to meet her.” So, I did meet this lady, whose name was⁸ – I'll remember – and she was coming here for her 50th high school reunion. I said, “I'm going to be in Philadelphia, and let's meet in Princeton.” So, our date was for lunch, and since I got here early, I came out here and that's when the exhibit was on, where I saw all these papers and the photographs, and everything. It was a different librarian, whose name I have someplace, preceding Ellen and –
- Linda Arntzenius:* Marcia?
- A. Emmanouilides:* – Marcia, and I saw these papers, and she said to me, “George Dyson is here, and I'm sure he'd like to speak with you.” So, I left her my telephone number in Philadelphia, and George immediately called me and I came back, and then we got to know one another. But this woman, Caruso was her name, and her father was Woodrow Wilson's tailor.

⁸ When reviewing the transcript, Ms. Emmanouilides recalled that her name was Caruso.

Linda Arntzenius: Oh, for heaven's sake. That is a small world, isn't it?

A. Emmanouilides: Absolutely.

Linda Arntzenius: Yes. Oh, my.

[Crosstalk]

Since your time here, you've learned a great deal about the Institute, and I understand you collaborated on an exhibit –

A. Emmanouilides: I don't remember –

Linda Arntzenius: – for a mathematical association?

A. Emmanouilides: Oh, yes. Yes. I met a woman who teaches mathematics at one of the community colleges, and believe me, as much as I'm talking now, I don't usually talk about this because I don't know that people are familiar with it, or it's another world. But I thought, "She's a mathematician. She'll know what I'm talking about," and I told her and she got so excited, and she said, "I'm the chairman of this program. Would you like to come?" and so I collected photographs. I did ENIAC, Institute for Advanced Study, Goldstine and von Neumann, and I put them on panels, and I still have them. Of course, these kids, even though they were computer students, they treated it as if it were a time long past.

Linda Arntzenius: Yes, of course. To them it is

A. Emmanouilides: Yes, to them it is, but the older people, the faculty were interested, but it was nice for me to do it because I could organize my thoughts.

Linda Arntzenius: Very good. Well, we're coming to the end of our interview, but I want to give you some time to gather your thoughts and see if there's anything or anyone that you recall that we haven't mentioned that you would like to put on record, an encounter, perhaps, with someone or a particular memory of someone.

A. Emmanouilides: I think the important thing that has, in a sense, motivated [me] in my life is that - whether it was just, as I say, luck. Now, as I look at my own children, I think you have to be attuned to picking up the right opportunities, and there was something in that child, that 21-year-old, or no, the 17-year-old, that knew there was another world. Her parents couldn't give it to her, but somehow she sensed that there was something different. I consider it the greatest blessing in my life that I went to Penn, I came here. And each time

–

- Linda Arntzenius:* It opened your eyes.
- A. Emmanouilides:* Oh, more than that. More than that. It made me a different person. I have a sister who is two years younger than I am, who married, had a daughter and lived all her life up in Troy, New York, and we are black and white, completely different. She doesn't know what I'm talking about. I wouldn't impose my past. You shouldn't do that.
- Would you call it providence? I don't know what you'd call it.
- Linda Arntzenius:* Well, as you say, I think you have to recognize an opportunity when it comes your way, and I think that, clearly, you've passed something on to your children.
- A. Emmanouilides:* Oh, yes, I hope so, and I have five children. My husband is a physician. None of them became physicians. Chris, when he was a little boy [was asked:] "Aren't you going to be a doctor, like your father?" and he said, "I can't be a doctor because my Daddy knows everything," which is pretty intimidating for a child, so he became a television person, and Martha is an artist. Sophia, the youngest one, is a geographer, and Elizabeth, she finally has found her calling. She's 50 years old, and she teaches children with reading handicaps. When I am honest with myself, I think what I did vicariously was directed my children to do the things that I didn't do.
- Linda Arntzenius:* I think we all do that to some extent.
- A. Emmanouilides:* Did you do that?
- Linda Arntzenius:* Well, I think I tried to. I'm not sure I succeeded, but then you get over it.
- A. Emmanouilides:* How old is your son?
- Linda Arntzenius:* He's 21.
- A. Emmanouilides:* Oh, he's still young. He'll find many different things.
- Linda Arntzenius:* He's a computer scientist.
- A. Emmanouilides:* Is he? Yes.
- Linda Arntzenius:* He's very happy. Oh, I thank you so much for giving me your time.
- A. Emmanouilides:* I hope I didn't babble on too much.

- Linda Arntzenius:* Not at all. It's fascinating. I have a friend in Princeton who came up to me one day, and she shook my hand and she said, "Now you have shaken the hand with the hand that shook the hand of Einstein."
- A. Emmanouilides:* See, I told you there are hundreds of Einstein stories.
- Linda Arntzenius:* Yes, but now I have shaken the hand that shook the hand of Aydelotte.
- A. Emmanouilides:* Oh, yes.
- Linda Arntzenius:* The left hand of Aydelotte.
- A. Emmanouilides:* Yes, the left. Is anybody around here who remembers him? Oh, Freeman Dyson must remember him, don't you think?
- Linda Arntzenius:* Yes, I'm sure.
- A. Emmanouilides:* I would think so.
- Linda Arntzenius:* But I haven't heard that before. I'm just going to put this off now. Well, first, before we finish, if there's anything you want to add about anyone we've spoken about.
- A. Emmanouilides:* Well, as I say, this girl, Judy, that I lived with, who worked on the theory of games with Morgenstern, she then met a graduate student in economics here whose name was Fred Balderston.
- Fred's father was the dean of the Wharton School at the University of Pennsylvania, and they married and had four children, and then he became a member of the economics department at Berkeley and became, for a period of time, either the provost or someone up there, and they had a wonderfully happy life. Judy died of cancer, and Fred married a widow who was Judy's best friend, and they had a happy few years together, and he's gone now, too. But, as I say, there was a unique society of people that came here, that were here. Walking down the streets yesterday, you could see that this is a unique community, and you're so fortunate to be here.
- Linda Arntzenius:* Absolutely. Did you revisit the place where you had lived on Nassau Street?
- A. Emmanouilides:* I'm going to drive Martha past there. We lived over a garage.
- Linda Arntzenius:* I wonder if it's still there. That would be interesting.

A. Emmanouilides: 345 Nassau and Springdale, I'm going to take her on Springdale and show her that house.

Linda Arntzenius: Well, before we end, I'll just say how grateful I am to you for spending time with me and giving me your memories of your time at the Institute..

A. Emmanouilides: It was a privilege. It really was a privilege, and I hope it'll be useful to you.

[End of Audio]